

## FINANCIAL DISTRESS OF MANUFACTURING COMPANIES LISTED ON THE INDONESIA STOCK EXCHANGE

Muhammad Fadila Laitupa<sup>1\*</sup>, Hesty Indriani<sup>2</sup>

<sup>1,2</sup>Jurusan Akuntansi, Fakultas Ekonomi dan Bisnis, Universitas Pattimura, Ambon

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**E-mail:**  
mflaitupa@gmail.com

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### ABSTRACT

This study aims to analyze differences in levels of financial distress using the Zwmjweski method before and during Covid-19 in manufacturing companies listed on Bursa Efek Indonesia (BEI) for the 2019 and 2020 periods. This type of research is quantitative research using a purposive sampling technique which produces 133 samples. The research data collection technique uses documentation obtained from public company financial reports published on the IDX through the IDX's official website, namely [www.idx.co.id](http://www.idx.co.id). Then it was reviewed and tested using SPSS software version 25. The results of the T-Test analysis showed that there was no significant difference between the level of financial distress both before and during the Covid-19 pandemic. So it can be concluded that the average financial distress before and during the Covid-19 pandemic has a value that is not much different.

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### 1. INTRODUCTION

Financial distress is a condition in which a company experiences a financial crisis accompanied by decreased profits and fixed assets and fails to fulfill debtors' obligations because they don't have the funds to continue their business (Steinker et al., 2016). Financial distress is also a condition of decreasing financial condition in a company and occurs before bankruptcy (Piatt & Piatt, 2002). Conditions like this need to be watched out for as well as anticipated by the company, because it has an effect on hampering the company's operational activities. With such circumstances, the company's management must have ways and actions to prevent and inhibit this. Prior to the occurrence of financial distress, management must prepare policies and strategies for the company's performance both financially and operationally so that it does not experience a continuous decline (Apergis et al., 2019).

A company can be said to be in a state of financial distress if the company has financial performance that shows negative operating profit, negative net income, negative book value of equity, and the company has merged with other companies (Reschiwati et al., 2021). These characteristics can be seen by investors, creditors or other external parties through the financial reports that have been issued by the company. Financial reports serve as information to measure a company's ability to manage finances and whether operational performance is in line with company goals. Financial reports are also used as material for consideration by investors and management themselves in making decisions (Meiryani et al., 2020). Good financial reports show that the company's performance from one period to another has been good. If the company's net profit and equity value are negative from one period to the next and do not experience changes for the better, then investors will assume that the company is experiencing financial difficulties, thereby affecting their decision to invest in the company (Osadchy et al., 2018).

Apart from looking at it from the side of financial reports, there are several things that can cause financial distress in companies, including originating from internal companies, namely management in the use of company capital that is not good (Ghasemzadeh et al., 2021). Then the company is also unable to pay off debts to creditors, so that the financial condition is not sufficient to maintain its business. As for internal causes, external or external causes are no less important to watch out for and anticipate because they can cause companies to be in a state of financial distress (Isayas, 2021). This condition can occur due to delays in credit payments by customers, creditor and debtor problems and natural disasters that can disrupt company assets.

Another event that is currently endemic is also thought to have had a major impact on the company's performance, both financially and operationally, namely the Covid-19 pandemic. The emergence of the first Covid-19 case in Wuhan, China at the end of 2019 spread this virus pandemic so quickly from human to human, from one country to another, so that it spread throughout the world, including Indonesia. The entry

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of the Covid-19 pandemic case into Indonesia was announced on March 2 2020. Efforts were made by the government to prevent the spread of this Covid-19 case, by issuing a large-scale social restriction policy (PSBB) to regulate matters such as physical distancing, using masks, canceling schools, doing work from home, and so on (Covid-19 Task Force, 2020). In the conditions of the Covid-19 pandemic, not a few companies experienced a decline in their financial and operational performance. This led to a weakening of the ongoing business, both in the financial and operational sectors, causing the company to suffer huge losses. As a result, many companies have implemented a work from home (WFH) system, and not a few companies have even been forced to terminate their employment relationship with their employees (Lele, 2021). In Liputan 6 on November 24 2020 it was explained that the Ministry of Manpower stated that during the Covid-19 pandemic around 88% of companies experienced losses which were generally caused by a decrease in sales which affected production and profits obtained by the company. In CNBC Indonesia on May 12 2020, Asosiasi Emiten Indonesia (AEI) stated that the Covid-19 pandemic caused 50 issuers to experience cash flow difficulties, including the largest automotive issuer, namely PT. Astra International Tbk (ASII) experienced a significant decline in sales by 40% and the company's performance also declined.

On the other hand, during the Covid-19 pandemic, there were several corporate sectors that actually experienced an increase in sales and company performance which remained stable as if they were not affected by this pandemic. Sectors that are not affected include the agricultural and pharmaceutical sectors. The Covid-19 pandemic requires people to eat healthy foods so that their immunity is maintained. This requires companies to increase their production, especially in staple foods. This increase was driven by soaring people's needs due to the need for healthy staple food during the Covid-19 pandemic and closed import access, which required people to consume local products. The increase in sales and production was experienced by the pharmaceutical sector. This can be seen from the performance of this wind turbine manufacturer throughout the first quarter of 2020. SIDO managed to record a profit increase of 10.85% to IDR 231.53 billion from IDR 208.87 billion in the same period the previous year. Meanwhile, on the sales side, SIDO also experienced growth to IDR 703.72 billion from IDR 713.68 billion in the first quarter of 2019. These sales increased by 2.39% (Supriyatna, 2020).

There are several models of analysis carried out by researchers to measure the level of financial distress in companies, namely the Altaman Z Score, Springate, Zwimjweski and Grover Models. Of the several models, according to some researchers, the most accurate results compared to other models is the Zwimjweski model. The Zwimjweski model is a ratio analysis used to measure a company's performance, leverage, and liquidity (Fatmawati, 2012). This model has the highest level of accuracy in predicting financial distress, namely the Zwinjweski model using the coefficient of determination test (Gunawan et al., 2017). The Zwimjweski model is the most appropriate financial distress prediction model used to predict a company's financial distress in the future (Grice & Dugan, 2003).

In several previous studies there were differences from this research, namely in the research object, phenomenon, and methods of measuring financial distress (Zulaikah & Laila, 2017); (Nakamura, 2021). Then in other studies there are also differences in the object of research and the phenomena that occur (Aditya Setiawan & Rasmini, 2018). The existence of these various differences and the current outbreak of the phenomenon, namely the Covid-19 pandemic, are interesting to study. In addition, there are also some investors who still stick with the company even though they are experiencing financial distress, so it's very important to analyze the level of financial distress of the company which will later be able to provide an understanding to both investors and creditors before investing in a company. In accordance with the formulation of the problem above, the purpose of this study is to find out the differences in financial distress in manufacturing companies before and during the Covid-19 pandemic.

## 2. METHOD

This research is a quantitative research, namely research that emphasizes its analysis on numerical data and can be processed with statistics. The type of data in this research is secondary data. Secondary data is data obtained indirectly through internet media, namely the official website of Bursa Efek Indonesia (BEI) [www.idx.co.id](http://www.idx.co.id). This study uses documentation data collection techniques. Documentation is a data collection technique by recording and studying documents or archives that are relevant to the problem under study. The financial reports used are the 2019 annual report (before the covid-19 pandemic) and the 2020 annual report (during the covid-19 pandemic) which have been audited and published by Bursa Efek Indonesia (BEI).

The population is all subjects or objects that have certain quantities and characteristics determined by researchers to be studied and then conclusions are drawn (Sugiyono, 2018) so the population used in

this study is Manufacturing companies registered on the BEI. Sampling method using Purposive Sampling. Purposive Sampling is sampling using certain considerations in sampling (Campbell et al., 2020).

The characteristics used for sampling are as follows: 1) Manufacturing companies that have been listed on the BEI in 2019 and 2020. 2) Manufacturing companies that have published 2019 and 2020 annual reports.

Table 1. Sampling Characteristics

Information	Amount
Manufacturing companies listed on the Indonesia Stock Exchange in 2019 and 2020	172
Manufacturing companies that do not issue 2019 and 2020 annual reports.	(39)
<b>Number of Samples</b>	<b>133</b>

This analysis is carried out by collecting the data needed in the research, then the data is clarified and it is ensured that the data obtained is the actual data. Next, the researcher describes the data and analyzes the data based on the current phenomena by calculating financial ratios using the Zwimjweski model. So with these results it can be seen that the company is experiencing difficulties or not.

The normality test is used to determine whether the data used in the study is normally distributed or not. If the data obtained is from a normally distributed population, it is better to use parametric statistics to make statistical inferences. In this study, researchers used the data normality test with the Kolmogorov-Smirnov method to measure the level of suitability of the data in a particular distribution. The significance level in this test is 0.05 or 5%. Data is normally distributed if the significant value is more than 0.05 and vice versa.

Hypothesis testing is a test of a statement using statistical methods so that the test results can be declared statistically significant. After the normality test is carried out, data analysis is carried out to test the hypotheses that have been proposed. Testing this hypothesis uses a different test, namely the Paired T Test.

The Paired T test is used as a comparative or difference test if the data scale of the two variables is quantitative (Interval or Ratio). This test is also known as the paired T test. The meaning of the Paired T Test is a parametric different test on two paired data. That is the meaning of the paired t test by statisticians. In accordance with this understanding, it can be explained in more detail that this test is intended for different tests or comparative tests. This means that you will compare whether there is a difference in the mean or average of the two paired groups. Paired means that the data source comes from the same subject (Sugiyono, 2017). Paired T Test This test uses a significance level of 0.05 or 5% as a determinant of whether or not the hypothesis that has been determined is accepted, the criteria used in this test are as follows:

- a. If the significant value  $< 0.05$ , then  $H_0$  is rejected and  $H_a$  is accepted, which means there is a difference.
- b. If the significant value is  $> 0.05$ , then  $H_0$  is accepted and  $H_a$  is rejected, which means there is no difference.

In addition to using a significant level, the paired t test also uses t count and t table for the basis of hypothesis decision making with the following testing criteria:

- a. If t count  $>$  t table, then  $H_0$  is rejected and  $H_a$  is accepted, which means there is a difference.
- b. If t count  $<$  t table, then  $H_0$  is accepted and  $H_a$  is rejected, which means there is no difference.

This is what is meant by a two-sample difference test in pairs. The next step is to read (interpret) the results of the Paired Sample T-Test which consists of. The Paired Samples Correlations table shows the correlation value which shows the relationship between the two variables in the paired sample. This is obtained from the bivariate Pearson correlation coefficient (with a two-tailed significance test) for each pair of variables included. The Paired Samples Test table is the main table of the output which shows the results of the tests performed. If the results of the initial test and the final test experience significant (meaningful) changes.

### 3. RESULT AND DISCUSSION

In this study the data used are the company's financial statements for 2019 (before Covid-19) and 2020 (during Covid-19). This research has one research variable, namely Financial Distress which is calculated using the Zwimjweski model where in this model there is a financial ratio variable that is measured to determine a company's financial distress. The objects in this study are manufacturing

companies listed on the Bursa Efek Indonesia (BEI). The sample in this study were 133 manufacturing companies listed on the Bursa Efek Indonesia (BEI).

Descriptive analysis is used to provide an overview and information about the variable data in this study. Descriptive statistical analysis can be displayed in the form of the amount of data, the mean value (average), the mean std.error value, and the standard deviation value. This analytical technique provides initial descriptions for variables in research to measure *Financial Distress* before COVID-19 and during COVID-19. The results of the descriptive statistical analysis can be seen in Table 2

Table 2. Descriptive Statistical Test Results  
**Paired Samples Statistics**

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Financial Distress Sebelum Covid	249382.4361	133	186834.03013	16200.56502
	Financial Distress Saat Covid	225267.3609	133	193861.37848	16809.91340

Based on Table 2 it can be seen that the Observations value indicates the amount of data used in this study as many as 133 which is the number of samples during 2019 and 2020 which can be explained as follows: Financial Distress before covid 2019 in this study had a mean value of 249328.4361. Then the standard deviation value is 186834.03013 and the mean standard error value is 16200.56502. Meanwhile, the mean Financial Distress during Covid 2020 was 225267.3609, which had a standard deviation value of 193861.37848 with a mean standard error value of 16809.91340.

#### a. Normality Test

The normality statistical test is carried out with the aim of assessing the distribution of data in a group of data or variables, whether the data is normally distributed or not. Which can be used in this research is Kolmogorov Smirnov. Basic decision making in the Kolmogorov-Sumirnov test:

1. If the *Asymp.sig (2-tailed)* value is above the significant value of 5% or 0.05, it means that the residual variable is normally distributed.
2. Meanwhile, if the *Asymp.sig (2-tailed)* value is below the significant value of 5% or 0.05, it means that the residual variable is not normally distributed.

Seen in Table 3 are the results of the normality statistical test using the One-Sample *Kolmogorov Sumirnov*.

Table 3. Zwiwjweski Method Normality Test  
**One-Sample Kolmogorov-Smirnov Test**

		Unstandardized Residual
N		133
Normal Parameters <sup>a,b</sup>	Mean	.000000
	Std. Deviation	177977.4123753
Most Extreme Differences	Absolute	.064
	Positive	.064
	Negative	-.032
Test Statistic		.064
Asymp. Sig. (2-tailed)		.200 <sup>c,d</sup>

a. Test distribution is Normal.

b. Calculated from data.

c. Lilliefors Significance Correction.

Based on Table 4 of the Kolmogorov-Smirnov test results for the Zwiwjweski method above, it can be seen that the *Asymp. Sig (2-Tailed)* 0.200, which is greater than the value of 0.05 or  $0.200 > 0.05$  so that it can be concluded that the value is acceptable, which means that the data is normally distributed and can be used for further testing.

#### b. Paired T Test (Paired T Test)

The Paired T Test was carried out to compare whether there was a difference in the mean or average of the two groups (data before and during Covid-19) that were paired. Paired means that the data source

comes from the same subject (Sugiyono, 2017). The SPSS output results with the Paired sample t test can be seen in Table 4 (Table of Paired Samples Correlations) Table 4. Correlation Test and Table 5 (Paired Sample Test).

Table 4. Correlation Test  
**Paired Samples Correlations**

		N	Correlation	Sig.
Pair 1	FINANCIAL DISTRESS BEFORE COVID & FINANCIAL DISTRESS DURING COVID	133	.396	.000

Based on the table above, the results of the correlation test or relationship between data before and during Covid-19 show the Financial Distress variable. The output above shows a significance value (Sig.) of  $0.000 < 0.05$ , so it can be said that there is a relationship between the Financial Distress variable before and during Covid-19.

Table 5. Paired T Test  
**Paired Differences**

		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		T	df	Sig. (2-tailed)
					Lower	Upper			
Pair 1	Financial Distress Sebelum Covid - Financial Distress Saat Covid	24115.1	209217.5	18141.4	-11770.5	60000.7	1.3	132	.19

The results of hypothesis testing show that the value of Sig. (2-tailed) is 0.186 which means the Sig value, (2-tailed) =  $0.186 > 0.05$  then  $H_0$  is accepted and  $H_a$  is rejected, the paired sample test on financial distress is not significant. This shows that there is no difference in the level of financial distress before and during Covid-19. While the results of testing the hypothesis using t count and t table show that the t test (paired sample t test) above shows no significant difference between financial distress before and during Covid-19 using the zwimjweski method. To see the value of t table, it is based on degrees of freedom (dk), which is  $N-1$ , namely  $133-1 = 132$ . The value of  $dk = 132$  at a significant level of 0.05 obtained t table = 1.97810. based on the results of the analysis of the t test (paired sample t test), it can be obtained that the t count is smaller than the t table, namely  $1.329 < 1.97810$  and Sig. (2-tailed) =  $0.186 > 0.05$ , then  $H_0$  is accepted and  $H_a$  is rejected so it can be concluded that there is no difference in the level of financial distress in companies before and during Covid-19.

## DISCUSSION

The results of testing the variables contained in this study from 172 manufacturing companies listed on the Indonesia Stock Exchange, there were 133 companies that met the sample criteria. And from the 133 companies, on average, there was no significant difference in the level of financial distress before the Covid-19 pandemic and during the COVID-19 pandemic. Only a few companies in each sector experienced changes in their level of financial distress before and during the Covid-19 pandemic.

The results of statistical tests using the (paired sample t-test) show that the Sig. (2-tailed) of 0.186, which indicates no significant difference. So it can be concluded that financial distress before and during the Covid-19 pandemic has a value that is not much different. The results of the study stated that there was no significant difference in the Zwimjweski method for manufacturing companies listed on the Indonesia Stock Exchange before and during the Covid-19 pandemic due to several things, such as a decrease in revenue and operating profit that was not so drastic, there were even companies that did not experience a

decline revenue and operating profit. Furthermore, the results of the 3 financial ratios ROA (*Return On Assets*), DR (*Debt Ratio*) and CR (*Current Ratio*) are not much different, where these components make up ratios in the Zwimjweski method formula, so that when these components experience a slight Zwimjweski's automatic markdown doesn't change much. This small change in Zwimjweski's value was indicated as evidence that there was no difference in the potential for bankruptcy for manufacturing companies before and during the Covid-19 pandemic. The results of the Zwimjweski different test for manufacturing companies showed no significant difference, so it can be concluded that the Covid-19 pandemic did not make a significant difference to the potential for *financial distress* of manufacturing companies listed on the Indonesia Stock Exchange.

#### 4. CONCLUSION

This research was conducted to find out differences in the level of *financial distress* of manufacturing companies listed on Bursa Efek Indonesia (BEI) before and during the Covid-19 pandemic, namely in 2019 and 2020 from the results of research with a total sample of 133 companies, using the *financial distress* calculation method, namely Zwimjweski method. And then testing the hypothesis using a different test, namely the Paired T Test. Based on the results of the research that has been conducted, it is concluded that there are differences in the level of financial distress but are not too significant or have a value that is not much different between before and during the Covid-19 pandemic. Implications and suggestions Theoretically, this research can contribute to interested parties to assess whether or not financial distress in a company. The results of this study can be used to add insight into knowledge in the field of finance related to different levels of financial distress in manufacturing companies. The results of this study can be used for academic literature as a reference and material for consideration in making investment decisions in the future after the pandemic is over.

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