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# Systematic Literature Review: Financial Performance on Financial Distress

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**Abstract**

*This study aims to examine articles related to the effect of financial performance on financial distress. This study uses the Systematic Literature Review (SLR) method to identify, evaluate, and synthesize relevant empirical research results from reputable databases such as Scopus and Shinta. The literature search was conducted using a combination of the keywords "financial performance" and "financial distress." Of the 171 articles identified, 20 articles met the inclusion criteria after undergoing a selection process using the PRISMA protocol, consisting of 13 articles from Scopus and 7 articles from Shinta. The results of this study indicate that financial performance affects financial distress. Several studies show various types of models/systems for predicting financial distress and other factors that influence financial distress. The results of this research can be expected to increase in-depth knowledge about the correlation between financial performance and financial distress, as well as provide useful insights for academics, regulators, and practitioners in managing corporate financial risk. By providing the best understanding of the components that influence financial distress, companies can take more proactive measures to maintain their financial stability and improve their overall operational performance.*

**Keywords: financial performance, financial distress**



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## INTRODUCTION

Financial distress is a condition in which a company is no longer able to meet its debts or other obligations. It is often viewed as an early warning stage before the most severe outcome, namely corporate bankruptcy. Financial distress does not only damage a firm's financial system, but also disrupts the organization as a whole. The loss of financial resources and human capital may ultimately force the company into liquidation (Supriyanto, 2024).

Financial distress represents a decline in a firm's financial health which, if not properly managed, can culminate in bankruptcy. This condition has wide-ranging implications for business continuity, access to funding, and firm value, and it also influences the decisions of key stakeholders—management, investors, creditors, and regulators. In the literature, financial distress is commonly identified using prediction models such as the Altman Z-Score, Ohlson O-Score, or the Zmijewski model, which extract risk signals from accounting and market data. Conversely, financial performance—typically proxied by profitability (e.g., ROA, ROE), liquidity (current ratio, quick ratio), leverage (DER, DAR), efficiency/activity (TATO), operating cash flows, and market indicators (EPS, MBV, returns)—reflects the firm's ability to generate profits, meet short- and long-term obligations, and manage its capital structure in a sustainable manner.

Prior studies have produced mixed empirical findings. Metwally et al. (2025), who examine banks in the MENA region, show that bank "health" in MENA is strongly influenced by internal bank characteristics and macroeconomic conditions. Across various panel estimations (pooled OLS, fixed effects/FE, and GMM), profitability (ROA, ROE), economic growth (GDP), inflation, and stock market returns frequently emerge as significant. This implies that when the economy grows and banks are more profitable, the risk of distress tends to decline, whereas high inflation can worsen financial distress.

Sasongko, Ilmiyono, and Tiaranti (2021) find that liquidity, as measured by the current ratio (CR), has no significant effect on financial distress. They argue that the level of CR does not guarantee that current assets are actually used to settle short-term liabilities. In retail practice, current assets may be tied up in inventories or receivables, or allocated to operational financing, so that CR does not automatically reflect the availability of cash to prevent distress. Therefore, although in theory CR measures the ability to meet short-term obligations, in their sample it does not show a significant effect on financial distress.

Ramadini (2023), examining Food and Beverage subsector firms, finds that profitability and liquidity reduce the likelihood of financial distress, whereas sales growth


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and leverage do not significantly affect financial distress. According to this study, the sheer level of debt does not automatically determine financial distress. As long as the firm is able to generate operating profits, those profits can be used to service debt, thereby mitigating distress. In this sample, profitability "neutralizes" the effect of leverage, rendering the leverage coefficient statistically insignificant.

By contrast, Putri et al. (2024) report that liquidity and profitability have a negative effect on financial distress, while leverage has a positive effect on financial distress. This differs from the two previous studies which suggest that liquidity and leverage do not significantly affect financial distress. According to Putri et al. (2024), profitability—proxied by ROA—captures the efficiency of asset utilization in generating earnings. Strong earnings provide internal cash flows to cover operating costs and obligations, thereby reducing the probability of default and financial pressure. Leverage—proxied by DAR—measures the proportion of debt financing relative to total assets. Higher debt levels imply greater interest burdens and fixed commitments; when revenues weaken or costs increase, the firm's cash flow "breathing space" narrows, raising the risk of default. Arifuddin et al. (2023) arrive at similar conclusions to Putri et al. (2024), namely that liquidity, profitability, and leverage jointly influence financial distress.

Based on these findings, there remains a research gap concerning the extent to which financial performance can influence financial distress and how other factors also contribute to and predict the occurrence of financial distress. Therefore, this study aims to conduct a Systematic Literature Review (SLR) to identify the pattern of relationships, the strength of the effects, and contextual factors that mediate the linkage between financial performance and financial distress. The results of this study are expected to provide an overview of firms' financial conditions and to be used to identify companies that are more likely to avoid financial distress.

## LITERATURE REVIEW

### Agency Theory

The interaction between shareholders and management, who act respectively as principals and agents, is explained by agency theory. An agency relationship arises when the principal delegates authority to the agent to perform certain tasks on the principal's behalf (A. Fitri et al., 2022). A company's ability to generate stable dividends and operate on a sustainable basis is a sign of strong financial success and long-term financial stability (Achyani & Kusumawati, 2023).


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Agency theory seeks to optimize the interests of each party (principal and agent) by taking into account the environment in which choices are made and by evaluating the outcomes of those decisions. Conflicts of interest, information asymmetry, and differing risk preferences between principals and agents give rise to agency problems, which are then managed through monitoring mechanisms, incentive schemes, and governance structures.

**Signaling Theory**

Signaling theory explains how information is transmitted from informed parties to less informed parties. In this context, those who possess superior information seek to convey relevant signals so that information recipients can extract value from that information. The relationship between signaling theory and financial problems is grounded in the data contained in a company's financial reports. This information enables observers to assess the firm's financial capacity and condition (Ayem et al., 2023).

Based on signaling theory, managers provide both positive and negative signals to stakeholders through disclosures and financial performance indicators. These signals help managers intervene to address emerging problems, particularly potential financial distress within a company. Signaling theory thus aims to enable managers to take corrective actions early when warning signs of distress appear.

Signaling theory also offers a framework for understanding how the potential occurrence of financial distress is communicated to the market. High-quality financial statements send positive signals to investors, whereas negative signals embedded in the reported information may cause stakeholders to react skeptically or unfavorably (Stepani & Nugroho, 2023).

**Financial Distress**

Financial distress is understood as a deterioration in the financial condition of a bank that can have systemic effects—disruptions in a single bank may spread to other banks and shake the entire industry, which is why early symptoms must be detected as soon as possible (Anwar & Ali, 2018). More broadly, financial distress is a condition describing a firm's financial crisis that precedes bankruptcy. According to Ramadini (2023), financial distress is a process of declining financial conditions that occurs before bankruptcy or liquidation.

Bankruptcy itself is a state in which the company can no longer meet its obligations and consequently lacks the funds needed to continue its operations. Financial distress


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may begin when a firm generates insufficient profits and is unable to service its debts. Therefore, it is crucial to continuously monitor conditions that point toward financial distress so that timely actions can be taken to avoid and anticipate the path to bankruptcy.

Many factors can lead to financial distress, including macroeconomic conditions, industry trends, changes in consumer preferences, technological developments, and firm-specific financial factors such as excessive debt or unexpected increases in interest rates. In general terms, corporate financial difficulties are the result of errors, unpreparedness, and weaknesses within the company that are directly or indirectly related to management decisions.

**Financial Performance**

Financial performance is generally understood as the degree to which a company achieves its economic objectives, as reflected in its ability to generate profits, maintain liquidity, manage its capital structure, and utilize assets efficiently—commonly measured through ratios derived from financial statements. Within the reporting framework, this information must be relevant, reliable/faithfully represented, comparable, and timely in order to be useful for stakeholders' decision-making. Classic references emphasize that accounting numbers constitute an "economic language" interpreted by markets and creditors to assess an entity's performance and risk.

According to Kasmir (2019), financial performance is a description of the level of achievement and the financial condition of a company in a given period as reflected in its financial statements, which are evaluated using analytical tools to assess health, efficiency, effectiveness, ability to meet obligations, and business prospects. The assessment is conducted primarily through groups of ratios: liquidity (ability to meet short-term obligations), solvency/leverage (capital structure and long-term viability), activity/efficiency (speed of asset utilization), profitability (ability to generate earnings), and—where relevant—market ratios (valuation from the investor's perspective).

To make financial performance assessments more reliable, Kasmir emphasizes the importance of reading trends across periods, comparing results with similar firms or the industry, and benchmarking against predetermined standards.

**RESEARCH METHOD**

The method used in this study is a Systematic Literature Review (SLR). A Systematic Literature Review is a research methodology employed in this article to synthesize existing studies in a structured and transparent manner. The SLR method

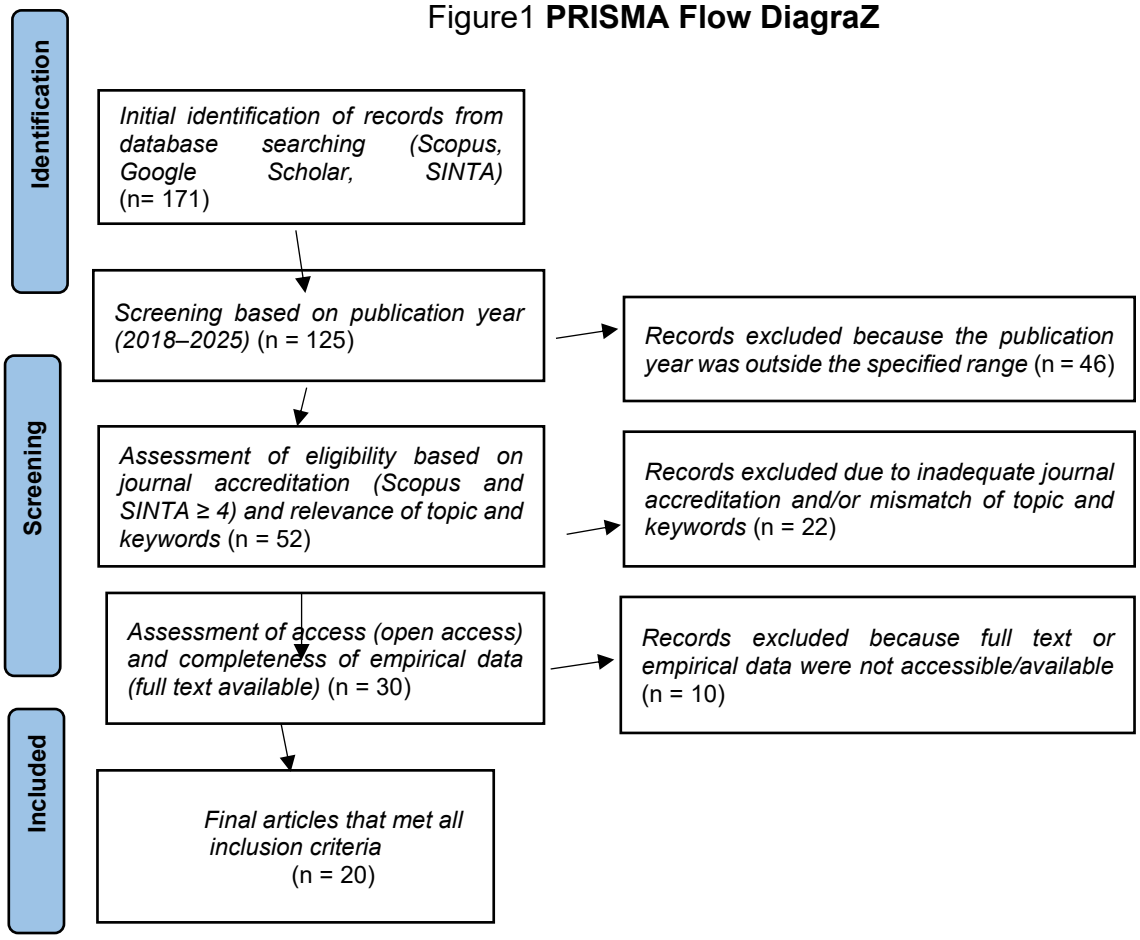

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includes activities such as collecting relevant literature, reading and note-taking, and processing research data with the aim of addressing a particular problem by analyzing previously conducted journal articles.

Articles were collected through manual searches using the Scopus and Sinta databases. The keywords used in the article search process included: “financial performance”, “financial distress”, and “systematic literature review”. The study employs articles written in English or Indonesian, published between 2018 and 2025, with a minimum accreditation of being indexed in Scopus or at least Sinta 4.

The article selection process follows the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), which consists of four main stages: identification, screening, eligibility, and inclusion.

Figure1 **PRISMA Flow DiagraZ**





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In total, 171 records were initially identified from Scopus, Google Scholar, and SINTA. After screening by publication year (2018–2025), 46 records were excluded, leaving 125 studies. A further eligibility check based on journal accreditation (Scopus or at least SINTA 4) and the relevance of topics and keywords resulted in 22 additional exclusions, so that 52 articles remained. Subsequently, access to full texts and the completeness of empirical data (open access, full-text available) were examined, leading to the exclusion of 10 records. Finally, 20 articles met all inclusion criteria and were retained in the systematic review

**RESULT**

The distribution of publications over the period 2018–2025 is as follows: in 2018 there was 1 publication related to systems or models for providing early warning of financial distress; in 2020 there were 3 articles; in 2021 there were 2 articles; in 2022 there were 2 articles; in 2023 there were 5 articles; in 2024 there were 3 articles; and in 2025 there were 4 articles.

The final sample after the selection process consisted of 20 articles. Of these, 13 articles were obtained from Scopus and 7 articles were published in journals accredited at least SINTA 4.

The most frequently used research method is a quantitative approach with secondary data sources, applied in 19 articles, while only 1 article uses a literature review or qualitative method. Quantitative methods dominate because most studies focus on financial performance data in the form of financial ratios extracted from companies' financial statements.

The research variables most commonly employed are Liquidity (Current Ratio), Profitability (ROA), Leverage (DAR), and Activity (TATO). Several studies also incorporate additional factors such as operating cash flow, sales growth, tax aggressiveness, gender diversity, and transparency and disclosure (T&D).

Table 1 presents the research objects examined in the sampled articles. There are 12 sectors that serve as research objects. The banking sector and the trade sector appear slightly more frequently than the others, with 3 articles each.


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**Table 1 Research Objects**

| NO | RESEARCH OBJECTS | TOTAL |
|---|---|---|
| 1 | Banking Sector | 3 |
| 2 | Companies in the Mining Sector | 2 |
| 3 | Aviation Industry | 1 |
| 4 | Agricultural Companies | 1 |
| 5 | Companies in the Health Care Sector | 1 |
| 6 | Public Sector Companies | 1 |
| 7 | Companies Listed on the Vietnam Stock Exchange | 1 |
| 8 | Non- Financial Sector Companies | 2 |
| 9 | Companies Listed on the China Stock Exchange | 1 |
| 10 | Retail Trade Sector Companies | 3 |
| 11 | Manufacturing Sector Companies | 2 |
| 12 | Food & Beverages Sector Companies | 2 |
| JUMLAH | | 20 |

## Article Summary

**Table 2. List of articles included in the systematic literature review**

| No | Penulis (Tahun) | Judul Penelitian | Hasil Penelitian | KET |
|---|---|---|---|---|
| 1 | (Anwar and Ali 2018) | ANNs-Based Early Warning System for Indonesian Islamic Banks | • ANN model can provide early warning signals up to two months before distress• ANN accuracy exceeds that of logit/parametric models during volatile periods• Includes a case-study implementation for Bank Syariah Mandiri | Scopus |
| 2 | (Santosa, Tambunan, and Kumullah 2020) | The role of moderating audit quality relationship between corporate characteristics and financial distress in the Indonesian mining sector | • Leverage and efficiency (activity) have a significant negative effect on financial distress<br>• Market-to-book (PBV) has a positive association with financial distress<br>• Higher audit quality reduces the probability of distress | Scopus |
| 3 | (Shome and Verma 2020) | Financial Distress in Indian Aviation Industry: Investigation Using | • Compares multiple bankruptcy prediction models for Indian airlines<br>• Several airlines show signs of distress before crisis events | Scopus |


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| No | Penulis (Tahun) | Judul Penelitian | Hasil Penelitian | KET |
|---|---|---|---|---|
| | | Bankruptcy Prediction Models | • Highlights the importance of using multiple models (Altman, Pilarski, Fuzzy Logic, Kroeze) | |
| 4 | (Valaskova et al. 2020) | Financial Compass for Slovak Enterprises: Modeling Economic Stability of Agricultural Entities | • Sector-specific (agricultural) bankruptcy model achieves the highest prediction accuracy<br>• Models developed within the same environment and sector outperform cross-country/cross-sector models<br>• ROC curves and confusion matrices show improved accuracy | Scopus |
| 5 | (Saeed and Sroufe 2021) | Performance, Risk, and Cost of Capital: Trends and Opportunities for Future CSR Research | • Most evidence supports the view that 'doing good is good for business'<br>• Identifies research gaps on whether CSR mitigates financial risk, affects the information content of prices, and impacts trade credit<br>• Synthesizes 20 years of CSR–finance literature | Scopus |
| 6 | (Nurhayati et al. 2022) | The Accuracy of Financial Distress Prediction During the COVID-19 Pandemic on Healthcare Sub-Sector Companies | • Compares the accuracy of Zmijewski and Grover models for healthcare firms on the IDX<br>• Shows that the COVID-19 crisis period affects the predictive accuracy of the models | Scopus |
| 7 | (Abbas and Frihatni 2023) | Gender diversity and firm performances suffering from financial distress: evidence from Indonesia | • Female representation averages 13% on boards of commissioners, 7% on boards of directors, and 5% on audit committees<br>• Greater gender diversity on the board of commissioners reduces the likelihood of financial distress<br>• Logistic regression results are statistically robust | Scopus |


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| No | Penulis (Tahun) | Judul Penelitian | Hasil Penelitian | KET |
|---|---|---|---|---|
| 8 | (Luu Thu 2023) | Impact of earning management and business strategy on financial distress risk of Vietnamese companies | • Higher discretionary accruals increase the risk of financial distress<br>• Real earnings management is associated with lower distress risk<br>• Differentiation and low-cost strategies improve performance and reduce distress<br>• Size, leverage, losses, and liquidity also influence distress risk<br>• Results are robust using both O-score and Zmijewski models | Scopus |
| 9 | (Kanoujiya et al. 2023) | Transparency and Disclosure and Financial Distress of Non-Financial Firms in India under Competition: Investors' Perspective | • Transparency and disclosure exhibit a non-linear effect on financial distress (initially reducing distress, but beyond a threshold increasing it)<br>• Under high competition (Lerner index), the effect of T&D becomes insignificant<br>• Higher Altman Z-scores indicate lower distress; BOS and AC measures capture investors' perspective | Scopus |
| 10 | (Citterio 2024) | Bank failure prediction models: Review and outlook | • Synthesizes statistical and machine-learning/ensemble models for bank failure prediction<br>• Highlights the trade-off between Type I and Type II errors and issues of explainability<br>• Presents a catalog of variables (CAMELS, market-based, governance) used across studies | Scopus |
| 11 | (Khan et al. 2024) | Is the Nexus between Gender Diversity and Firm Financial Distress Moderated by CEO Duality? | • Greater female director representation reduces financial distress among Malaysian issuers<br>• CEO duality moderates the relationship between gender diversity and financial distress<br>• Dynamic panel estimation is appropriate due to endogeneity in financial variables | Scopus |


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| No | Penulis (Tahun) | Judul Penelitian | Hasil Penelitian | KET |
|---|---|---|---|---|
| 12 | (Yuan, Abedin, and Hajek 2025) | An Ensemble Model Minimising Misjudgment Cost: Empirical Evidence From Chinese Listed Companies | • Cost-sensitive ensemble model minimizes misclassification (Type I/II) costs<br>• Achieves high accuracy across industries and firm sizes<br>• Reveals regional differences in credit quality (east > central > west) | Scopus |
| 13 | (Metwally et al. 2025) | Financial and Economic Determinants of Banks Financial Distress in MENA Region | • Higher economic growth significantly reduces financial distress<br>• ROA/ROE and stock-market profitability are significant determinants, while inflation is not robust (insignificant under GMM)<br>• Results vary across MENA countries, highlighting the need to distinguish economic from financial factors | Scopus |
| 14 | (Sasongko, Fajar Ilmiyono, and Tiaranti 2021) | Financial Ratios and Financial Distress in Retail Trade Sector Companies | • Current Ratio has no significant effect on financial distress<br>• ROA, DAR, and TATO have significant effects on financial distress | SINTA 3 |
| 15 | (Hermuningsih et al. 2022) | Fundamental aspects of leverage, profitability and financial distress as mediating variables that influence firm value | • Leverage positively and significantly affects financial distress<br>• Profitability negatively and significantly affects financial distress<br>• Financial distress negatively and significantly affects firm value<br>• Leverage negatively and significantly affects firm value<br>• Profitability positively and significantly affects firm value<br>• Firm size positively and significantly affects firm value (control variable)<br>• Financial distress mediates the effects of leverage and profitability on firm value | SINTA 2 |


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| No | Penulis (Tahun) | Judul Penelitian | Hasil Penelitian | KET |
|---|---|---|---|---|
| 16 | (Ramadini 2023) | Determinan Financial Distress pada Perusahaan Sektor Food and Beverage di BEI | • Profitability has a negative effect on financial distress<br>• Liquidity has a negative effect on financial distress<br>• Sales growth and leverage have no significant effect on financial distress | SINTA 3 |
| 17 | (Arifuddin et al. 2023) | How Liquidity, Profitability, and Leverage Ratios Influence Financial Distress: A Study on Indonesian Mining Firms | • Liquidity, profitability, and leverage jointly influence financial distress, with directions consistent with the reported model coefficients | SINTA 2 |
| 18 | (Putri et al. 2024) | The Effect of Profitability, Leverage, and Liquidity on Financial Distress (Subsektor Perdagangan Ritel BEI, Masa Pandemi) | • Profitability has a significant negative effect on financial distress<br>• Liquidity has a significant negative effect on financial distress<br>• Leverage has a significant positive effect on financial distress | SINTA 4 |
| 19 | (Shohwatul, Stie, and Surabaya 2025) | The Effect of Liquidity and Operating Cash Flow on Financial Distress with Sales Growth as a Moderating Variable | • Liquidity has a significant positive effect on financial distress<br>• Operating cash flow has a significant positive effect on financial distress<br>• Sales growth does not moderate the effects of liquidity or operating cash flow on financial distress | SINTA 4 |
| 20 | (Hamdani et al. 2025) | Analysis of Factor Affecting Financial Distress Moderated by Institutional Ownership | • Sales growth and operating capacity reduce financial distress (negative effects)<br>• Tax aggressiveness has no effect on financial distress<br>• Institutional ownership moderates the relationships between sales growth and operating capacity and financial distress | SINTA 2 |

Based on the findings from the 20 articles reviewed, all studies focus on financial distress and bankruptcy prediction, both in the financial sector (Indonesian Islamic banks,


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banks in the MENA region, financial firms in India) and in non-financial sectors (airlines, agriculture, retail, mining, food & beverage, and manufacturing).

**Trends in Prediction Models and Early-Warning Systems**

In the area of prediction models, Anwar and Ali (2018) show that Artificial Neural Networks (ANNs) are able to generate early warning signals of financial distress for Islamic banks around two months before the event, with higher accuracy than parametric logit models.

A multi-model approach is then emphasized by Shome and Verma (2020), who compare several bankruptcy models (Altman, P-Score, fuzzy logic, Kroeze) for Indian airlines and find that some airlines had already been in distress long before they collapsed, highlighting the importance of using more than one model.

In a sector-specific context, Valaskova et al. (2020) develop a "financial compass" for agricultural companies in Slovakia and find that models calibrated specifically for a given sector/location achieve higher distress prediction accuracy than cross-country models.

Under crisis conditions, Nurhayati et al. (2022) compare several models (such as Zmijewski and Grover) for healthcare sub-sector firms listed on the IDX during the COVID-19 pandemic and show that the level of crisis affects the relative accuracy of each model, with one model performing best during that period.

For the banking sector, Citterio (2024) reviews hundreds of studies on bank failure models and confirms a shift from traditional statistical models toward machine learning and ensemble methods, while also underlining the trade-off between Type I and Type II errors and the issue of model explainability.

This direction is reinforced by Zhang et al. (2025), who develop a cost-sensitive ensemble model for Chinese listed firms and successfully minimize misjudgment costs while maintaining high accuracy across various industries.

Taken together, the findings in this cluster show a trend away from relying on a single, simple score model toward multi-model combinations, sector-specific specifications, and ML/ensemble techniques that focus on the cost of misclassification, rather than only overall accuracy.

**Financial Ratios, Firm Characteristics, and Macroeconomic Factors**

Many articles test financial ratios and firm characteristics as determinants of financial distress. Santosa et al. (2020) find that leverage and activity efficiency increase


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the likelihood of distress, while market value (PBV) and audit quality reduce distress in Indonesian mining firms; GDP has a negative effect on distress, whereas inflation is not significant.

These results are consistent with Metwally et al. (2025), who analyze MENA-region banks and find that economic growth and profitability (ROA/ROE) reduce financial distress, while the effect of inflation is not consistent across models.In the retail sector, Sasongko et al. (2021) show that ROA, leverage (DAR), and activity (TATO) significantly affect distress, whereas the current ratio does not.From a firm-value perspective, Hermuningsih et al. (2022) find that leverage increases financial distress and reduces firm value, while profitability decreases distress and increases firm value; financial distress itself mediates the relationships between leverage/profitability and firm value. A series of sector-specific studies reinforce this pattern. Ramadini and Rusliyawati (2023), examining food and beverage firms, show that profitability and liquidity have a negative effect on distress, while sales growth and leverage have no significant effect.

Arifuddin et al. (2023) study mining firms and find that liquidity, profitability, and leverage jointly have a significant effect on distress, although the direction of each coefficient must be interpreted based on the regression model they report.In the retail trade sub-sector during the pandemic period, Putri and Hendrani (2024) find a consistent pattern: profitability and liquidity reduce distress, while leverage increases distress.Somewhat different findings appear in Julianti and Hartikayanti (2025), who examine liquidity and operating cash flow; both variables show a positive effect on distress, while sales growth does not moderate these relationships.

By contrast, Hamdani et al. (2025) find that sales growth and operating capacity reduce distress, whereas tax aggressiveness has no effect; institutional ownership moderates the relationships between sales growth and operating capacity and distress.

Overall, the trend in this cluster indicates a fairly consistent pattern in which high profitability almost always reduces distress, leverage tends to increase distress, while the effects of liquidity and sales growth are more varied across sectors and time periods.

**Corporate Governance, Gender Diversity, and Transparency**

Dimensions of good corporate governance and gender diversity also receive strong attention. Abbas and Frihatni (2023) show that in Indonesia, the proportion of women on the board of commissioners is negatively associated with financial distress, while the proportion of women on boards of directors and audit committees is relatively smaller but still points in the direction of performance improvement. Khan et al. (2024) report similar


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findings for Malaysian issuers: greater female representation on the board is associated with a lower probability of distress, but this relationship is influenced by CEO duality, where the CEO simultaneously serving as board chair can weaken the positive effect of gender diversity.

In terms of disclosure, Kanoujiya et al. (2023) examine transparency and disclosure (T&D) in Indian non-financial firms and find a U-shaped relationship with distress: at low–medium levels, increased T&D reduces distress, but beyond a certain threshold, additional disclosure is correlated with a higher probability of distress—possibly reflecting pressure or risk that firms seek to manage through disclosure. Under high competition, the effect of T&D becomes insignificant.

At a broader level, Saeed and Sroufe (2021) conduct a 20-year review of CSR, performance, risk, and cost of capital research and conclude that empirical evidence tends to support the view that “doing good is good for business”: strong CSR practices are generally associated with better performance and lower risk, although there remains ample room for research on how CSR specifically mitigates financial distress and affects the cost of capital in different contexts.

Overall, this cluster shows a trend whereby sound governance mechanisms, gender diversity, and strong CSR practices tend to reduce the risk of financial distress, although these relationships can be moderated by power structures (such as CEO duality) and the intensity of competition.

**Business Strategy, Earnings Management, and Regional Contexts**

Luu Thu (2023) highlights the role of earnings management and business strategy in Vietnam. The results show that higher discretionary accruals increase the risk of distress, while certain forms of real earnings management are associated with a reduction in distress, and appropriately implemented differentiation and low-cost strategies can improve performance and mitigate bankruptcy risk.

In a macro-financial context, Metwally et al. (2025) emphasize that the effects of economic factors (GDP growth, stock market conditions) and bank-specific factors (profitability, asset quality) on distress differ across MENA countries, so cross-country generalizations must be made with caution.

In Indonesia, Nurhayati et al. (2022) show that the COVID-19 crisis not only affects the level of distress but also changes the relative performance of prediction models; this is in line with evidence from the Indian airline sector by Shome and Verma (2020), who find that sector-specific shocks can keep some airlines in the distress zone for several years.


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Taken together, these findings illustrate a trend that financial distress is highly sensitive to operational strategies, financial reporting practices, and macro shocks/crises. Consequently, recent research increasingly combines financial variables with governance mechanisms and external environmental factors in modeling and predicting financial distress.

## CONCLUSION

In general, financial performance is closely related to financial distress: profitability and liquidity tend to reduce distress, while leverage tends to increase it—although the findings are heterogeneous across sectors and periods. In the retail sector, the current ratio (CR) is not proven to have an effect; in the food and beverage subsector, profitability and liquidity reduce distress, while sales growth and leverage are not significant; in the retail sector during the pandemic, profitability and liquidity reduce distress and leverage increases it; whereas in the mining sector, all three variables are significant.

Additional factors and mechanisms also consistently appear: sales growth and operating capacity help to reduce distress, while tax aggressiveness is not found to have a significant effect; institutional ownership plays a moderating role; and economic growth (GDP) and audit quality reduce the likelihood of distress (whereas the effect of inflation is inconsistent).

Overall, the twenty articles reviewed reveal several common threads regarding financial distress. From a methodological perspective, there is a clear shift from traditional bankruptcy models toward more sophisticated and context-specific approaches. Researchers no longer rely solely on a single, simple score, but instead develop multi-score models, sector- and country-specific models, and apply machine learning and ensemble techniques that focus not only on accuracy, but also on the cost of misclassification errors. This trend indicates that financial distress is increasingly viewed as a complex risk prediction problem that requires more adaptive analytical tools.

From the standpoint of empirical findings, profitability and operating efficiency generally emerge as the main “protective factors” against financial distress, whereas leverage tends to increase risk. However, the influence of liquidity and sales growth is not always uniform and appears to be highly dependent on industry context, observation period, and the proxies used. Beyond financial ratios, many studies also highlight the importance of non-financial factors such as corporate governance, gender diversity on boards, disclosure quality, CSR, institutional ownership structure, and managerial behavior. These factors can strengthen or weaken the impact of financial ratios on distress.


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In addition, cross-country and cross-sector differences, as well as the presence of crises (such as the pandemic), make the relationships between variables not fully homogeneous. As a result, recent research tends to incorporate moderating variables and to take into account the specific characteristics of the business environment when analyzing financial distress.

## SUGGESTIONS

### Suggestions for Future Research

**a. Broaden variables and models**

- Include not only financial ratios, but also governance variables (audit committee, gender diversity, institutional ownership), CSR, and macroeconomic factors.
- Develop models that test the mediating and moderating roles of financial distress in relation to firm value.

**b. Account for sectoral differences and crisis periods**

- Conduct cross-sector studies (banking, mining, retail, manufacturing, etc.) or cross-period comparisons (normal vs. crisis/pandemic periods).
- Focus on explaining why the effects of liquidity and sales growth remain inconsistent across studies.

**c. Develop more advanced analytical methods**

- Make use of machine learning, ensemble methods, or dynamic panel techniques for predicting distress.
- At the same time, ensure that the models remain explainable and usable for regulators and practitioners.

**d. Vary the measures of financial distress**

- Do not rely solely on Z-Score or Zmijewski.
- Consider alternative indicators such as probability of default, cash-flow difficulties, or debt restructuring data.

**e. Conduct more specific SLR/bibliometric studies**

- For example, SLRs focused specifically on Indonesia, on a single sector, or on crisis periods.
- The aim is to identify sharper research gaps, such as the CSR–financial distress relationship or distress among SMEs.


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**Practical Implications**

**a. For regulators/capital market authorities**

- Develop early-warning systems based on a combination of financial ratios, governance indicators, and non-financial information.
- Encourage improvements in audit quality, transparency, and CSR as integral parts of bankruptcy risk management.

**b. For corporate management**

- Manage leverage prudently and maintain profitability and operating efficiency, as these are strongly linked to distress risk.
- Implement routine monitoring of distress indicators (financial ratios, governance indicators, earnings management, disclosure quality).
- View good governance, CSR, and board diversity as long-term risk management strategies rather than merely formal compliance.

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