The phenomenon of financial distress of manufacturing companies in Indonesia during the Covid-19 Pandemic

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ABSTRACT

The purpose of this study is to examine the differences in the value of the financial distress of manufacturing companies before and after the Covid-19 pandemic, as well as to examine the determinants that affect the financial distress of manufacturing companies before and after the Covid-19 pandemic. This study is a quantitative study with the population in this study namely manufacturing companies in Indonesia. The sample is 1005 Firm Years in manufacturing companies in Indonesia. These Manufacturing Companies were taken from 2016-2021, but we divided the sample into 2 categories, namely 2016-2019, namely in the pre-pandemic period as many as 653 firm years, and during the pandemic as many as 352 firm years. The dependent variable used in this study is financial distress, measured by the O-Score Model. Furthermore, the independent variables are profitability using ROA, liquidity using the current ratio, and leverage using the Debt to Assets Ratio. The test results show no difference between the financial distress of manufacturing companies in Indonesia before and during the pandemic. During the pandemic, financial ratios became more considered in predicting financial distress than before the pandemic. The role of profitability is a factor that impacts financial distress is more impactful in the pre-pandemic period. The role of liquidity being a factor that impacts financial distress is more impactful during the pandemic. Leverage can also be a good indicator in predicting financial distress both in the pre-pandemic and during the pandemic.

INTRODUCTION

Bankruptcy is an undesirable condition for all companies, both small and large. However, the Covid-19 pandemic phenomenon forced all companies to survive financially. All orders of life have changed globally during the Covid-19 pandemic that began in 2020. Indonesia is also experiencing the same conditions. The Indonesian economy experienced its second recession after its first recession in 1998 (BPS, 2020). As a result, every company must strive to improve performance and strengthen its fundamentals so that it is not threatened with bankruptcy (Mutiara and Septyanto, 2022). Therefore, knowing the company's financial condition early on is very important to determine steps to prevent bankruptcy.

One of the stages leading to bankruptcy that the company goes through is financial distress. Financial distress is a company's fundamental condition which is marked by net income which shows negative numbers in a row, as well as the book value of equity which also shows the same number in a row (Ananto, 2020), so companies need bankruptcy analysis to recognize this condition. The earlier the company conducts a bankruptcy analysis to find out the early warnings of bankruptcy, the smaller the chances of the company going bankrupt. Vice versa if the company is late in doing so, the more opportunities for the company to go bankrupt (Usmany and Loupatty, 2021). For this reason, financial statements as a reflection of the company's viability are used to carry out this analysis. With financial reports, companies can make the right decisions through information about the company's financial condition and performance (Januar et. al, 2020). As a result of the Covid-19 pandemic, as many as 88 percent of companies in
Indonesia are threatened with financial distress due to losses (Ministry of Manpower, 2020). Thus, this condition can be a bad signal for companies that are likely to go bankrupt.

Many studies examine the factors that affect the company's financial distress. Following the signaling theory, good financial reports are a signal that the company has also operated well so that the company will avoid the factors that cause bankruptcy and losses for stakeholders (Putri and Kristanti. 2020). With this theory, companies can provide signals to stakeholders regarding how the company's performance prospects are shown in the financial statements through the company's financial performance ratios (Restianti and Agustina, 2018). So, the good or bad signal given will be reflected in the company's financial performance ratio.

Profitability, liquidity, and leverage ratios are ratios that can signal the company's financial distress. Companies with high profitability are less likely to experience financial distress because they have succeeded in generating large profits from their operational activities (Armanadi et al, 2021), and vice versa the possibility of companies experiencing financial distress will be greater if they have low profitability. Companies with high liquidity also mean that the company can pay the short-term debt on time to avoid the possibility of experiencing financial distress (Ikpesu, 2019). In different conditions, if the company has high leverage, it is likely that the company will experience financial distress due to bankruptcy or cannot fulfill its obligations (Nastiti, 2021). With the signal described by the financial performance ratio, the company is expected to be more alert to conditions that threaten the company's performance.

The purpose of this study is to examine the differences in the value of the financial distress of manufacturing companies before and after the Covid-19 pandemic, as well as to examine the determinants that affect the financial distress of manufacturing companies before and after the Covid-19 pandemic. This research is expected to be a suggestion for management to further increase their awareness in detecting early warnings of bankruptcy that will be faced by the company. Thus, management can immediately take appropriate preventive measures to reduce the risk of bankruptcy.

**Literature Review**

**Signaling Theory**

The signaling theory which was first proposed by Spence (1973) is defined as a signal in the form of company performance information provided by the owner of the information to investors, so that when companies with more information tend to be encouraged to convey it to potential investors (Diyanto, 2020). This theory explains that any information about the company's growth in the future aims to assist investors in making decisions, so the company conveys the information not because of regulations but because the company is also obliged to pay attention to the surrounding environment (Purwaningsih and Aziza, 2019). In simple terms, the signal given contains the extent to which management is trying to realize the owner's wishes (Prayuninghshih et al, 2021). The signal given can also be positive or negative (Saputri and Effendi, 2021). If the signal is positive, investors will also respond positively, which means that investors' desire to invest will increase. Conversely, if the signal given is negative, investors will also respond negatively so that investor interest in investing decreases. In this case, before making a decision, investors will first consider whether the signal given is negative or positive.

**Financial distress**

Financial distress is an emergency condition that indicates bankruptcy. Financial distress is different from bankruptcy. Bankruptcy is a condition in which the company cannot utilize capital properly, management practices are inefficient, and cannot maintain sufficient cash so that the company's liabilities are higher than its assets (Armanadi et al, 2021). While this financial difficulty is only a stage towards bankruptcy, so not all companies experiencing financial distress will also experience bankruptcy (Ananto, 2020). Several definitions of financial distress are explained by Carolina et al (2018), namely 1) *business failure* where a business stops because it cannot pay debts, 2) *legal bankruptcy* where a company files for bankruptcy, 3) *technical insolvency* where a company cannot pay its short-term debt., and 4) *accounting insolvency* where total assets are lower than the company's total debt. The cause of financial distress can occur due to internal and external factors.

One of the external factors is the Covid-19 pandemic which has changed the global economic system. Many companies are threatened with financial distress until some companies go bankrupt. If the company is facing financial distress, the trust of stakeholders will be lost and they will decide to cooperate with the company (Tahu, 2019). Similar to signaling theory, the company's financial distress is a bad signal for stakeholders because they doubt the company's survival. This financial difficulty is influenced by financial ratios, but there is a difference in the effect of this ratio from before and during the Covid-19 pandemic. Therefore, the hypotheses in this study are:

H : There is a difference in the effect of financial ratios on financial distress before and during the Covid-19 pandemic.

**Profitability**

The profitability ratio is a financial analysis that assesses the company's ability to generate profits from time to time. Profitability has an inverse relationship with financial distress, so companies with high profitability will avoid the threat of financial distress because the company can generate profits (Dwiantari and Artini, 2021). Several previous studies conducted in different countries showed a negative relationship between profitability ratios and financial distress, namely in the research of Dwiantari and Artini (2021) in Indonesia, Ikpesu (2019) in Nigeria, Kamaludin et al (2019) in Malaysia, Rafatnia et al. (2021) in Iran, and Charalambakis and...
Garrett (2019) in Greece. However, different results are shown by the research of Saputri and Asrori (2019) in Indonesia, Ceylan (2021) in Turkey. However, in signaling theory that high profitability reflects that the company can operate profitably to avoid the risk of financial distress. Based on theoretical considerations and previous research which showed different results, however, companies with high profitability tend to minimize the possibility of experiencing financial distress. Therefore, the hypotheses in this study are:

H : Profitability harms financial distress.

Liquidity

The liquidity ratio is a financial analysis that assesses the company's ability to pay short-term obligations as they fall due. In this case, if the company can pay off its short-term obligations, the interest expense can also be paid by the company, so that the company is in a healthy condition and is increasingly avoiding the possibility of experiencing financial distress (Saputri and Asrori, 2019). Furthermore, the company will pay off its obligations by seeking more loans when the company is experiencing financial distress so that short-term liabilities will increase, indicating that the company is on the verge of bankruptcy (Dwiantari and Artini, 2021). This is following signaling theory, if the company experiences a lot of liquidity problems, the stakeholders catch a bad signal for the survival of the company. Several previous studies have shown a negative relationship between liquidity ratios and financial distress. This is like several studies conducted in different countries, including Ikpesu (2019), Dwiantari and Meaning (2021), Rafatnia et al (2021). In contrast to the results of research by Saputri and Asrori (2019), Ceylan (2021) shows that there is a positive relationship between liquidity and financial distress. Based on theoretical considerations and previous research which showed different results, however, companies with low liquidity tended to increase the likelihood that the company would experience financial distress because the company did not have sufficient funds to pay short-term obligations. Therefore, the hypotheses in this study are:

H : Liquidity harms financial distress.

Leverage

The leverage ratio is a financial analysis that shows the proportion of company assets financed by debt. Companies with different leverage policies will affect the extent to which debt can finance company assets (Gunawan and Putra, 2021), so companies with high leverage indicate that the company is not healthy because it is at risk of bankruptcy. Following signaling theory, the high leverage of the company is a bad signal that the risk of default on the company's obligations is also high. Previous studies conducted in several countries, including Dwiantari and Artini (2021), Rafatnia et al (2021), Charalambakis and Garrett (2019), and Ceylan (2021) succeeded in showing a positive relationship between leverage and financial distress. Different results are shown by Saputri and Asrori (2019), Gunawan and Putra (2021) which show a negative relationship between leverage and financial distress. Based on theoretical considerations and previous research which showed different results, but tend to be companies that have high leverage, the more likely the company is to experience financial distress. Therefore, the hypotheses in this study are:

H : Leverage has a positive effect on financial distress.

Research and Methodology

This study is a quantitative study that examines the relationship between variables. The population in this study is manufacturing companies in Indonesia. The sample is 1005 Firm Years in manufacturing companies in Indonesia. These Manufacturing Companies were taken from 2016-2021, but we divided the sample into 2 categories, namely 2016-2019, namely in the pre-pandemic period as many as 653 firm years, and during the pandemic as many as 352 firm years. The company was successfully selected using the purposive sampling method. The dependent variable used in this study is financial distress as measured by using the O-Score Model. Several previous studies that chose this method, namely Pramudita (2021) in Indonesia, Lisin et al (2022) in North America, Gerber (2020) in South Africa, showed that the O-Score Model has high accuracy than other models and improves the previous model, to predict financial distress with a larger sample. Furthermore, the independent variables are profitability using ROA, liquidity using the current ratio, and leverage using the Debt to Assets Ratio.

This study uses 2 kinds of tests in testing the hypothesis, namely, the different test and also the regression test. Testing hypothesis 1 by conducting a different test between the level of financial difficulty before the pandemic and during the pandemic. The hypothesis is accepted if there is a difference between before and during the pandemic. Hypothesis testing 2, 3, and 4 can be done by performing multiple regression tests before and during the pandemic. This regression test has also been carried out by the classical assumption test process, namely normality, heteroscedasticity, multicollinearity, and autocorrelation so the regression model is proven to be a good model.
Findings and Discussions

Findings

The results of this test begin with the results of descriptive statistics. In the results of descriptive statistics, we divide them into 2 results, namely descriptive statistics before the pandemic and also during the pandemic. The results can be seen in the explanations in tables 1 and 2.

<table>
<thead>
<tr>
<th>Table 1: Descriptive Statistics of Financial distress Before Covid-19</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial distress</td>
<td>-11.53</td>
<td>31.92</td>
<td>-1.1845</td>
<td>3.89608</td>
</tr>
<tr>
<td>Profitability</td>
<td>-1.37</td>
<td>0.92</td>
<td>0.0383</td>
<td>0.12112</td>
</tr>
<tr>
<td>Liquidity</td>
<td>0.02</td>
<td>82.98</td>
<td>2.3620</td>
<td>3.72894</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.05</td>
<td>5.07</td>
<td>0.5488</td>
<td>0.50512</td>
</tr>
</tbody>
</table>

The results of descriptive statistics on the financial distress of manufacturing companies in Indonesia before covid-19 in the last 4 years show that the level of financial difficulty in Indonesia shows the best value is -11.53 and the maximum value is 31.92 with the average value of manufacturing companies in Indonesia. in healthy condition, which is very far from -1.1845, with a standard deviation of 3.89608. In terms of profitability, it has a minimum value of -1.37 and a maximum value of 0.92 and the average manufacturing company in Indonesia earns a profit of 0.0383 and a standard deviation of 0.12112. In terms of liquidity, it has a minimum value of 0.02 and a maximum value of 82.98, and the average manufacturing company in Indonesia before the pandemic had a current asset value of 2.3620 of its current debt, with a standard deviation of 3.72894. In terms of leverage, it has a minimum value of 0.05 and a maximum value of 5.07, and the average manufacturing company in Indonesia before the pandemic was in very good condition with a liability value of 0.5488 from its equity value, so it was dominant by equity compared to liabilities, and standard deviation it is 0.50512.

<table>
<thead>
<tr>
<th>Table 2: Descriptive Statistics of Financial distress During Covid-19</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Average</th>
<th>Standard Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial distress</td>
<td>-96.17</td>
<td>43.41</td>
<td>-1.5531</td>
<td>6.35670</td>
</tr>
<tr>
<td>Profitability</td>
<td>-1.05</td>
<td>8.30</td>
<td>0.0421</td>
<td>0.46119</td>
</tr>
<tr>
<td>Liquidity</td>
<td>0.01</td>
<td>303.31</td>
<td>3.0898</td>
<td>16.21216</td>
</tr>
<tr>
<td>Leverage</td>
<td>0.00</td>
<td>8.21</td>
<td>0.5305</td>
<td>0.54855</td>
</tr>
</tbody>
</table>

The results of descriptive statistics on the financial distress of manufacturing companies in Indonesia during covid-19 in the last 2 years, namely 2020 and 2021, show that the level of financial difficulty in Indonesia shows the best value is -96.17 and a maximum value is 43.41 with an average value. The average manufacturing company in Indonesia is in a healthy condition, which is very far from -1.5531, with a standard deviation of 6.35670. In terms of profitability, it has a minimum value of -1.05 and a maximum value of 8.30 and the average manufacturing company in Indonesia earns a profit of 0.0421 and a standard deviation of 0.46112. In terms of liquidity, it has a minimum value of 0.01 and a maximum value of 303.31, and the average value of manufacturing companies in Indonesia during the pandemic was 3.0898 of their current liabilities, with a standard deviation of 16.21216. In terms of leverage, it has a minimum value of 0.00 and a maximum value of 8.21, and the average manufacturing company in Indonesia during the pandemic is in very good condition with a liability value of 0.5305 from its equity value, so it is dominant by equity compared to liabilities, and standard deviation it is 0.54855. After conducting descriptive statistical tests, it is continued by looking at different tests of financial distress before and during the pandemic.

<table>
<thead>
<tr>
<th>Table 3: Results of Different Tests of Financial distress Before and During the Pandemic</th>
<th>Coefficient</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Results</td>
<td>0.121</td>
<td>0.855</td>
</tr>
</tbody>
</table>

The results of different tests on financial distress before and during the pandemic showed a significance of 0.855 which was above 0.05 so it was not significant. This shows that there is no difference between the financial distress before and during the pandemic for manufacturing companies in Indonesia. These results indicate that Hypothesis 1 is rejected. Continued testing is carried out with regression tests before and during the pandemic in table 4.
Financial distress is an emergency condition that indicates bankruptcy. Financial distress is different from bankruptcy. Bankruptcy is a condition in which the company cannot utilize capital properly, management practices are inefficient, and cannot maintain sufficient cash so that the company's liabilities are higher than its assets (Armadani et al, 2021). While this financial difficulty is only a stage towards bankruptcy, so not all companies experiencing financial distress will also experience bankruptcy (Ananto, 2020). One of the external factors is the Covid-19 pandemic which has changed the global economic system. Many companies are threatened with financial distress until some companies go bankrupt. However, the test results show that there is no difference between the financial distress before and during the pandemic from manufacturing companies in Indonesia. This is logical to explain because many manufacturing companies produce products that are needed daily so that they will still be purchased despite the pandemic, and can even be purchased through the marketplace during the pandemic. During the pandemic, financial ratios became more considered in predicting financial distress, compared to before the pandemic.
Profitability

The profitability ratio is a financial analysis that assesses the company's ability to generate profits from time to time. Profitability has an inverse relationship with financial distress, so companies with high profitability will avoid the threat of financial distress because the company can generate profits (Dwiantari and Artini, 2021). The results of this study indicate that both before and during the pandemic, the company was still profitable and this ratio also decreased, contributing players to financial distress. However, the role of profitability being a factor that has an impact on financial distress is more impactful in the pre-pandemic period. This is because, during normal conditions, more profitable companies will be further away from the possibility of financial distress. But even so, even during the pandemic, profitability is a factor that is also a good indicator in predicting financial distress. This is also following some previous studies.

Several previous studies conducted in different countries showed a negative relationship between profitability ratios and financial distress, namely in the research of Dwiantari and Artini (2021) in Indonesia, Ipkesu (2019) in Nigeria, Kamaludin et al (2019) in Malaysia, Rafatnia et al. (2021) in Iran, and Charalambakis and Garrett (2019) in Greece. However, different results are shown by the research of Saputri and Asrori (2019) in Indonesia, Ceylan (2021) in Turkey. However, in signaling theory that high profitability reflects that the company can operate profitably to avoid the risk of financial distress. Many studies that are following the results of this study indicate that profitability can be a good indicator of financial distress.

Liquidity

The liquidity ratio is a financial analysis that assesses the company's ability to pay short-term obligations as they fall due. In this case, if the company can pay off its short-term obligations, the interest expense can also be paid by the company, so that the company is in a healthy condition and is increasingly avoiding the possibility of experiencing financial distress (Saputri and Asrori, 2019). Furthermore, the company will pay off its obligations by seeking more loans when the company is experiencing financial distress so that short-term liabilities will increase, indicating that the company is on the verge of bankruptcy (Dwiantari and Artini, 2021). This is following signaling theory, if the company experiences a lot of liquidity problems, the stakeholders catch a bad signal for the survival of the company.

The results of this study indicate that liquidity can be a good indicator in predicting financial distress both before the pandemic and during the pandemic. However, the role of liquidity in being a factor that has an impact on financial distress is more impactful during the pandemic. This is because during a pandemic, the company will experience many challenges so the more they show signs of being illiquid, the more it will indicate that the company will experience financial distress. However, even before the pandemic, liquidity was a factor that also became a good indicator in predicting financial distress. This is also following some previous studies.

Several previous studies have shown a negative relationship between liquidity ratios and financial distress. This is like several studies conducted in different countries, including Ipkesu (2019), Dwiantari and Artini (2021), Rafatnia et al (2021). In contrast to the results of research by Saputri and Asrori (2019), Ceylan (2021) shows that there is a positive relationship between liquidity and financial distress. Many studies that are following the results of this study indicate that liquidity can be a good indicator of financial distress.

Leverage

The leverage ratio is a financial analysis that shows the proportion of company assets financed by debt. Companies with different leverage policies will affect the extent to which debt can finance company assets (Gunawan and Putra, 2021), so companies with high leverage indicate that the company is not healthy because it is at risk of bankruptcy. Following signaling theory, the high leverage of the company is a bad signal that the risk of default on the company's obligations is also high.

The results of this study indicate that leverage can be a good indicator in predicting financial distress both before the pandemic and during the pandemic. This is also following several previous studies. Previous studies conducted in several countries, including Dwiantari and Artini (2021), Rafatnia et al (2021), Charalambakis and Garrett (2019), and Ceylan (2021) succeeded in showing a positive relationship between leverage and financial distress. Different results are shown by Saputri and Asrori (2019), Gunawan and Putra (2021) which show a negative relationship between leverage and financial distress. Many studies that are following the results of this study indicate that leverage can be a good indicator of financial distress.

Conclusions

Financial distress is an emergency condition that indicates bankruptcy. The test results show that there is no difference between the financial distress before and during the pandemic from manufacturing companies in Indonesia. During the pandemic, financial ratios became more considered in predicting financial distress, compared to before the pandemic. Financial distress is influenced by financial ratio indicators.

Both before and during the pandemic, the company was still profitable and this ratio also fell, contributing to players' financial distress. However, the role of profitability being a factor that has an impact on financial distress is more impactful in the pre-pandemic period. This is because, during normal conditions, more profitable companies will be further away from the possibility of financial distress. Liquidity can be a good indicator in predicting financial distress both in the pre-pandemic and during the pandemic. However, the role of liquidity in being a factor that has an impact on financial distress is more impactful during the pandemic. This
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Conflicts of Interest: The authors declare no conflict of interest.

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