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Comprative Analysis of Profitability Before and During The New Normal During Covid-19 (Case Study at PT OSATEX 2)

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Abstract

The pandemic caused by the corona virus or what is often referred to as Covid-19 has a very big impact on Indonesia and even the whole world. Various aspects were affected including trade. The drastic decline in business profits caused by Covid-19 is not even a few businesses that have gone out of business. One of the affected businesses is PT OSATEX 2. This study aims to determine the difference in profitability in PT OSATEX 2 Company before and during the New Normal during the Covid-19 period. This research uses quantitative and qualitative types of research with the calculation of profitability ratios. The profitability ratios used are Return on Assets (ROA), Return on Equity (ROE), Net Profit Margin (NPM) and Gross Profit Margin (GPM). The data collection technique in this study is directly by analyzing the financial statements of the PT OSATEX 2 company during the period March 2020 – December 2021. The data analysis methods used are the Wilcoxon Non Parametik test and the Paired sample t-test with the help of Microsoft Office Excel 2019 and IBM SPSS. The result of the study was that there were differences in the value of Return on Assets (ROA) before and during the New Normal during the Covid-19 period, although there was no difference in the value of Return on Equity (ROE), Net Profit Margin (NPM) and Gross Profit Margin (GPM) before and during the New Normal during the Covid-19 period. There is a decrease in the ROA and ROE value indicating that the company PT OSATEX 2 has experienced negative developments while for NPM and GPM the company PT OSATEX 2 has increased, indicating that the company is experiencing positive developments with the New Normal situation.

Keywords: Covid-19, Profitability Ratio, ROA, ROE, NPM, and GPM

1. Introduction

The pandemic caused by the Covid-19 virus has impacted various aspects such as education, government and especially trade. Many businesses have suffered losses and even stopped. In a previous study conducted by Nasution (2018), namely analyzing liquidity ratios and profitability ratios to measure company performance at PT. Ikapharmindo Putramas. From the study, the profitability ratio calculation used is ROA, ROE and NPM to review the company's financial performance of PT. Ikapharmindo in order to provide a measure of the level of effectiveness of company management, In addition, liquidity ratio calculations are also carried out with the aim of reviewing the company's ability to meet obligations or pay short-term debt. A similar study was conducted by Viaranti (2021), which analyzed the comparison of stock profitability before and during the Covid-19 pandemic in companies. From this research, the calculation of profitability ratios was used, namely ROA, ROE, NPM, and GPM in addition, the study also used a paired sample t-test to see the development of financial statements regarding stock profits in companies before and during the Covid-19 pandemic. The next research conducted by Sari (2022), namely analyzing the difference in profitability levels before and after the new normal era study in the pharmaceutical sector on the Indonesia Stock Exchange. The study used profitability ratios, namely ROA, ROE, NPM and GPM, the tests used were paired sample t-test and non-parametic Wilcoxon Test to show that there were differences in ROA, ROE, NPM and GPM before and after the new normal era.

Based on the description above, the author is interested in conducting research to calculate profit comparisons in PT OSATEX 2 companies with the title "Comparative Analysis of Profitability Before and During New Normal in the Covid-19 Period (Case Study at PT OSATEX 2)" with the aim of reviewing its financial statements.

2. Literature Review

2.1 Income Statement

According to Slamet (2018) The income statement compares expenses to revenues over a period of time to show net profit or loss. Calculate net profit or loss, the entrepreneur records all receipts (both cash and credit sales) minus the cost of goods sold (initial inventory plus purchases minus ending inventory), so that the value of gross profit or loss is obtained. Then the gross profit is reduced again by operating costs, general costs, other costs, interest, taxes, so that finally the value of net profit or loss is obtained.

2.2 profitability ratio

Hidayah's profitability ratio (2021) "is a measure of a company's ability to generate profits".

1. *Gross Profit Margin* (GPM)

Gross Profit Margin is a ratio that shows the company's ability to earn profits that will cover fixed costs or operating costs, in order to find out the company's ability to produce efficiently. According to Meylinda (2022), the GPM formula can be written in equation (2.1)

$$GPM = \frac{net\ sales - HPP}{net\ sales} \tag{1}$$

2. *Net Profit Margin* (NPM)

Net Profit Margin is very important for a company, the higher the NPM, the greater and more efficient the company's profit in managing the company because it can reduce operational costs. According to Meylinda (2022), the NPM formula can be written in equation (2)

$$NPM = \frac{Net\ profit}{net\ sales} \tag{2}$$

3. Return on Assets (ROA)

Return on assets is a ratio that shows the return on the amount of assets employed in a company or a measure about management. Rojabiyah (2021) This ratio shows the productivity of all company funds, both borrowed and own capital". the ROA formula can be written in equation (3)

$$ROA = \frac{Net\ profit}{Total\ assets} \tag{3}$$

4. *Return on Equity* (ROE)

Return on Equity is a financial ratio that shows the amount of net profit obtained from the equity owned by the company, while equity is the capital owned by the company. According to Rojabiyah (2021), the ROE formula can be written on the equation (4)

$$ROE = \frac{Net\ profit}{Total\ equity} \tag{4}$$

2.3 Normal Distribution

According to Sudjana (2005) calculations can be completed using the standard normal distribution or standard normal distribution.

$$Z = \frac{X - \mu}{\sigma}, \tag{5}$$

2.4 Normality Test

In statistics, the Kolmogorov-Smirnov test is a non-parametric test of continuous equations, a one-dimensional probability distribution that can be used to compare samples with reference probability distributions (one-sample K-S test), or to compare two samples (two-sample K-S test). According to Quraysh (2020) the Kolmogorov-Smirnov test was carried out by comparing D_hit and D_tabel using the equation (6)

$$D_{hitung} = \text{maks}|F_0(x) - S_n(x)| \tag{6}$$

Information:

$F_0(x)$: Theoretical cumulative frequency distribution (standard normal X).

$S_n(x)$: Cumulative frequency distribution of observational data.

2.5 Paired Sample T-Test

The paired sample t-test is part of parametic statistics, this test is carried out if the research data is normally distributed. According to Montolalu (2018) the formula for the paired sample t-test using the equation (7).

$$t_{count} = \frac{\overline{D}}{\frac{SD}{\sqrt{n}}} \tag{7}$$

$$SD = \sqrt{var}, \tag{8}$$

$$var\left(s^2\right) = \frac{1}{n-1}\sum_{i=1}^{n}(x_i - \bar{x})^2, \tag{9}$$

Where:

t_{hit} : the value of t is calculated.
$\overline{D}$: mean deviation (difference between sample before and after).
SD : standard deviation from $\overline{D}$ (difference in sample before and after).
n : number of samples.
By test criteria:

1) If $t_{count} > t_{\alpha;(n-1)}$, it means that there is a difference.
2) If $t_{count} \leq t_{\alpha;(n-1)}$, it means that there is no difference.

2.6 Wilcoxon Non Parametic

The Wilcoxon test is a two-sample paired testing technique. This Wilcoxon test can be applied if the assumptions on the paired t test are not met, namely to test the difference in paired samples if they do not have a normal distribution. Wilcoxon test steps according to Sudjana (2005):

a) Calculate the difference between the value of the profitability ratio before the New Normal (X_i) and the profitability ratio before the New Normal (Y_i)
b) Then the calculation ($X_i - Y_i$) becomes $|X_i - Y_i|$, the value of the calculation result $|X_i - Y_i|$ Assigned a sequence number or rank 1 from the smallest until finally the absolute price of the largest is rated N. If there is a difference in the absolute price of the same, the average is taken for the ranking.
c) For each rank, give positive and negative signs judging from the results of the previous calculation ($X_i - Y_i$).
d) Count the number of ratings marked positive and negative
e) After that, take the smallest absolute price amount or what is called W_{count}.
f) Finally, compare the value of W_{count} with W_{table}.

The test criteria for the non-parametic Wilcoxon test are as follows:

a) If $W_{count} > W_{table}$ then H_0 accepted dan H_1 rejected.
b) If $W_{count} \leq W_{table}$ then H_0 rejected dan H_1 accepted.

3. Materials and Methods (TN Roman 12pt)

3.1 Materials

The object of this research was conducted at the company PT OSATEX 2 located on Jl. Babakan Loa Rt 03 Rw 01 Loa Village, Paseh District, Bandung Regency. PT OSATEX 2 is a company that produces woven sarongs, which has been established since 2008. The independent variable in this study is the calculation of profitability ratio. The profitability ratios used are return on assets (ROA), return on equity (ROE), net profit margin (NPM) and gross profit margin (GPM). The source of data in this study is data on financial statements in March 2020 – December 2021 at PT OSATEX 2. Data collection in this study was carried out directly. This study used a static descriptive method, with data analysis techniques using the Wilcoxon Non Parametic test carried out if the research data was not normally distributed and the Paired Sample Test if the research data was normally distributed.

3.2 Methods

Steps in the study:

1. The first step to start this research is to process PT OSATEX 2 financial statement data into income financial statements and balance sheets referring to subchapter 2.1 and Darmawan's book (2020).

2. After that, the profitability ratio is calculated, namely the value of ROA, ROE, NPM and GPM with two different conditions before the New Normal in March 2020 – January 2021 and during the New Normal in February 2021 – December 2021 referring to subchapter 2.2.
3. Then test the data with a normality test, the normality test used is the Kolmogorov-Smirnov test. The Kolmogorov-Smirnov test was conducted by comparing D_{hit} and D_{tabel} referring to subchapter 2.3 and subchapter 2.4.

   Kolmogorov-Smirnov test hypothesis:

   H_0: Normal distributed sample data

   H_1: The sample data is not normally distributed
4. After that, do another test:
   a. Paired Sample T-Test

Conducted when the research data is normally distributed. The most common feature of paired cases is that one person (study subject) receives two different treatments referred to subsection 2.5.

Paired sample t-test hypothesis:

H_0 : There is no difference in the value of the profitability ratio at PT OSATEX 2 before and during the New Normal during the Covid-19 period.

H_1: There are differences in the value of profitability ratios at PT OSATEX 2 before and during the New Normal during the Covid-19 period.

   b. Wilcoxon Non Parametic

Conducted when the research data is not normally distributed. The subjects measured in this test were in the same way, but given two types of treatment before and after. sulking in subchapter 2.6

Non-Parametic Wilcoxon Test Hypothesis:

H_0: there is no difference in the value of the profitability ratio before and during the New Normal during the Covid-19 period

H_1: there are differences in the value of profitability ratios before and during the New Normal during the Covid-19 period

5. After testing then provide conclusions for the ROA, ROE, NPM and GPM values before the New Normal and New Normal and if the results of the profitability ratio comparison are not different, give advice to PT OSATEX 2.

4 Results and Discussion

4.1 GPM and NPM calculation

The income statement of PT OSATEX 2 during March 2020 with the presentation of weekly financial data is presented in Table 1.

Table 1. Profit and Loss Report of March 2020

PT OSATEX 2				
March 2020 (in IDR)				
	I	II	III	IV
Profit				
Net Profit	109,840,000	140,690,000	93,105,000	113,250,000
Cost				
Cost of Goods Sold	50,400,394	57,268,288	26,335,401	55,708,634
Cost of Payroll	18,505,000	20,687,000	16,664,800	18,505,000
Cost of Electricity	1,125,000	1,125,000	1,125,000	1,125,000
Total Cost	70,030,394	79,080,288	44,125,201	75,338,634
Profit before Tax	39,809,606	61,609,712	48,979,799	37,911,366
Tax	4,976.20075	7,701.214	6,122.474875	4,738.92075
Net Profit	39804630	61,602,011	48,973,677	37,906,627

It can be seen in Table 4.1 that after the calculation of PT OSATEX 2's financial data processing, there was an increase in weeks 2 and 3 of the net profit listed in columns II and III. The company experienced a decrease in profit in week 4 (column IV) can be seen in column IV. Supposedly in March was sales in peak times because it was approaching Ramadan, but with the entry of Covid-19 PT OSATEX 2 experienced a decrease in profits.

1. Gross Profit Margin

GPM calculation uses the formula in equation (1). The processed data is presented in Table 1 column I with the data used are net sales and cost of goods sold.

Gross Profit Margin in week 1:

$$\text{GPM} = \frac{109.840000 - 50400394}{109840000} = \frac{59439606}{109840000} = 0.5411 = 54.41\%$$

2. Net Profit Margin

The NPM calculation uses the formula in equation (2). The processed data is presented in Table 1 column I with the data used are net sales and net profit.

Net Profit Margin in week 1:

$$\text{NPM} = \frac{39804630}{109840000} = 0.3624 = 36.24\%$$

4.2 ROA and ROE calculation

The asset balance sheet and equity balance sheet of PT OSATEX 2 during March 2020 with the presentation of weekly financial data are presented in Table 2 and Table 3. The presentation of data refers to Darmawan's book (2020).

Table 2. Asset Balance Report of March 2020

LAPORAN NERACA PT OSATEX 2				
	MARET 2020 (dalam Rupiah)			
ASET	I	II	III	IV
ASET LANCAR				
KAS	2.000.000	2.000.000	2.000.000	2.000.000
Bank BCA	7.000.000	6.500.000	6.250.000	6.250.000
Piutang Usaha	3.000.000	3.000.000	2.000.000	3.500.000
Persediaan Barang	50400394	56539128	29976580	57826150
Beban Dibayar Dimuka	500.000	450.000	250.000	250.000
Jumlah Aset Lancar	62.900.394	68.489.128	40.476.580	69.826.150
ASET TIDAK LANCAR				
Aktiva Tetap				
Tanah	1.050.000.000	1.050.000.000	1.050.000.000	1.050.000.000
Bangunan	954.000.000	954.000.000	954.000.000	954.000.000
Mesin dan Peralatan	379.000.000	379.000.000	379.000.000	379.000.000
Inventaris Kantor	250.000.000	250.000.000	250.000.000	250.000.000
Jumlah Aktiva Tetap	2.633.000.000	2.633.000.000	2.633.000.000	2.633.000.000
AKUMULASI PENYUSUTAN 3%				
Bangunan	-28620000	-28620000	-28620000	-28620000
Mesin dan Peralatan	-11370000	-11370000	-11370000	-11370000
Inventaris Kantor	-7500000	-7500000	-7500000	-7500000
Jumlah Akumulasi Penyusutan	-47490000	-47490000	-47490000	-47490000
AKTIVA TIDAK BERWUJUD				
Design dan Merk	300.000.000	300.000.000	300.000.000	300.000.000
TOTAL ASET	2.948.410.394	2.953.999.128	2.925.986.580	2.955.336.150

Table 3. Equity Balance Sheet Report of March 2020

LAPORAN NERACA PT OSATEX 2				
	MARET 2020 (dalam Rupiah)			
KEWAJIBAN DAN EKUITAS	I	II	III	IV
KEWAJIBAN LANCAR				
Hutang Bank	800.000.000	800.000.000	800.000.000	800.000.000
Hutang Usaha	625.000	625.000	625.000	625.000
Jumlah Kewajiban Lancar	800.625.000	800.625.000	800.625.000	800.625.000
KEWAJIBAN JANGKA PANJANG				
Hutang Bank Jangka Panjang	896.000.000	896.000.000	896.000.000	896.000.000
EKUITAS				
Modal	12.988.980	12.988.980	12.988.980	12.988.980
Laba Ditahan	53485890	56539128	29976580	57826150
Laba Tahun Berjalan	39.804.630	61.602.011	48.973.677	37.906.627
Jumlah Modal	106.279.500	131.130.119	91.939.237	108.721.757
TOTAL KEWAJIBAN DAN EKUITAS	1.802.904.500	1.827.755.119	1.788.564.237	1.805.346.757

Shown in Table 3, the amount of capital or equity decreased in week 3 (column III). This is influenced by retained earnings (stock of goods) and current year profit obtained by the company PT OSATEX 2.

1. Return on assets

The ROA calculation uses the formula in the equation (3). The processed data is presented in Table 2 column I with the data used is net profit and total assets.

So that it is obtained

$$\text{ROA} = \frac{39804630}{2948410394} = 0.0135 = 1.35\%$$

2. Return on equity

As for calculating ROE, it can be seen from the equity balance report in Table 3. Calculates the ROE value using the formula (4).

So that it is obtained

$$\text{ROE} = \frac{39804630}{106279500} = 0.3745 = 37.45\%$$

The same calculation was carried out until December 2021 to find the value of GPM, NPM ROA and ROE. After that, do a normality test.

4.3 Normality Test

The normality test used is Smirnov's kolomogorv normality test. The calculation is carried out to test the normality of the ROA value before the New Normal, the calculation refers to subchapter 2.4 Normality TestThe calculation is carried out with the help of Microsoft Excel 2019 listed in Table 4.

Table 4. ROA Normality Test Before New Normal

X	Fi	f_{kum}	$F_0(X)$	Z	$S_n(X)$	$F_0(X) - S_n(X)$	$\lvert F_0(X) - S_n(X)\rvert$
0	3	3	0,0682	-1,3190	0,0936	0,0254	0,0254
0,0012	1	4	0,0909	-1,1190	0,1316	0,0407	0,0407
0,0014	2	6	0,1364	-1,0856	0,1388	0,0025	0,0025
0,0019	2	8	0,1818	-1,0022	0,1581	-0,0237	0,0237
0,0021	1	9	0,2045	-0,9689	0,1663	-0,0382	0,0382
0,0028	1	10	0,2273	-0,8522	0,1971	-0,0302	0,0302
0,003	1	11	0,2500	-0,8189	0,2064	-0,0436	0,0436
0,0033	1	12	0,2727	-0,7688	0,2210	-0,0517	0,0517
0,0041	1	13	0,2955	-0,6355	0,2626	-0,0329	0,0329
0,0042	1	14	0,3182	-0,6188	0,2680	-0,0502	0,0502
0,0044	1	15	0,3409	-0,5854	0,2791	-0,0618	0,0618
0,0047	1	16	0,3636	-0,5354	0,2962	-0,0675	0,0675
0,0054	1	17	0,3864	-0,4187	0,3377	-0,0486	0,0486
0,0056	1	18	0,4091	-0,3854	0,3500	-0,0591	0,0591
0,0058	2	20	0,4545	-0,3520	0,3624	-0,0921	0,0921
0,0059	1	21	0,4773	-0,3353	0,3687	-0,1086	0,1086
0,0064	1	22	0,5000	-0,2520	0,4005	-0,0995	0,0995
0,0068	1	23	0,5227	-0,1853	0,4265	-0,0962	0,0962
0,0075	1	24	0,5455	-0,0686	0,4727	-0,0728	0,0728
0,0079	1	25	0,5682	-0,0019	0,4992	-0,0689	0,0689
0,0084	1	26	0,5909	0,0815	0,5325	-0,0584	0,0584
0,0086	1	27	0,6136	0,1148	0,5457	-0,0679	0,0679
0,0092	1	28	0,6364	0,2148	0,5851	-0,0513	0,0513
0,0094	1	29	0,6591	0,2482	0,5980	-0,0611	0,0611
0,0095	2	31	0,7045	0,2649	0,6044	-0,1001	0,1001
0,0102	1	32	0,7273	0,3816	0,6486	-0,0787	0,0787
0,0111	1	33	0,7500	0,5316	0,7025	-0,0475	0,0475
0,0113	1	34	0,7727	0,5650	0,7140	-0,0588	0,0588
0,0128	1	35	0,7955	0,8151	0,7925	-0,0030	0,0030
0,0135	1	36	0,8182	0,9318	0,8243	0,0061	0,0061
0,0145	1	37	0,8409	1,0985	0,8640	0,0231	0,0231
0,0149	1	38	0,8636	1,1652	0,8780	0,0144	0,0144
0,0151	2	40	0,9091	1,1985	0,8846	-0,0244	0,0244
0,0167	1	41	0,9318	1,4653	0,9286	-0,0032	0,0032
0,0172	1	42	0,9545	1,5487	0,9393	-0,0153	0,0153
0,0209	1	43	0,9773	2,1655	0,9848	0,0076	0,0076
0,0267	1	44	1,0000	3,1325	0,9991	-0,0009	0,0009
N	44						
$\sum X$	0,3481						

The result obtained because the $D_{count} < D_{table}$ tabel is 0.1086<0.198 then H_0 accepted, meaning that the ROA is normally distributed. using the same method, it is found that ROE, NPM are normally distributed, while GPM is not distributed, Normal. Therefore, ROA, ROE and NPM were tested using paired sample t-test and GPM using non-parametic Wilcoxon.

4.4 Paired sample t-test

The paired sample t-test was conducted to see the comparison of ROA values before the New Normal and During the New Normal during the Covid-19 period. Calculations performed with the help of IBM SPSS software are presented in Table 5.

Table 5. ROA Paired Sample T-Test Test with IBM SPSS

Paired Samples Test

		Paired Differences					t	df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Pair 1	ROA saat Covid-19 - ROA saat New Normal	23.04545	71.87908	10.83618	1.19222	44.89869	2.127	43	.039

The results of the SPSS calculation in Table 4,131 that the value of Sig. (2-tailed) is 0.039 means the value of Sig. (2-tailed) < 0.05 then it can be concluded that there is a significant difference between ROA during Covid-19 and ROA during New Normal.

4.5 Wilcoxon non-parametic

The non-parametic wilcoxon test was carried out to see the comparison of GPM values before the New Normal and During the New Normal during the Covid-19 period. Calculations performed with the help of IBM SPSS software are presented in Table 6.

Table 6. Uji Wilcoxon Non-Parametik GPM dengan IBM SPSS

Wilcoxon Signed Ranks Test

Ranks

		N	Mean Rank	Sum of Ranks
GPM Saat New Normal - GPM Saat Covid-19	Negative Ranks	19[a]	17.53	333.00
	Positive Ranks	24[b]	25.54	613.00
	Ties	1[c]		
	Total	44		

a. GPM Saat New Normal < GPM Saat Covid-19

b. GPM Saat New Normal > GPM Saat Covid-19

c. GPM Saat New Normal = GPM Saat Covid-19

Test Statistics[a]

	GPM Saat New Normal - GPM Saat Covid-19
Z	-1.690[b]
Asymp. Sig. (2-tailed)	.091

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

It can be concluded according to calculations through IBM SPSS software that Asymp. Sig. (2-tailed) ≥ 0.05, which is 0.091 > 0.05, meaning that there is no difference in GPM values before and during New Normal during the Covid-19 period.

4.6 Test Statistical data

The calculation of descriptive statistical tests is carried out to see how much the decrease and increase in the value of the profitability ratio before and during the New Normal. The processed data is presented in Table 4,135 using the help of Microsoft Excel 2019.

Tabel 7. Descriptive Statistics Test

Period	Mean ROA	Mean ROE	Mean NPM	Mean GPM
Before New Normal	0.0079	0.3181	0.3407	0.5679
New Normal	0.0057	0.2825	0.3452	0.6099
Gap Value	-0.0022	-0.0356	0.0045	0.042

The results of Table 7, namely:
1. There was a decrease in ROA during the New Normal of 0.0022 or 0.22%.
2. There was a decrease in ROE during the New Normal of 0.03563 or 3.56%.
3. There is an increase in NPM during the New Normal of 0.0045 or 0.45%.
4. There was an increase in GPM during the New Normal of 0.042 or 4.2%.

5 Conclussion

Based on the results of research using paired sample t-test and non-parametic Wilcoxon test shows that there is a difference in ROA before New Normal with New Normal. Although there is no difference in ROE, NPM and GPM before and during the New Normal during the Covid-19 period, PT OSATEX 2 is able to take advantage of the company's equity, net profit and gross profit in making profits. There was a decrease in return on assets (ROA) of 0.22% and return on equity (ROE) of 3.56%, indicating that PT OSATEX 2 experienced negative developments during the New Normal. Meanwhile, there was an increase in net profit margin (NPM) of 0.45% and gross profit margin (GPM) of 4.2%, indicating that PT OSATEX 2 experienced positive developments due to the New Normal situation.

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