

Before and During the Covid-19 Pandemic: Indonesia's Pharmaceutical Financial Performance Analysis

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Abstract. The purpose of this study is to analyze the financial performance of pharmaceutical companies before and during the covid-19 pandemic. This analysis uses liquidity ratios, profitability ratios, leverage ratios, activity ratios, firm size, firm growth, and dupont analysis. This research uses quantitative methods with a comparative approach, because the data used are in the form of numbers and conduct analysis using statistics with SPSS instruments. This study used 10 pharmaceutical companies listed on the Indonesia Stock Exchange from 2018 to 2021 using the purposive sampling method. The test methods used are descriptive statistics and paired sample t-tests. The test results showed that there were significant differences in the profitability and growth ratios of pharmaceutical companies before and during the covid-19 pandemic, while liquidity ratios, leverage ratios, activity ratios, firm size and analysis showed insignificant differences in pharmaceutical companies before and during the covid-19 pandemic.

Keywords. Activity Ratio, Dupont Analysis, Firm Growth, Firm Size, Leverage Ratio, Liquidity

1 Introduction

Covid-19 cases were first discovered in Wuhan City, China's Hubei Province in December 2019, which then spread rapidly to various such as Taiwan, Thailand, Vietnam, Malaysia, Nepal, Sri Lanka, Cambodia, Japan, Singapore, Canada, Finland, France, Germany and Indonesia. Covid-19 was first reported in Indonesia on March 2, 2020 with 2 cases and on March 29, 2020, there were 1,528 cases with positive Covid-19 and 136 deaths. The spread of this disease has had a broad impact socially and economically in Indonesia [1]. The pandemic created severe economic impacts in various sectors of the economy that negatively affected global trade, interest rates, financial market liquidity and created demand and supply shocks [2].

Indonesia issued a policy to stop the spread of covid-19 with the implementation of Large-Scale Social Restrictions. The implementation of Large-Scale Social Restrictions greatly affected the company's operational activities which resulted in a decrease and termination of economic activity during the pandemic. Based on a survey conducted by the Ministry of Manpower [3], it shows that 88% of companies in Indonesia affected by the pandemic are caused by losses, which are caused by a decrease in demand which will directly reduce sales and decrease production of goods and services. The decline in the company's production of goods and services will result in a decrease in the company's performance which has an impact on the decline in company value which has implications for a decrease in

stock prices. The pandemic has also had an impact on market prices and stock price movements on the Indonesia Stock Exchange [4].

Pharmaceutical companies have a very important role in the Covid-19 pandemic, because they have a responsibility in developing, producing, and distributing medicines in preventing the spread of covid-19 [5]. The need and demand for medicines and medical devices has increased sharply, has helped the pharmaceutical industry globally [6]. Pharmaceutical companies are the center of attention in the covid-19 struggle, the production of medical devices is intensified in every part of the world as a form of handling the rapid response to the spread of the covid-19 virus. No wonder what happens next is a fairly positive impact, namely the increase in investment in medical devices, the process of which is also supported by the government for handling the pandemic. Investment in medical devices in the midst of the Covid-19 pandemic can be part of handling this pandemic itself, but also as an opportunity in the face of economic slowdown conditions that also affect investment. Indonesia itself is no exception, where the medical device investment process has also received full attention from the government because of its considerable impact on several sectors [7]. The emergence of the covid-19 pandemic provides a great opportunity for pharmaceutical companies in creating corporate value, because it has an important role in treating covid-19 [8]. According to Behera and Rath (2021) the pharmaceutical industry has a positive and statistically significant average return. Measuring the

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ability of pharmaceutical companies to create value during the Covid-19 pandemic can be done using a financial performance measurement approach. Research by Mittal and Sharma (2021) also states that the Covid-19 outbreak has significantly affected the performance of pharmaceutical sector stocks. However, it is different from the research Dewi and Kencana (2022) which states that there is no difference in financial performance before and during the Covid-19 pandemic.

Financial Performance is the achievement of the company's success in a period that describes the condition of the company's financial health with financial ratio indicators. Financial performance is an analysis carried out by both internal and external parties to see the extent of the company's success in managing all its resources in accordance with applicable rules. Financial performance is an effort made by each company to measure and assess every success achieved in generating profit, so that the company can see the prospects, growth, and potential developments that have been achieved in the company [12]. Financial performance can be measured using financial ratio instruments consisting of liquidity ratios, profitability ratios, solvency ratios, activity ratios and other indicators that show the company's financial performance.

The research [13] compares financial performance in the banking sector, while this research compares financial performance in the pharmaceutical sector. This study used a longer observation period and more variables, while the study [11] used a study time period of 2019 to 2021 and fewer variables. Based on the presentation and review that has been carried out, I am interested in knowing the financial performance of pharmaceuticals before and during covid-19 in Indonesia.

2 Literature review

The pandemic has had a major impact on all sectors of the economy, including the sales and marketing industries of pharmaceutical companies, and has become part of the health care support system which is currently overwhelmed. Manufacturing, retail, and wholesale lines for drug supply have increased demand for pharmaceutical products and services due to the impact of covid-19 [6].

In a study conducted by Devi, Warasniasih and Masdiantini (2020) regarding the impact of Covid-19 on the financial performance of companies in Indonesia using the Wilcoxon signed rank test method, it was found that there was no significant difference in the liquidity ratio and leverage ratio, but there were significant differences in the ratio of short-term activity and profitability before and during the pandemic.

In contrast to the previous research by Wijayanto and Seno (2021) conducted a comparative analysis of financial performance in the goods and consumption industry sector in Indonesia before and during the pandemic. The research method used in this study was a multivariate variance analysis and found that the

pharmaceutical sector experienced a significant increase.

Furthermore, Ediningsih and Satmoko (2021) in their article on the impact of Covid-19 on financial performance in the pharmaceutical sector using a paired sample t-test and concluded that there were no significant differences in financial performance before and during the pandemic in Indonesia.

Febriantika, Prasetyo and Dharma (2021) analyzed the comparison of financial performance and value of manufacturing companies before and during the pandemic in Indonesia. This study used the Wilcoxon signed-rank test method and found that there were significant differences in financial performance and company value before and during the pandemic.

Research on the analysis of financial performance before and during the pandemic in pharmaceutical companies with a descriptive method states that gross profit margin and earnings per share have increased, while return on assets, return on equity and net profit margin have not increased [18].

3 Research Methods

The research method that we use in this study is a quantitative method where the data are used in the form of numbers with a comparative analysis approach. The research subjects I used were pharmaceutical companies listed on the Indonesia Stock Exchange for the period 2018-2019 (before covid-19) and 2020-2021 (during covid-19) consisting of 12 pharmaceutical companies. The objects in the study consist of liquidity ratios, profitability ratios, leverage ratios, activity ratios, company size, company growth, and analysis dupont.

The population in this study was all pharmaceutical companies listed on the Indonesia stock exchange during the period 2018 to 2021, with a sample of 40 data determined by the purposive sampling method. The test used in this study was a paired sample t-test.

The measurement of variables in the study can be summarized in the following table:

Table 1. Measurement of Research Variables.

No	Variable	Measurement	Source
1	Liquidity ratio	$\text{Current Ratio} = \frac{\text{Current Aset}}{\text{Current Liability}}$	(Dewi and Kencana, 2022)
2	Profitability ratio	$\frac{\text{Net Profit Margin}}{\text{Net Income}} = \frac{\text{Net Sales}}{\text{Net Sales}}$	(Limbong, 2022)
3	Leverage ratio	$\frac{\text{Debt to Equity Ratio}}{\text{Total Debt}} = \frac{\text{Total Equity}}{\text{Total Equity}}$	(Devi, Warasniasih and Masdiantini, 2020)
4	Activity ratio	$\frac{\text{Fixed Asset turnover}}{\text{Net Sales}} = \frac{\text{Fixed Assets}}{\text{Fixed Assets}}$	(Endri <i>et al.</i> , 2020)
5	Firm size	$\text{Firm Size} = \text{Logaritma Aset}$	(Tusek, Jezovita and Halar, 2021)
6	Firm growth	$\frac{\text{Assets Growth}}{\text{Total Assets}_t - \text{Total}} = \frac{\text{Total Assets}_t - \text{Total}}{\text{Total Assets}_t}$	(Fachrudin and Octavianus, 2021)

7	Dupont analysis	$\frac{\text{Return on Equity}}{\text{Net Income}} = \frac{\text{Equity}}{\text{Equity}}$	(Endri <i>et al.</i> , 2020)
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4 Results

Descriptive statistics is a collection of data that presents concisely the number of research samples, maximum value, minimum value, mean value and standard deviation of a predetermined research sample based on research methods. Descriptive statistics in the study are presented in the following table:

Table 2. Descriptive Statistics Before Covid-19.

Description	N	Min	Max	Mean	Std. Deviation
CR Before Covid	20	,99	5,94	2,6960	1,43350
NPM Before Covid	20	,00	,26	,0860	,06946
DER Before Covid	20	,15	4,23	1,1760	1,20161
FAT Before Covid	20	,85	24,01	4,9355	6,50075
Size Before Covid	20	15,02	30,64	23,7160	4,66726
Growth Before Covid	20	-,29	1,05	,1895	,30252
ROE Before Covid	20	,00	,26	,1320	,06955
Valid N (listwise)	20				

Based on Table 2, descriptive statistics before the COVID-19 pandemic showed that the liquidity ratio interpreted in the current ratio had a minimum value of 0.99, a maximum value of 5.95, an average value of 2.69 and a standard deviation value of 1.43. The profitability ratio measured by net profit margin has a minimum value of 0.00, a maximum value of 0.26, an average value of 0.08 and a standard deviation value of 0.06. The leverage ratio depicted in the debt to equity ratio shows a minimum value of 0.15, a maximum value of 4.23, an average value of 1.17 and a standard deviation value of 1.20. The ratio of activities assessed through fixed asset turnover has a minimum value of 0.85, a maximum value of 24.01, an average value of 4.93 and a standard deviation value of 6.50. The size of the company, as measured through the asset logarithm, shows a minimum value of 15.02, a maximum value of 30.64, an average value of 23.71 and a standard deviation value of 4.66. The company's growth measured using asset growth has a minimum value of -0.29, a maximum value of 1.05, an average value of 0.18 and a standard deviation value of 0.30. The analysis interpreted in the return on equity has a minimum value of 0.00, a maximum value of 0.26, an average value of 0.13 and a standard deviation value of 0.06.

Table 3. Descriptive Statistics During Covid-19

Description	N	Min	Max	Mean	Std. Deviation
CR Before Covid	20	,90	4,45	2,4430	1,20562
NPM Before Covid	20	,00	,31	,0885	,08119
DER Before Covid	20	,17	4,09	1,1635	1,30892
FAT Before Covid	20	,87	21,96	4,4840	5,71457
Size Before Covid	20	15,16	30,88	23,860	4,74951
Growth Before Covid	20	-,24	2,53	,1635	,56535
ROE Before Covid	20	,00	,36	,1240	,09544
Valid N (listwise)	20				

Table 3 of the descriptive statistical results during the covid-19 pandemic shows that the liquidity ratio measured through the current ratio has a minimum value of 0.90, a maximum value of 4.45, a mean value of 2.44 and a standard deviation value of 1.20. The profitability ratio interpreted in net profit margin has a minimum value of 0.00, a maximum value of 0.31, a mean value of 0.08 and a standard deviation value of 0.08. The leverage ratio measured through the debt to equity ratio has a minimum value of 0.17, a maximum value of 4.09, a mean value of 1.16 and a standard deviation value of 1.30. The activity ratio measured through fixed asset turnover has a minimum value of 0.87, a maximum value of 21.96, a mean value of 4.48 and a standard deviation value of 5.71. The size of the company as measured by the logarithm of assets has a minimum value of 15.16, a maximum value of 30.88, a mean value of 23.86 and a standard deviation value of 4.74. The company's growth as measured by the growth of the company's assets has a minimum value of -0.24, a maximum value of 2.53, a mean value of 0.16 and a standard deviation value of 0.56. The analysis measured by return on equity has a minimum value of 0.00, a maximum value of 0.36, a mean value of 0.12 and a standard deviation value of 0.09.

Normality test is a test carried out with the aim of measuring the distribution of data in a group of data or variables, to find out whether the distribution of data is distributed normally or not. The results of the normality test in this study are as follows:

Table 4. Tests of Normality.

Descriptions	Shapiro-Wilk		
	Statistic	df	Sig.
CR Before Covid	,899	15	,093
CR During Covid	,926	15	,239
NPM Before Covid	,925	15	,232
NPM During Covid	,883	15	,053
DER Before Covid	,931	15	,284
DER During Covid	,932	15	,290
FAT Before Covid	,959	15	,682
FAT During Covid	,896	15	,082
Size Before Covid	,894	15	,077
Size During Covid	,902	15	,101

Growth Before Covid	,935	15	,319
Growth during Covid	,957	15	,646
ROE Before Covid	,926	15	,235
ROE During Covid	,908	15	,126

Table 4 shows the results of testing the normality of the company's sample data using the Shapiro wilk test due to the relatively small sample size. In testing data normality, data transformation is carried out on part of the data so that it is distributed normally. In testing the normality of the data with the Shapiro test wilk showed that the variable liquidity ratio measured by current ratio, profitability ratio measured by net profit margin, leverage ratio measured by debt to equity ratio, activity ratio measured by fixed asset turnover, company size measured by company size logarithm, company growth measured through the growth of company assets, analisis dupont as measured through return on equity before and during covid-19 is normally distributed due to a significance value of more than 0.05.

Paired sample t test is a test method to answer hypotheses that have been determined in the study. The results of the paired test sample t test are presented in the following table:

Table 5. Paired Samples Test.

Description	t	df	Sig. (2-tailed)	Result
CR Before - CR During Covid	1,369	19	,187	Insignificant
NPM Before - NPM During Covid	-18,016	17	,000	Significant
DER Before - DER During Covid	,373	19	,713	Insignificant
FAT Before - FAT During Covid	-,289	19	,776	Insignificant
Size Before - Size During Covid	-1,845	19	,081	Insignificant
Growth Before - Growth During Covid	-7,323	16	,000	Significant
ROE Before - ROE During Covid	,551	19	,588	Insignificant

Based on the results of the paired samples test that has been carried out, the following can be explained:

- a. Liquidity ratio before and during the covid-19 pandemic
 In the paired samples test, the t value was 1.369 and the df value was 19 with a significance value of 0.187. The significance level of 0.187 is greater than 0.05, hence the hypothesis is rejected, which means that the liquidity ratio measured through the current ratio has no significant effect before and during the covid-19 pandemic.
- b. Profitability ratio before and due to the COVID-19 pandemic
 In the paired samples test, the t value was -18.016 and the df value was 17 with a significance value of

0.000. The significance level of 0.000 is smaller than 0.05, hence the hypothesis is accepted, which means that the profitability ratio measured through net profit margin had a significant effect before and during the covid-19 pandemic.

- c. Leverage ratio before and during the covid-19 pandemic.
 In the paired samples test, the t value was 0.373 and the df value was 19 with a significance value of 0.713. The significance level of 0.713 is greater than 0.05, hence the hypothesis is rejected, which means that the leverage ratio measured through the debt to equity ratio had no significant effect before and during the covid-19 pandemic.
- d. Ratio of activities before and during the covid-19 pandemic
 In the paired samples test, the t value was -0.289 and the df value was 19 with a significance value of 0.776. The significance level of 0.776 is greater than 0.05, hence the hypothesis is rejected, which means that the activity ratio measured through fixed asset turnover did not have a significant effect before and during the covid-19 pandemic.
- e. Company size before and during the covid-19 pandemic.
 In the paired samples test, the t value was -1.845 and the df value was 19 with a significance value of 0.081. The significance level of 0.081 is greater than 0.05, hence the hypothesis is rejected, which means the size of the company measured through the asset logarithm did not have a significant effect before and during the covid-19 pandemic.
- f. Company growth before and during the covid-19 pandemic
 In the paired samples test, the t value was -7.323 and the df value was 16 with a significance value of 0.000. The significance level of 0.000 is less than 0.05, hence the hypothesis is accepted, which means that the growth of the company as measured through the growth of the company's assets had a significant effect before and during the covid-19 pandemic.
- g. Dupont analysis before and during the covid-19 pandemic
 In the paired samples test, the t value was 0.551 and the df value was 19 with a significance value of 0.588. The significance level of 0.588 is greater than 0.05, hence the hypothesis is rejected, which means that the analysis measured through return on equity had no significant effect before and during the covid-19 pandemic.

5 Discussion

The results of descriptive statistics show that the average liquidity ratio that was interpreted with the current ratio before the pandemic was 2.69 while during the pandemic the average current ratio was 2.44. The higher the current ratio, the better the company's performance in managing its short-term obligations. This shows that the current ratio of pharmaceutical companies before the COVID-19 pandemic was better than during the covid-

19 pandemic. Based on the results of the study with a paired sample t-test, it shows that the liquidity ratio has insignificant differences before and during the Covid-19 pandemic in pharmaceutical companies. The results of this study are in line with previous research conducted by Sullivan and Widodoatmodjo (2021) which found that liquidity ratios had insignificant differences before and during covid-19.

The average value of the profitability ratio measured using net profit margin during the pandemic was 0.0885 while the average value before the pandemic was 0.0860. The higher the net profit margin value of a pharmaceutical company, the better the company will make a profit. In this regard, pharmaceutical companies during the covid-19 pandemic are more productive compared to before the covid-19 pandemic. Paired sample t-test tests showed that there were significant differences in profitability ratios before and during the covid-19 pandemic. This result is in line with research conducted by Fajriyanti and Wiyarni (2022) which found that profitability ratios in pharmaceutical companies showed significant results during the pandemic.

The mean value of the leverage ratio as measured by the debt to equity ratio during the pandemic was 1.16 while the pre-pandemic mean was 1.17. The smaller the value of the pharmaceutical company's debt to equity ratio, the better the company will manage its liabilities. These results show that pharmaceutical companies during the pandemic are better than before the pandemic in managing company obligations. The results of the paired sample t-test showed that there was an insignificant difference in leverage ratio before and during the covid-19 pandemic. This is in line with previous research by Ediningsih and Satmoko (2021) which stated that there was no difference in the debt ratio before and during the pandemic.

The average activity ratio as measured by fixed asset turnover before the pandemic was 4.93 while during the pandemic it was 4.48. The higher the value of fixed asset turnover, the more effective the fixed assets used in making a profit. These results show that the fixed asset turnover of pharmaceutical companies before the pandemic was better than during the covid-19 pandemic. The results of the paired sample t-test showed that there was an insignificant difference in activity ratio before and during the covid-19 pandemic. This result is in line with research conducted by Ediningsih and Satmoko (2021) which stated that there were no significant differences in asset turnover before and during the pandemic.

The average value of company size measured by asset logarithms during the pandemic was 23.86 while the pre-pandemic average was 23.71. The higher the value of the company size, the greater the size of the company's assets. These results show that the size of pharmaceutical companies' assets during the pandemic is larger, compared to before the pandemic. The results of the paired sample t-test showed that the size of the company had insignificant differences before and during the pandemic. In increasing the size of pharmaceutical companies in Indonesia must contribute to the creation

of quality products that are beneficial to the health sector [20].

The mean value of asset growth before the pandemic showed a value of 0.18 and asset growth during the pandemic of 0.16. The greater the value of asset growth, the greater the growth of pharmaceutical companies. These results show that the growth of pharmaceutical companies' assets before the pandemic was better than the conditions during the pandemic. The test results show that the growth of pharmaceutical companies in Indonesia has significant differences before and during the covid-19 pandemic. This result supports the research of Wijayanto and Seno (2021), which states that there are significant differences in pharmaceutical companies before and during the COVID-19 pandemic.

The mean of the dupont analysis as measured by the return on equity before the pandemic was 0.13 and during the pandemic was 0.12. The greater the value of the return on equity, the better the company manages the capital provided by investors. These results show that pharmaceutical companies before the pandemic were better at managing their capital than during the covid-19 pandemic. The results of the tests conducted showed that the return on equity had insignificant differences before and during the covid-19 pandemic. This finding is in accordance with research conducted by Ediningsih and Satmoko (2021) and Limbong (2022).

6 Conclusion

Based on the results of tests and discussions that have been carried out as a whole, it is concluded that financial performance is measured through liquidity ratios, profitability ratios, leverage ratios, activity ratios, company size, company growth, and dupont analysis. There are significant differences in the profitability ratios and growth of pharmaceutical companies in Indonesia before and during the covid-19 pandemic. Meanwhile, the liquidity ratio, leverage ratio, activity ratio, company size and dupont analysis showed insignificant differences before and during the covid-19 pandemic in Indonesia.

The suggestion that the author can give is that although there has not been a significant impact before and during the pandemic in general, pharmaceutical companies should focus more on developing quality and useful products. Future researchers can use financial performance measurements and more observation periods, so as to get more comprehensive results. Further research can also be carried out on other sector companies, because the COVID-19 pandemic has an impact on all companies in the world.

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