

DETERMINANTS OF CORPORATE FINANCIAL DISTRESS PREDICTION – A SYSTEMATIC LITERATURE REVIEW

Ardy Primawan

Faculty of Economics and Business, Universitas Padjajaran, Indonesia

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Correspondence:

Ardy Primawan

ardy21001@mail.unpad.ac.id

ABSTRACT

The purpose of this study is to conduct a systematic literature review of the determinants of corporate financial distress prediction, based on scientific papers in related fields, which have been published. This paper tries to provide a thorough review of scientific papers on the topic of predicting the company's financial difficulties, researching, and showing the relationship among authors of different scientific papers and also showing the main determinants used and researched by the authors of these scientific papers in the last 10 years. Systematic literature review (SLR) is carried out using Garuda (Garba Rujukan Digital) as database to obtain scientific papers from a period of 10 years, namely 2012-2022, with the topic of predicting corporate financial distress from listed companies in Indonesia Stock Exchange (IDX). The first finding in this paper is that the prediction of corporate financial distress is a topic that is increasingly attracting the attention of researchers, as evidenced by the increasing number of scientific papers in this topic from year to year. Secondly, that financial ratios are the most influential determinants in the research carried out by authors of scientific papers, in different predictive models they used.

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INTRODUCTION

A company is founded with the aim of making profit and surviving, even growing bigger and bigger in the long run. But in reality, this goal may not be achieved, even companies which have been operating for a certain period of time are forced to disband or liquidate due to financial distress, which then if not managed properly, will lead to bankruptcy. According to Harahap (2017), Financial distress is a level of depreciation of the financial situation experienced by a company, which occurred before the collapse or dissolution. Research and analysis of the symptoms of financial difficulties many researchers have tried, with various predictive models emerging as a result. The application of various models and the development of these models are expected to be a starting point for rescue, recovery and trigger a turn-around corporate action, so that the company can avoid conditions that lead to the bankruptcy of a company (Putri, 2019). A company is categorized as in financially distress if the industry is unable to pay off its obligations at maturity even though its total assets exceed its liabilities (Handojo, 2017).

Basically, corporate financial distress is not the same as bankruptcy. In Indonesia, bankruptcy is regulated in the Law No.1 of 1998, which states that a debtor who has two or more creditors and is unable to pay at least one debt which due and cannot be collected is declared bankrupt by a judgment of the competent court, either on his own application or at the request of one or more of his creditors.. This application may also be filed by the prosecutor's office in the public interest. Companies that experience financial distress also face the risk of being delisted from the Indonesia Stock Exchange. This step is a mandatory step that must be taken by the IDX authorities to protect potential losses, both on the side of investors and the company itself. The reference used by the IDX in delisting company shares is IDX Regulation Rule Number I-I concerning Delisting and Relisting of Shares on the Exchange Provision III.3.I.I. The regulation states that the IDX delists the shares of a registered company if the registered industry encounters at least one situation or incident, which has a negative impact on business continuity of a listed company as a public company.

In Indonesia, among academic researchers there have been many studies conducted in points of financial distress forecast. However, research in the form of Systematic Literature Review (SLR) has not been widely carried out. This fact can be traced further in the Google Scholar journal database no research has been found using the SLR method on the topic prediction of financial distress, especially for listed companies in the Indonesia Stock Exchange. Therefore, this study takes the title Determinants of Corporate Financial Distress Prediction– A Systematic Literature Review. This research is limited by the factors that influence the prediction of financial distress by conducting a systematic literature review on journal articles published a maximum of 10 years back, namely from 2012 to 2022.

LITERATURE REVIEW

Systematic Literature Review (SLR)

SLR is a method of systematic research based on the results of previous research where evidence is carried out through a synthesis of scientific studies on a particular topic or research question that has been formulated. This type of research includes a tertiary literature review with systematically documented steps (Kitchenham et al., 2009). The objectives of SLR research include identifying, reviewing, evaluating, and interpreting all existing research with interesting topic areas, with relevant research questions (Kitchenham & Charters, 2007). In conducting a literature review, the SLR method is considered as one of the most objective and most systematic methods.

Financial Distress

Financial distress is a situation where a company faces problems in fulfilling its obligations. Signs of financial distress or financial distress can be seen from the financial performance of a company. Platt and Platt (2002) describing financial distress is a stage of depreciation of the financial situation that occurred before the collapse or dissolution occurred. These conditions are usually characterized by delays in delivery, decreased product quality, delays in payment of bills to creditors, which, if detected earlier, the company can take steps to avoid bankruptcy. There are various ways that have been developed to account for financial distress that occur in the industry. One of them is the use of comparative analysis of financial data presented in industry financial information. The research conducted by Altman (1968) is the first research that examines the use of comparative financial analysis as a tool for predicting industry losses. Altman's form is known as the Z-score, which is a number determined from a standard count multiplied by financial ratios that indicate the probability of an industry's collapse. (Mas'ud and Srengga, 2012). Apart from financial ratios, the prediction of a company's financial distress can be measured from its corporate governance. This is because corporate governance, , contains arrangements regarding the board of commissioners, directors and company management, which helps to ensure the harmony in its management (Hanafi & Breliastiti, 2016). Thus, it is hoped that there will be rules for managing the company able to reduce agency problems which have an impact on reducing level of data asymmetry. Reducing the level of data asymmetry can reduce the risk of financial distress in companies (Ariesta & Chariri, 2013).

RESEARCH METHODS

This Systematic Literature Review (SLR) was compiled from the results of selecting existing literature in the Garuda journal database (Garba Rujukan Digital) created by the Ministry of Education and Culture of the Republic of Indonesia. The Garuda database can be accessed on the website <https://garuda.kemdikbud.go.id/>). The search keywords used were "Kesulitan Keuangan" and "Financial Distress" according to the Preferred Reporting Items for Systematic Review (PRISMA) method. The step-by-step PRISMA method can be seen in Figure 1. The SLR stages in this study follow the research stages conducted by Alvianto et al. (2022) consisting of

problem identification, literature search, selection of literature search results and analysis of literature search results.

1. Problem Identification

In the problem identification stage, researcher determines the objectives and results to be achieved in the study using the SLR method. The purpose of this study is to determine the determinants (determining factors) of the prediction of financial distress in listed companies on the Indonesia Stock Exchange. To achieve the research objectives, researcher formulated 3 (three) research questions (RQ) as follows:

RQ 1 : How is the development of trends and mapping of empirical research publications on the topic of predicting financial distress been carried out in Indonesia from 2012 to 2022?

RQ 2 : What are the variables used in empirical research on predicting financial distress?

RQ 3 : What are the determinants that are proven to influence the prediction of financial distress?

2. Papers Searching

In accordance with the research focus, in which the SLR is focused on the prediction of financial distress, a literature search was conducted on indexed journals in the Garuda portal database on the website "<https://garuda.kemdikbud.go.id/>". Literature search using the keywords "kesulitan keuangan" and "financial distress". The results of a literature search with these keywords obtained 1,965 papers.

3. Papers Screening

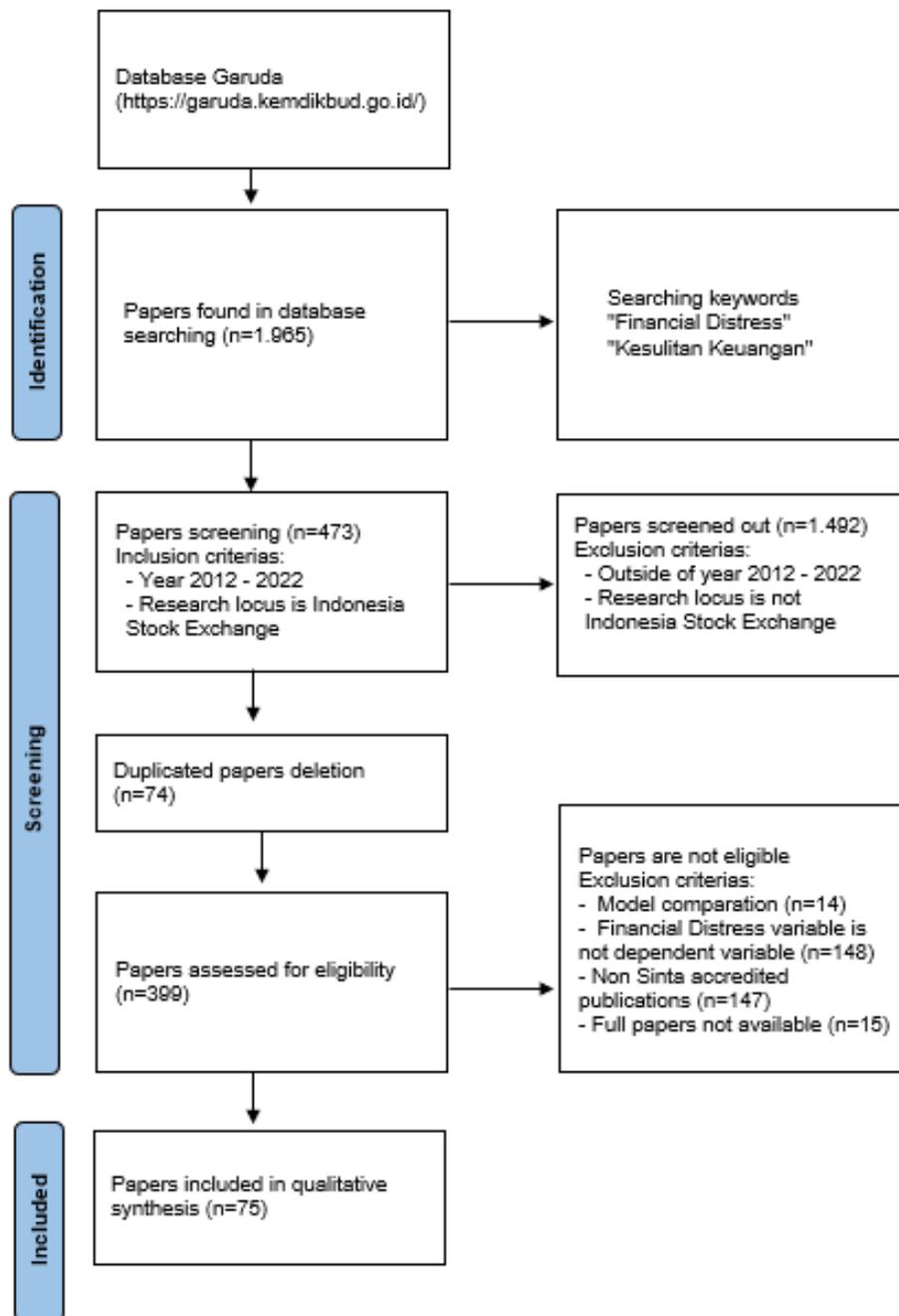
At this step, the results of the papers search are sorted based on predetermined initial screening criterias, namely the period of publication of journals for the last 10 years (2012 to 2022) and the focus of research on listed companies on the Indonesia Stock Exchange. To sort the papers out with a research focus on the Indonesian Stock Exchange, due to limited keywords that can be used on the Garuda database, researcher narrowed down the keywords to "Bursa Efek Indonesia" and "2012 to 2022". From the selection results, the results of papers search with the two criteria obtained 399 papers (total search results of 473 papers with 74 duplicated papers). From the 399 papers obtained, followed by an assessment of the feasibility of the papers with the following criterias:

a. The research is not a comparison between financial distress prediction models.

b. The financial difficulties prediction used as a dependent variable

c. Article publications in Sinta accredited scientific journals and full articles can be downloaded.

Figure 1
Step-by-step based on PRISMA Method



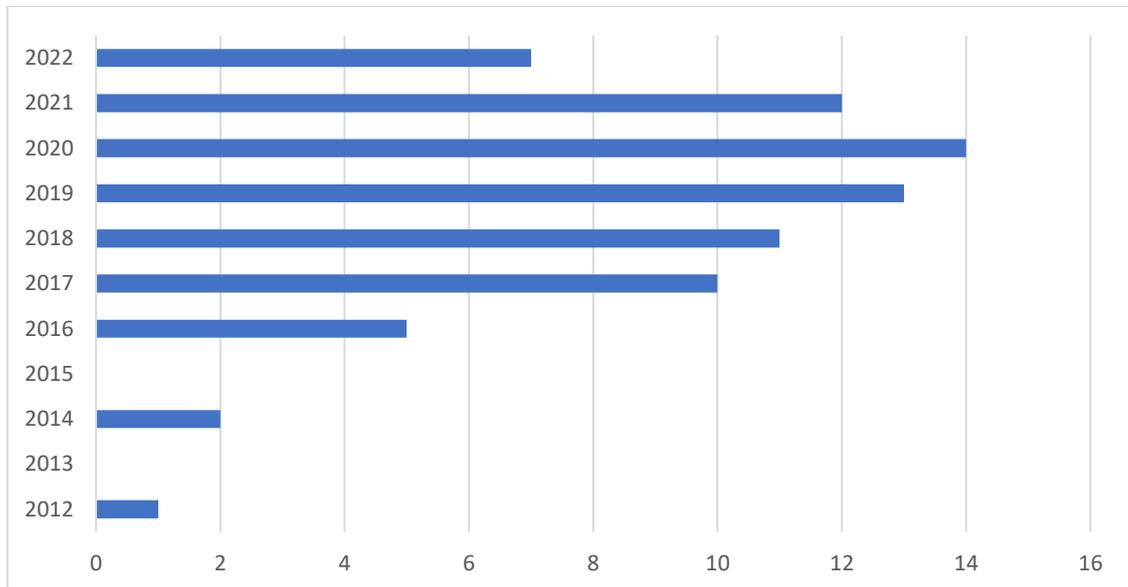
From this feasibility assessment, 75 papers were obtained that met the criterias and were used in the analysis of the results of the literature search.

RESULT AND DISCUSSION

After tabulating the 75 selected papers, several facts from research on the topic of predicting financial distress can be mapped as presented in Figure 2

Figure 2

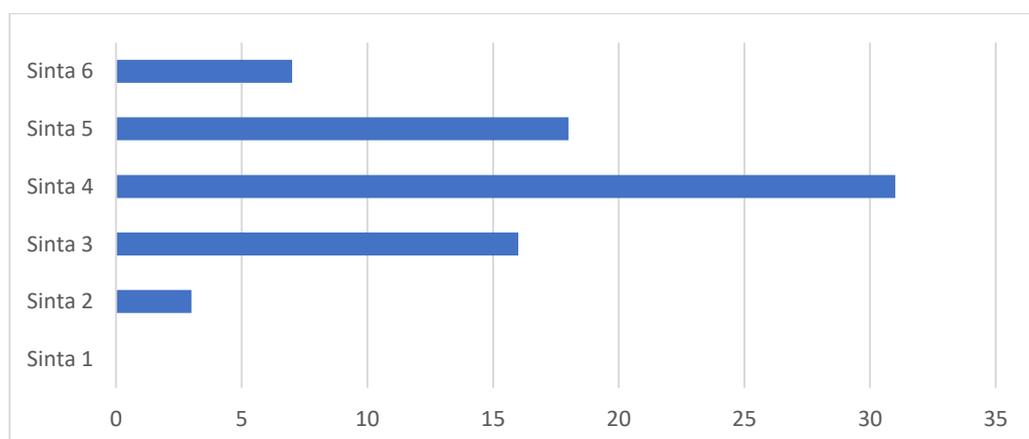
Years of Research Publications



Year of 2020 was the year when the most published research with the topic of predicting financial difficulties in listed companies on the Indonesia Stock Exchange, there were as many as 14 papers published in scientific journals. Year of 2020 saw the peak of the increasing number of publications, which from 2016 to 2019 had shown an increase in research publications, and then started to decrease in 2021 to 2022 with 12 articles and 7 articles respectively.

From the perspective of Sinta accredited journals that published research papers on the topic of predicting financial distress, an overview can be seen in Figure 3:

Figure 3
Sinta Accredited Journals

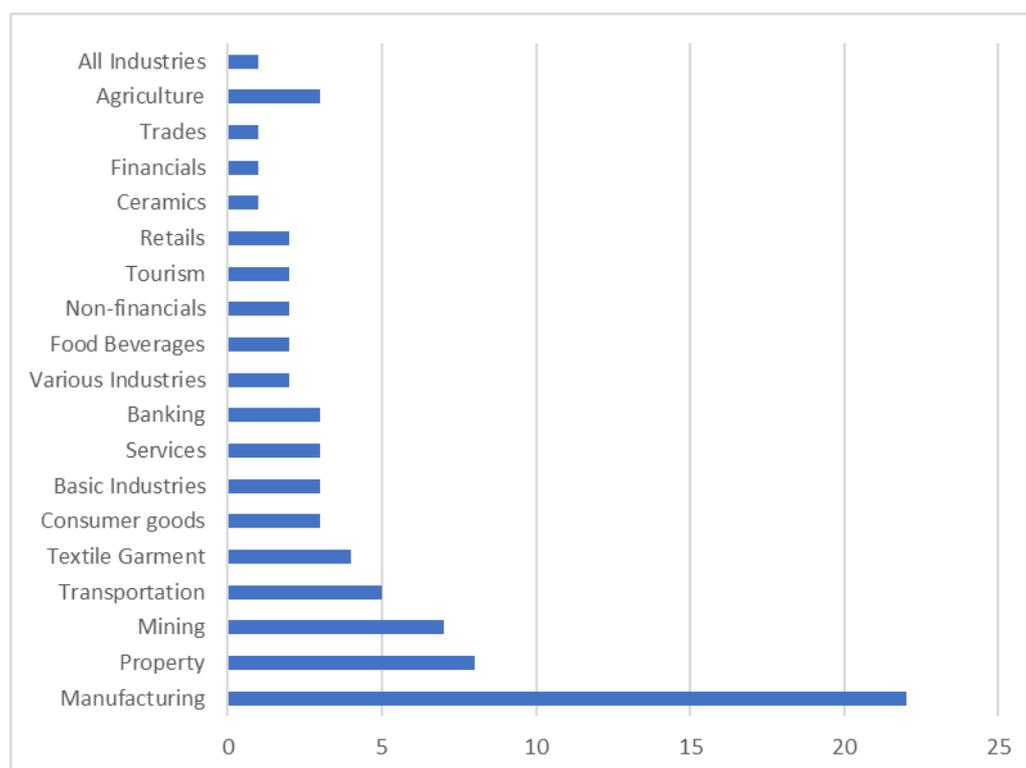


There are 31 papers published in Sinta 4 accredited scientific journals, this is the highest number for research on the topic of predicting financial distress in listed companies on the Indonesia Stock Exchange, while the least is in Sinta 2 accredited scientific journals, namely only 3 papers.

Publication in Sinta accredited journals gives important scientific weight because research papers which have been successfully published in these journals have gone through an accredited standard peer review process. It should be noted that in the process of screening papers, 127 published papers have been published in journals that are not or have not been accredited by Sinta, meaning that researcher has selected articles with a proper scientific weight for further analysis.

In terms of the business sector of the listed companies studied, companies with a manufacturing background are the most researched sample. However, it should be noted that manufacturing is a business sector that also underlies other business sectors such as basic industry, textile garment. Likewise, the non-financial business sector, in this case surely it also includes the manufacturing business sector. In fact, there was one research that chose a sample of the entire business sector as research material. Overall, the profile of the business sector presented is based on the samples written in these articles and is quite comprehensive in the sense that it can represent all business sectors on the Indonesia Stock Exchange. Of course, specifically, there are still business sectors that have not been represented, such as the technology sector and listed investment products. Figure 4 provides an overview of the listed companies' business sector which is the research sample.

Figure 4
Listed Companies Business Sectors

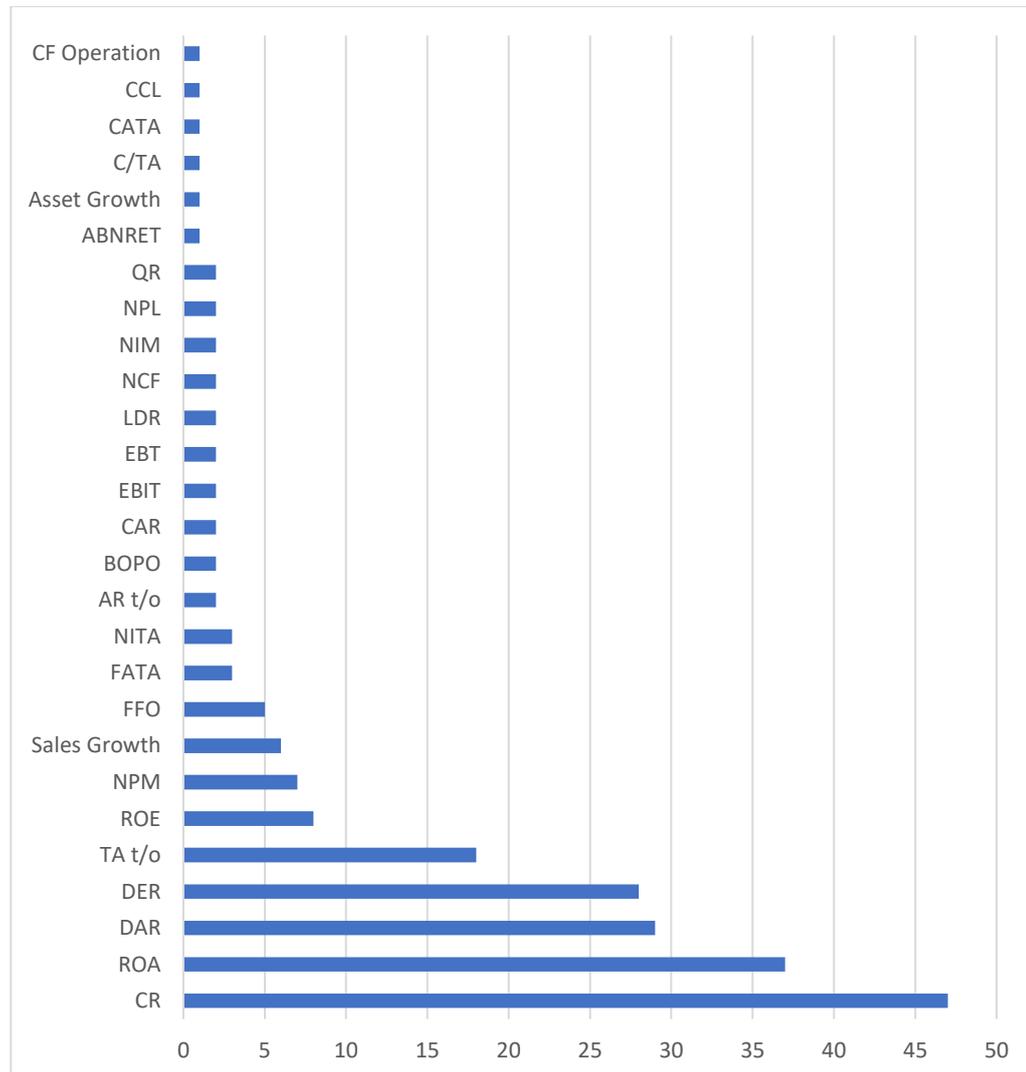


Determinant of Financial Distress Prediction

There are 2 major parts of the factors that influence the topic of financial distress prediction, namely financial ratios, and non-financial ratios. Financial ratio factors are based on information obtained from the listed companies' financial reports, while non-financial ratio factors obtain information from a wider range of sources, ranging from aspects of corporate governance to macroeconomic aspects.

From the articles analysed, 62 financial ratio factors were used, but only 21 financial ratios were used in more than 1 research. These financial ratio factors are depicted in Figure 5.

Figure 5
Financial Ratios Factors Used in More than 1 Paper



The most widely the financial comparison used in the research is a liquidity comparison, leverage, profitability, and activity, with the formula Current Ratio (CR) for liquidity ratios, Debt to Asset Ratio (DAR) and Debt to Equity Ratio (DER) for leverage ratios, then Return on Equity (ROE) and Return on Assets (ROA) for profitability ratios, as well as Total Asset Turn Over (TA t/o) for activity ratios. These financial ratios are used as independent variables in research hypotheses which are then tested with various statistical data analysis techniques.

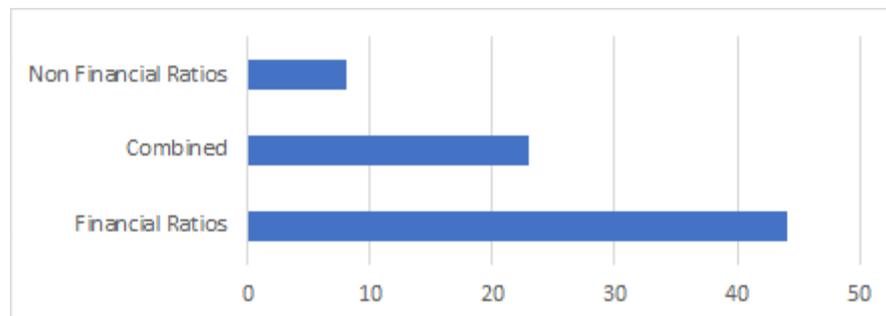
The implication of the popularity of the financial ratios mentioned above is that there is a degree of uniformity in a certain level of published studies, and besides that, there is also an impression of a lack of research exploration on the determinants of predicting financial distress.

However, it should be appreciated that there are several other other financial comparisons used in this research, for example for profitability comparisons namely Net Profit Margin, Earning Before Income & Taxes, Net Profit becomes Equity, Net Profit becomes Sales, even using equity, both from retained elements Earnings are compared to the entire legacy to prove the company's ability to produce profits, as a result of retained earnings after deducting expenses, as well as stockholders' equity to show the ability of the company to meet its obligations both short term and long term.

In addition to the financial ratio factors, as stated above, the research also using the non-financial ratio factors as independent variables that effect financial distress. From the articles

analysed, there are 31 non-financial ratio factors used, where 12 factors are used in more than 1 study. The twelve non-financial ratio factors are depicted in Figure 6.

Figure 6
Non-Financial Ratios Factors Used in More Than 1 Paper



Discussion of Data Analysis Results

From the results of the analysis on the determinants of financial distress predictions, there are 6 main factors that prove to be the most influential (with the number of research findings being more than 10 studies), from financial ratio factors, there are profitability ratio, represented by ROA, the liquidity ratio, represented by CR, the leverage ratio, represented by DER and DAR, and the activity ratio which is represented by TA t/o. As for the non-financial ratio factors, there are company size, managerial ownership, and institutional ownership.

First, the liquidity ratio, namely the Current Ratio (CR), is the ratio that has the most negative effect on the prediction of financial difficulties, where the better the CR value, the less likely financial distress will occur. The CR formula is as follows: $CR = \text{current assets} / \text{current liabilities}$. Gitman and Zutter (2006) describes the liquidity ratio as a tool used to measure a company's ability to fulfill its maturing short-term roles, with reference to the legacy of a young company relative to its current roles. Therefore, the ratio of liquidity continues to be large so that the possibility of companies facing financial distress continues to be less likely. but a liquidity ratio that is too high will indicate that the company's working capital is unproductive, resulting in the emergence of costs that will reduce the company's profits and will have a positive effect on financial difficulties. Munthe (2008) and Suntratrak (2009) in both research found CR can significantly predict financial distress.

Second, the profitability ratio, namely Return on Assets (ROA), is a ratio that has a negative effect on the prediction of financial difficulties, which means that the higher the ROA value, the lower the possibility of financial difficulties occurring. This is in line with the theory that comparison of profitability is a comparison that measures the effectiveness of management in a totality manner, which is indicated by the level of profit obtained in relation to marketing and capital. Continue to be a large comparison of profitability so that the company's ability to get good profits continues to be good (Fahmi, 2013). ROA is the most important ratio among existing profitability ratios (Setiawan et al, 2017) because a high ROA value indicates a company's efficiency and effectiveness in managing assets (Fitriyah & Hariyati, 2013).

Third, the financial leverage ratio, namely the Debt-to-Asset Ratio (DAR) and the Debt-to-Equity Ratio (DER). DAR is also similar to the ratio of Total Assets to Total Liabilities (TATL). The financial leverage comparisons have a positive effect on estimates of financial distress. Kaplan (1993) also argues that very large loans will harm the company into a state of financial difficulty. Research from Almilia and Kristijadi (2003), Suntraru (2009), and Salehi and Abendini (2009) found that leverage ratios can significantly predict financial difficulties. Another study from Utami (2015), which aims to prove the benefits of financial statements in predicting financial difficulties,

shows that the financial leverage ratio can be used to predict a company's financial difficulties, because the greater the financial leverage ratio, the more likely the company will experience financial distress.

Fourth, company size is a non-financial ratio factor that has an affect estimates of financial distress, company scale describes how much the entire legacy is owned by the company and added value for interested parties such as investors and creditors, because investors and creditors will not hesitate to invest and provide credit to the company so that the company will avoid financial difficulties. Companies that have large total assets will easily diversify and are less likely to experience bankruptcy, Rajan and Zingales (1995) in (Supriyanto and Falikhatun, 2008). The greater the total assets owned by the company, it is hoped that the company will be able to pay off future obligations, so that the company can avoid financial problems, Storey (1994) in (Fachrudin, 2011). Company size can be measured by Ln (Total Assets).

Fifth, the portion of managerial ownership and institutional ownership, both of which are non-financial ratio factors that are proven to influence the prediction of financial distress. Ownership of institutional shareholders is the sum of the percentage of voting rights held by institutions (Beiner et al, 2003). Institutional ownership continues to grow so that it continues to be efficient in the use of industrial heritage and is expected to function as a deterrent to inefficiencies attempted by management. (Faisal, 2005). The measurement is by using the ratio of the number of shares owned by the institution to the total number of shares outstanding. Meanwhile, managerial ownership is the number of share ownership by the management of the entire share capital of the company being managed (Gideon, 2005). Jensen and Meckling (1976) say that one way to eliminate this conflict of interest is to provide managers with incentives to take actions that are in accordance with the interests of the owners, for example with managerial ownership. Measurement is carried out using the ratio of the number of managerial ownership shares to the total number of outstanding shares.

Sixth, the activity ratio using the Total Asset Turn Over (TA t/o) formula proves the analogy between marketing and the overall legacy of a company where this ratio describes the rate of turnover of total assets in a certain period. The formula for Total Asset Turnover is total sales divided with all the assets owned by the company. If the company has difficulty increasing sales, then the company has the potential to experience a decrease in company profits, and ultimately the company will experience financial difficulties. Likewise, according to Kasmir (2012: 185) which states that total asset turnover is a comparison of legacy management that measures the rotation of all company assets and is calculated by separating marketing from total assets and measuring the amount of marketing received from each rupiah of assets.. If the company does not generate sufficient business volume for the investment size of its total assets, then sales must be increased, to avoid potential financial difficulties.

CONCLUSIONS AND SUGGESTION

Based on the results of research using the SLR method which was conducted in journals published from 2012 to 2022, the following conclusions can be drawn.

1. Research on the topic of predicting financial distress was most widely published in 2020, preceded by an increase in the number of publications since 2016. Then research on the topic of predicting financial difficulties was most widely published in scientific journals with Sinta 4 accreditation, which is a good thing that Sinta accredited journals have given a lot of room for the publication of papers researching the topic of predicting financial distress.
2. There are two major groups of factors that influence the prediction of financial distress, namely financial ratios and non-financial ratios. Financial ratios based on information obtained from the issuer's financial statements and giving 62 variables of financial ratios in research and liquidity ratios with the Current Ratio are the financial ratio factors that have the most influence on the prediction of financial difficulties. Meanwhile, non-

financial ratio factors are based on information from a broader source than financial report figures. Factors non-financial ratios provide 31 independent variables in research predicting financial difficulties.

3. Main factors or determinants that are proven to influence the prediction of financial distress, namely from the financial ratio factor, namely the profitability ratio, namely ROA, the liquidity ratio, namely CR, the leverage ratio, namely DER and DAR, and the activity ratio, namely TA t/o. As for the non-financial ratio factors are company size, managerial ownership, and institutional ownership.

From the results of this study, researcher recommend suggestions so that academics and future researchers, company management, shareholders, and also related stakeholders, can practice the corporate financial distress predictions in a more precise and accurate manner by using determinants that are proven to be the most influential in predicting financial distress. Future researcher may as well explore more on different factors, both from financial ratios or non- financial comparisons, to account for financial distress in empirical research, adding more scientific studies in this field. Nevertheless, of importance is that the findings of previously published literature can be a point of reference for next researched keen on financial distress, prediction, and mitigation studies.

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