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Analysis of Differences in Abnormal Returns and Corporate Profits During and After the Coronavirus Pandemic in Season 2019 (COVID-19) for Crude Palm Oil (CPO) Companies Listed on the Indonesia Stock Exchange

Azlina[1*], Niena Suryani[2], Agustina[3], Yudiansyah Saleh[4], Daudy Sukma[5]

[1,2,3,4] Finance Analyst, [5] Financial Management of Public Sector, Politeknik Kutaraja, Banda Aceh, Indonesia

Email Correspondent
azlinazto@gmail.com

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ABSTRACT

This study aims to analyze the Differences in Abnormal Returns and Company Profits During and After the 2019 Coronavirus Diseases (Covid-19) Pandemic in Crude Palm Oil (CPO) companies listed on the Indonesia Stock Exchange. The data source used in this study is secondary data, namely external data obtained from the official IDX website www.idx.co.id. The population in this study is 28 Crude Palm Oil companies listed on the IDX. In this study using a purposive sampling method or technique. The sample in this study is 19 Crude Palm Oil companies listed on the IDX and that have met the criteria. The data used for the study is balanced panel data, with the pandemic period taken from 2020-2021 and post-pandemic data taken from 2022-2023. The results of the study using the Wilcoxon signed rank test show that there are differences in abnormal returns during and after the Covid-19 pandemic in Crude Palm Oil companies and there are also differences in Company Profits during and after the Covid-19 pandemic.

INTRODUCTION

The COVID-19 outbreak reportedly first appeared in Wuhan City, China, at the end of 2019. The spread of this type of pandemic is increasingly widespread, and its spread occurs very quickly among humans, and from one country to another. The Coronavirus Disease 2019 (COVID-19) pandemic, as an extraordinary event in the world, has very quickly affected all sectors. Regulations that limit people's social interaction have had an extraordinary impact. Restrictions on direct interaction have resulted in the global economic sector, including Indonesia, feeling the impact. Many workers have been sent home or even laid off from their jobs, disrupted supply chains, resulting in market instability, which has had an impact on the economic situation, affecting the financial performance of many companies worldwide.

According to Palm Oil Agribusiness Strategic Policy Institute. (2025) Crude Palm Oil (CPO) companies play a strategic role in the global food, renewable energy, cosmetics, and oleochemical industries. Crude Palm Oil (CPO) is crude palm oil extracted from the mesocarp of the oil palm fruit through a sterilization and mechanical pressing process. Indonesia, as the world's largest producer, produces more than 47 million tons of CPO annually, with exports reaching $22 billion, meeting 58% of the world's vegetable oil needs. The Covid-19 pandemic has demanded many changes in the industrial sector, including the plantation industry, especially palm oil, because it is forced to be more effective and efficient to meet increasingly tight competition. (Theresia et al., 2025). The palm oil (CPO) industry must be able to face increasingly competitive market conditions. (News, 2023). Indonesia is one of the world's largest and most productive palm oil producers, attracting many countries to cooperate in exports and imports. Palm oil is Indonesia's third-largest foreign exchange earner. (Batubara, 2023). However, the COVID-19 pandemic has brought significant challenges to this industry, both operationally and in terms of company performance. Furthermore, the pandemic has impacted capital market performance, as reflected in changes in abnormal stock returns for CPO companies during and after the pandemic. Studies have shown significant differences in abnormal stock returns for crude palm oil companies in Indonesia during the New Normal announcement and lockdowns in export destination countries, indicating the market's response to policy changes and global conditions. (Kiroyan et al., 2022). These changes impact trading volumes and stock price spreads, reflecting market uncertainty and dynamics during times of crisis. (Kiroyan et al., 2022). (Salim, 2022) In his research, he said that the Covid-19 pandemic had an impact on stock investment and company profits due to a decline in financial performance.

Abnormal Return (abnormal return) means the difference between the actual return and the expected return on each security, called an abnormal return (Jogiyanto, 2017). Investors are encouraged to invest because the return can be obtained as a reward for investors for taking investment risks (Arridho, 2020). A positive abnormal return occurs when the actual return is greater than the expected return, and a negative abnormal return occurs when the actual return is smaller than the expected return (Ong & Ng, 2018). Abnormal Return is usually associated with certain events in a company's life or market conditions, such as mergers and acquisitions, stock splits, dividend announcements, unexpected events such as COVID-19, or even macroeconomic events that affect a company's stock value (Pintu.co.id). The Covid-19 pandemic, as a major and unexpected event, will result in a market reaction. This reaction can be seen in changes in stock prices, both increases and decreases. (Herlina & Ilyas, 2024).

Before the pandemic, company activities were running normally, which,

overall, could influence the company's revenue or profit. Net profit is income before taxes minus income taxes (Hery, 2018). Net profit provides users of financial statements with a summary of the company's total profit for the current period (including primary and secondary activities) and after income taxes are calculated (Hery, 2018). Another definition explains that net profit is profit minus recurring expenses to the company in a given period, including taxes (Kasmir, 2018). Based on the understanding of these experts, we can conclude that net profit is gross profit minus operating expenses such as interest and taxes. In terms of profitability, the Covid-19 pandemic, fluctuations in CPO prices, and government policies such as export bans also affect the profits of CPO companies. Crude Palm Oil is not solely utilized as cooking oil. It is also processed into mare than 120 derivative products.Furthermore, the increasing demand for exports has contributed to higher market demand and prices levels. Based on trading margin data, the price of cooking oil shows a slight increase when comparing the average prices before the covid-19 pandemic with those after the pandemic (Yudha, 2023) . Previous studies indicate that variables such as inventory turnover and sales growth significantly influence corporate profitability, while the implementation of good corporate governonce plays a crucial role in enabling companies to adapt to uncertain economic conditions. (Azzahra et al., 2023).

Based on the explanation above, the researcher is interested in conducting an Analysis of the Differences in Abnormal Returns and Company Profits During and After the Coronavirus Pandemic in Seasons 2019 (COVID-19) in Crude Palm Oil (CPO) Companies Listed on the Indonesia Stock Exchange. This study aims: (1) to analyze whether there are differences in the abnormal returns of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19; (2) to analyze whether there are differences in the profits of Crude Palm Oil (CPO) companies listed on the IDX during and after the Covid-19 pandemic. Thus, this study can provide a study of how extraordinary events affect the Indonesian capital market and company profits.

LITERATURE REVIEW

The confirmed COVID-19 cases in Indonesia are a sign of bad news, affecting the share prices of various companies, thus impacting their returns (Amin & Ramdhani, 2020).

An event study refers to an analysis of stock price movements in the capital market aimed at identifying whether investors obtain abnormal returns as a result of a particular event (Hartono, 2017: 643). The event under consideration is one that is publicly announced and contains information that may influence market participants. When such information is released, the market is expected to respon accordingly. This reaction can be observed through changes in stocks prices, reflected in returns or abnormal returns. Abnormal return represents the difference between actual return and expected return, which may occur either prior to official announcement due to information leakage or after the announcement is made. The difference can be either positive or negative. A positive abnormal return occurs when actual return exceeds the expected return, encouraging investors to trade around the announcement period in anticipation of earning returns above the normal level. Conversely, if the actual returns is lower than expected, the market response tends to be negative. (Herlina & Ilyas, 2024). Market reactions to information are crucial, as they lead to price adjustments that influence abnormal returns and shape investor perceptions in making investment decisions. Abnormal returns serve as an important indicator for evaluating prevailing market conditions. Information is considered valuable by investors when it generates a response in the form of trading activity in the capital market (Jogiyanto, 2020).

Investor confidence plays a significant role in the stock market, as investors may respond differently to announcements or disclosures depending on their perceptions and expectations.

Causes of Abnormal Returns

Abnormal returns typically occur around the announcement of an event. These events include mergers and acquisitions, dividend announcements, announcements of profitable companies, lawsuits, interest rate increases, and others. This phenomenon also frequently occurs around the market close (market close) on the Indonesia Stock Exchange (IDX), also due to a significant increase in trading activity. This occurs not only on the IDX but also on the NYSE. In addition to increased trading activity, there are also indications of order imbalances that have the potential to cause stronger price movements.

Factors influencing abnormal returns are as follows:

1. Profitability
   Good profitability results will provide positive information for investors and will influence abnormal stock returns, leading to positive abnormal returns.
2. Benchmark
   Benchmarks are benchmarks or benchmarks that influence abnormal returns.
3. Rights Issue
   A rights issue is the issuance of new shares, where these shares are prioritized for existing shareholders or investors. Simply put, a rights issue is the right granted to existing investors to purchase newly issued shares before the new shares are offered to other investors.

Abnormal Return (AR)

Abnormal returns occur for every type of stock, such as the difference between actual returns and expected returns, calculated daily. By calculating daily, within a given window period, the highest and lowest abnormal returns can be identified, and the strongest reaction can also be determined on which day each stock type experienced the strongest reaction. Information leaks that result in abnormal returns that occur before an event occurs will be visible in the abnormal return graph for each stock type.

Average Abnormal Return (AAR)

Average abnormal return is the average of the abnormal returns of all stock types being analyzed on a daily basis. Thus, there is an AAR for day 1, AAR for day 2, and so on. AAR can indicate very strong reactions, both positive and negative, across all stock types on a given day during the window period.

Abnormal Return Calculation

Abnormal return is calculating the difference between the actual return and the expected return, with the formula:

$$RTN_{iit} = R_{iit} - E[R_{iit}] \quad (1)$$

Keterangan:

RTN_{iit} : abnormal return for stock i at company t (or on day t)
R_{iit} : actual return for stock i on day t
$E[R_{iit}]$: expected return for stock i on day t

Measuring abnormal stock returns uses the following steps:

1) Finding the actual return.

This formula explains that the actual return is the difference between the current price and the previous price.

$$R_{iit} = (P_{iit} - P_{iit-1}) / P_{iit-1} \quad (2)$$

Keterangan :

R_{iit} : Actual return on stock i that occurred on day t

P_{iit-1} : Stock price i at time t-1

P_{iit} : Stock price i at time t

Average Abnormal Return (AAR), is the average of the abnormal return (the difference between the actual and expected return) of all shares analyzed during one or more periods, such as a certain event period. Calculating AAR (average abnormal return)

$$AAR_{iit} = \frac{\sum_{i=1}^{k} AR_{iit}}{k} \quad (3)$$

Keterangan:

AAR_{iit} : average abnormal return of security i on day t

$ARiii$: abnormal return for security i on day t

K : number of securities

2) Finding the Expected Return

To determine the expected return, you can use the Risk Market. The formula for calculating the expected return used in this study uses a market-adjusted model. The return used in the expected return is derived from the market index return at the time in question, this is called the Market-adjusted model (Nadia Sri Wahyuni and Wahyudi, 2023). The market return in this study is the Jakarta Composite Index (JCI). The expected return calculation formula used is:

$$RM_t = (CSPI_t - CSPI_{t-1}) / CSPI_{t-1} \quad (4)$$

Keterangan :

RM_t : Market return on day t

$CSPI_{t-1}$: Composite stock price index at time t-1

$CSPI_t$: Composite stock price index at time t

Profit Concept

Profit is the positive difference between the revenue earned by a company and the costs or expenses incurred in running its operations. Profit reflects a company's success in generating profits from its business activities during a specific period. In general, profit indicates how efficiently a company manages its resources to achieve its financial goals.

Previous Research

In the study (Aperlina & Sulistianingsih, 2022), the results of the one simple t-test showed no significant abnormal returns before and after the first COVID-19 announcement, and no significant trading volume activity before the first COVID-19 announcement. The one-sample Wilcoxon signed-rank test showed no significant trading volume activity after the first COVID-19 announcement. The paired sample t-test and the paired sample Wilcoxon signed-rank test both showed no difference in abnormal returns before and after the first COVID-19 announcement, nor was there a difference in trading volume activity before and after the first COVID-19 announcement in Indonesia.

Research results (Amin, 2022) showed that there was a difference in abnormal returns before and after the dividend announcement, as well as a difference in trading

volume activity before and after the dividend announcement at PT. Kalbe Farma.

In the study (Wahyuni & Wahyudi, 2023), the results obtained were that there was a difference in Abnormal Return between before and during the COVID-19 Omicron Variant, before the occurrence of the COVID-19 Omicron variant in Indonesia there was a significant Abnormal Return, there was no significant Abnormal Return during the COVID-19 Omicron variant.

Research (Azzahra et al., 2023) shows differences in stock prices and profits of transportation sub-sector companies before and during the COVID-19 pandemic in Indonesia. This is demonstrated by significance values of 0.002 <0.05 and 0.001 <0.05. However, of the 10 transportation sub-sector companies, there was no overall decrease; some companies experienced increases during the COVID-19 pandemic.

The results of the study (Napitupulu, 2019) show the results of multiple linear regression analysis with a significance level of 5% indicating that the PER variable partially has a significant positive effect on future profit predictions.

A study by Sahputra et al. (2022) found that a one-sample test showed significant negative abnormal returns at t+1 and t+2 after the announcement, indicating that the Covid-19 pandemic negatively impacted the company's operations. Meanwhile, the Wilcoxon Signed Rank test showed a significant difference between abnormal returns before and after the announcement of the first Covid-19 case in Indonesia. However, the Wilcoxon Signed Rank Test on Trading Volume Activity (TVA) showed no significant difference between before and after the first Covid-19 announcement in Indonesia.

In a study (Badzlina & Bintoro, 2023), the results of a significance level of <0.005 showed a significant difference in both abnormal returns and trading volume activity of pharmaceutical stocks in the 30-day period before and 30-day period after the announcement of the first Covid-19 case in Indonesia.

Conceptual Framework

The conceptual framework for this research is as follows:

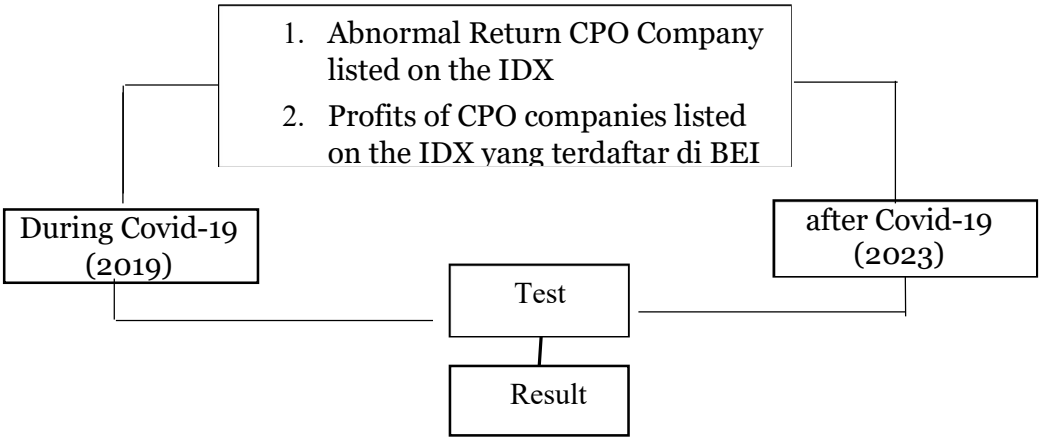

Figure 1 Thinking Framework

From the above framework of thought, the following hypotheses are obtained as temporary answers: (1) There is a difference in the abnormal returns of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19; (2) There is a difference in the profits of Crude Palm Oil (CPO) companies listed on the IDX during and after the Covid-19 pandemic.

METHODOLOGY

This study uses a comparative descriptive approach. Comparative descriptive research is a type of research that compares conditions over a specific period. This study compares two variables: Abnormal Return and Profit of Crude Palm Oil (CPO) Companies, during and after the announcement of the first COVID-19 case in Indonesia. The research method used is quantitative. Quantitative methods are used because the research requires data that can be directly measured or calculated, in the form of information or explanations expressed in numbers (Sugiono, 2010, 15). The research data in this study are returns and expected returns, which are used to calculate abnormal returns, and financial statements, which are used to calculate company profits.

The population used in this study was 28 crude palm oil companies listed on the Indonesia Stock Exchange. This study employed a purposive sampling method. Sampling was based on criteria determined by the researcher. The criteria used to determine the sample in this study are as follows:

1) Crude palm oil companies listed on the Indonesia Stock Exchange for the 2020-2023 period
2) Existing crude palm oil companies published their annual financial reports during and after the COVID-19 pandemic for the 2020-2023 period
3) Stock data during and after COVID-19 for the 2020-2023 period

Based on predetermined criteria, the sample companies in this study were 19 crude palm oil companies listed on the Indonesia Stock Exchange. The following is a list of samples that met the sampling criteria for this study:

Table 1. List of Research Object Companies

No	Company name	Stock Data				Published Financial Reports			
		2020	2021	2022	2023	2020	2021	2022	2023
1	PT Astra Agro Lestasri Tbk	✓	✓	✓	✓	✓	✓	✓	✓
2	PT Andira Agro Tbk	✓	✓	✓	✓	✓	✓	✓	✓
3	PT Eagle High Plantations Tbk	✓	✓	✓	✓	✓	✓	✓	✓
4	PT Cisadane Sawit Raya Tbk	✓	✓	✓	✓	✓	✓	✓	✓
5	PT Dharma Satya Nusantara Tbk	✓	✓	✓	✓	✓	✓	✓	✓
6	PT FAP Agri Tbk	✓	✓	✓	✓	✓	✓	✓	✓
7	PT Gozco Plantation Tbk	✓	✓	✓	✓	✓	✓	✓	✓
8	PT Jaya Agra Wattie Tbk	✓	✓	✓	✓	✓	✓	✓	✓
9	PT Perusahaan Perkebunan London Sumatra Indonesia Tbk	✓	✓	✓	✓	✓	✓	✓	✓
10	PT Mahkota Group Tbk	✓	✓	✓	✓	✓	✓	✓	✓
11	PT Pradiksi Gunatama Tbk	✓	✓	✓	✓	✓	✓	✓	✓

12	PT Pinago Utama Tbk	✓	✓	✓	✓	✓	✓	✓	✓
13	PT Palma Serasi Tbk	✓	✓	✓	✓	✓	✓	✓	✓
14	PT Sampoerna Agro Tbk	✓	✓	✓	✓	✓	✓	✓	✓
15	PT Salim Ivomas Pratama Tbk	✓	✓	✓	✓	✓	✓	✓	✓
16	PT Sawit Sumbermas Sarana Tbk	✓	✓	✓	✓	✓	✓	✓	✓
17	PT Povident Investasi Bersama Tbk	✓	✓	✓	✓	✓	✓	✓	✓
18	PT Triputra Agro persada Tbk	✓	✓	✓	✓	✓	✓	✓	✓
19	PT Sumber Tani Agung Resources Tbk	✓	✓	✓	✓	✓	✓	✓	✓

Source: Processed data (2025)

This study uses secondary data, namely data that refers to information obtained from existing data sources. The data source was obtained from the official website. IDX www.idx.go.id.

Panel data has several advantages compared to time series data and cross tabulation data, namely: 1) panel data estimation can show the heterogeneity in each unit, because panel data relates to each object in the cross tabulation data over time; 2) by combining time series data and cross tabulation data, panel data is more informative, has a low level of collinearity between changes, increases degrees of freedom and is more efficient; 3) panel data is suitable for describing the dynamics of change because it is observed repeatedly for each cross tabulation object; 4) panel data is able to detect and measure unobservable influences in time series data or cross tabulation data; 5) panel data can be used for studies with more complete models. Therefore, the data used in this study is balanced panel data because the research data is time series data from the same object.

Formula for calculating abnormal returns:

$$RTN_{iit} = R_{iit} - E[R_{iit}] \quad (4)$$

Keterangan:

RTN_{iit} : abnormal return for stock i at company t (or on day t)

R_{iit} : actual return for stock i on day t

$E[R_{iit}]$: expected return for stock i on day t

The calculation of abnormal stock returns uses the following steps:

1) Finding the actual return.
   This measurement is used to calculate the real return of an investment or portfolio over a specific period. This return includes all changes in the investment's value, both decreases and increases.

This formula explains that the actual return is the difference between the current price relative to the previous price.

$$R_{iit} = (P_{iit} - P_{iit-1}) / P_{iit-1} \quad (5)$$

Description:

R_{iii} : Actual return on stock i that occurred on day t
P_{iii-1} : Stock price i at time t-1
P_{iii} : Stock price i at time t

2) Average Abnormal Return (AAR) is the average of the abnormal returns (the difference between actual and expected returns) of all stocks analyzed over one or more periods, such as the period of a specific event.
Calculating AAR (average abnormal return)

$$AAR_{iii} = \frac{\sum_{i=1}^{k} AR_{iii}}{k} \quad (6)$$

Keterangan:
AAR_{iii} : average abnormal return of security i on day t
$ARiii$: abnormal return for security i on day t
K : number of securities

This formula explains that the actual return is the difference between the current price relative to the previous price.

3) Calculating Expected Return (expected return)
To determine expected returns, you can use Market Risk. The formula for calculating expected returns used in this study uses a market-adjusted model. The return used in the expected return is derived from the market index return at the time in question; this is called the market-adjusted model. (Nadia Sri Wahyuni dan Wahyudi, 2023).
The market return used in this study is the Jakarta Composite Index (JCI). The expected return calculation formula used is:

$$RM_t = CSPI_t - CSPI_{t-1}) / CSPI_{t-1} \quad (7)$$

Keterangan :
RM_t : Market return on day t
$CSPI_{t-1}$: Composite stock price index at time t-1
$CSPI_t$: Composite stock price index at time t

Calculating Net Profit

Net profit is income before taxes minus income taxes (Hery, 2019). Net profit provides users of financial statements with a summary of the company's total profit for the current period (including primary and secondary activities) and after income taxes are calculated (Hery, 2019). Another definition explains that net profit is profit minus expenses owed to the company in a certain period, including taxes (Kasmir, 2018). Based on the understanding of these experts, we can conclude that net profit is gross profit minus operating expenses such as interest and taxes.

Net Profit = Profit Before Tax - Income Tax (8)

Data Analysis Methods

According to Ghozali (2018), the data analysis conducted in this study includes descriptive statistics, normality tests, and hypotheses. The tests were conducted using

SPPS 25 (Statistical Package for Social Science 25) software.

1) Descriptive Statistics

According to Ghozali (2018), descriptive statistics provide a description of data based on the average (mean), mode (mode), and standard deviation of each sample data. Furthermore, comparative descriptive statistics describe data to provide clearer and more easily understood information.

2) Normality Test

According to Ghozali (2018), the normality test is used to determine whether the data obtained and used are normally distributed. The researcher used the Kolmogorov-Smirnov Normality Test. The Kolmogorov-Smirnov test is a commonly used normality test because it is considered simpler and does not cause differences in perception. The criteria for the normality test are as follows:

- If the Asymp.Sig. (2-tailed) > 0.05, then the data is declared normally distributed.
- If the Asymp.Sig. (2-tailed) value is < 0.05, then the data is declared not normally distributed.

3) Hypothesis Testing

a) Paired Sample T-Test

According to Ghozali (2018), the paired simple t-test is a test of difference and paired samples. Paired samples are the same subjects all undergoing different treatments. This test model is used to analyze pre-post or during and after research models.

b) Wilcoxon Signed Ranks Difference Test

The Wilcoxon Signed Ranks Difference Test is used as an alternative to the Paired Sample T-Test if the data used as samples in this study are declared not normally distributed based on the results of the normality test.

Kolmogorov-Sminov or Asymp. Sig. (2-tailed) value is less than 0.05. According to Ghozali (2018), the Wilcoxon Signed Ranks difference test is used to evaluate a particular treatment in two observations, before and during the presence of a particular treatment.

Similar to the Paired Simple T-Test, this test also has a significance level of $\alpha = 5\%$, as follows:

- If the p-volume (in the sig. column) is $<\alpha = 0.05$, then Ho is rejected and Ha is accepted, indicating a difference in abnormal returns before and during the coronavirus pandemic.
- If the p-volume (in the sig. column) is $>\alpha = 0.05$, then Ho is accepted and Ha is rejected, indicating no difference in abnormal returns before and during the coronavirus pandemic.

The hypotheses used in this study are as follows:

Ho1 = There is no difference in the abnormal returns of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19.

H1 = There is a difference in the abnormal returns of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19.

Ho2 = There is no difference in the profits of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19.

H2 = There is a difference in the profits of Crude Palm Oil (CPO) companies listed on the IDX during and after Covid-19.

RESULTS AND DISCUSSION

Descriptive Statistical Analysis

Descriptive data on abnormal returns and company profits during and after the Covid-19 pandemic in crude palm oil companies can be seen in Table 2.

Table 2 Descriptive Research Data

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Upnormal Return Selama Covid-19	38	-11.67	41.80	2.9918	10.01781
Upnormal Return Setelah Covid-19	38	-.55	58.70	10.3321	14.91900
Laba Perusahaan Selama Covid-19	38	13547	4.E+11	5.57E+10	9.738E+10
Laba Perusahaan Setelah Covid-19	38	2141	8.E+11	7.91E+10	1.480E+11
Valid N (listwise)	38				

Source: Processed data (2025)

Based on the results of descriptive statistical analysis, it was found that the average abnormal return for companies during the Covid-19 pandemic was 2.9918 with a standard deviation of 10.0178. After the Covid-19 pandemic, the average abnormal return increased to 10.3321 with a standard deviation that also increased to 14.9190. This indicates that stock market performance generally improved after the pandemic. In terms of financial performance, the average company profit during the pandemic was recorded at IDR 55.70 billion, with a minimum value of IDR 13.55 million and a maximum of IDR 400 billion. After the pandemic, the average profit increased to around IDR 79.10 billion, with a maximum value reaching IDR 800 billion. However, this increase was also accompanied by an increase in the standard deviation from IDR 97.38 billion to IDR 148 billion, indicating a greater disparity in profits between companies. Overall, these findings indicate a post-Covid-19 economic recovery, both in terms of the stock market and corporate profits, albeit with a higher level of inequality.

Descriptive Data on Abnormal Returns and Corporate Profits During the Covid-19 Pandemic

Descriptive data on abnormal returns and company profits during Covid-19, with an average standard deviation for crude palm oil companies, can be seen in Table 3.

Table 3. Description of Abnormal Returns During Covid-19

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Upnormal Return Selama Covid-19	38	-11.67	41.80	2.9918	10.01781
Laba Perusahaan Selama Covid-19	38	13547	4.E+11	5.57E+10	9.738E+10
Valid N (listwise)	38				

Source: Processed data (2025)

Based on a descriptive analysis of 38 companies during the Covid-19 pandemic, the average upnormal return was 2.9918%, with a minimum value of -11.67% and a maximum of 41.80%, and a standard deviation of 10.01781. A positive average value indicates that there are generally abnormal profits despite market disruptions due to the pandemic. However, a negative minimum value and a relatively large standard deviation reflect significant differences in performance between companies. Meanwhile, for the company profit variable during Covid-19, the average profit obtained was approximately IDR 55.7 billion, with a minimum value of IDR 13,547 and a maximum of IDR 400 billion. The standard deviation of IDR 9.74 billion indicates a fairly high distribution or inequality of profits among companies, with some experiencing a significant decline in profits, while others continued to record large profits during the pandemic. Overall, this data shows that although companies continue to record positive profits and returns on average, the impact of the Covid-19 pandemic on financial performance and the stock market has been uneven.

Descriptive Data on Abnormal Returns and Corporate Profits After the Covid-19 Pandemic

Descriptive data on abnormal returns and company profits after Covid-19, with an average standard deviation for crude palm oil companies, can be seen in Table 4.

Table 4. Description of Abnormal Returns and Company Profits After the Covid-19 Pandemic

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Upnormal Return Setelah Covid-19	38	-.55	58.70	10.3321	14.91900
Laba Perusahaan Setelah Covid-19	38	2141	8.E+11	7.91E+10	1.480E+11
Valid N (listwise)	38				

Source: Processed data (2025)

Descriptive statistical analysis of 38 companies showed that the average abnormal return after Covid-19 was 10.3321%, with a minimum value of -0.55% and a maximum of 58.70%, and a standard deviation of 14.919. This relatively high average indicates that company stock performance generally improved after the pandemic, although the presence of a negative minimum value indicates that not all companies experienced improvement. The large standard deviation also suggests significant differences between companies in terms of abnormal returns.

Meanwhile, for the variable of company profits after Covid-19, the average was Rp79.10 billion, with a minimum value of Rp2,141 and a maximum of Rp800 billion. The very large standard deviation, at Rp148 billion, indicates significant disparity in profit gains between companies. This reflects that despite a general increase in profits after the pandemic, recovery was uneven across companies. Some companies successfully recovered and even recorded substantial profits, while others only achieved small profits.

Normality Test

A normality test is performed to determine whether the data distribution is normally distributed. If the research data is normally distributed, then a parametric statistical test can be performed. Conversely, if the data distribution is not normal, then a non-

parametric test can be performed. The normality test in this study used the Kolmogorov-Smirnov method, as seen in Table 5.

Table 5. Normality Test

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Upnormal Return Selama Covid-19	.326	38	.000	.590	38	.000
Upnormal Return Setelah Covid-19	.294	38	.000	.727	38	.000
Laba Perusahaan Selama Covid-19	.312	38	.000	.651	38	.000
Laba Perusahaan Setelah Covid-19	.313	38	.000	.598	38	.000

Source: Processed data (2025)

Based on the results of the normality test, the four variables analyzed—Upnormal Return During Covid-19, Upnormal Return After Covid-19, Corporate Profit During Covid-19, and Corporate Profit After Covid-19—are not normally distributed. This is indicated by significance values (Sig.) lower than 0.05 in both the Kolmogorov-Smirnov and Shapiro-Wilk tests for all variables. Because all variables are not normally distributed, further analysis involving this data should use a non-parametric test, the Wilcoxon test.

Hypothesis Testing Results

To test whether there are differences in abnormal returns and company profits during and after the Covid-19 pandemic, this study used the Wilcoxon signed-rank test. This test was used because the data obtained were found to be non-normally distributed, thus meeting the predetermined criteria. The results of this test, which address the previously formulated hypotheses, are shown in Table 6.

Table 6. Results of the Wilcoxon Signed Rank Test Abnormal Return

Ranks

		N	Mean Rank	Sum of Ranks
Upnormal Return Setelah Covid-19 - Upnormal Return Selama Covid-19	Negative Ranks	4[a]	3.25	13.00
	Positive Ranks	34[b]	21.41	728.00
	Ties	0[c]		
	Total	38		

a. Upnormal Return Setelah Covid-19 < Upnormal Return Selama Covid-19

b. Upnormal Return Setelah Covid-19 > Upnormal Return Selama Covid-19

c. Upnormal Return Setelah Covid-19 = Upnormal Return Selama Covid-19

Source: Processed data (2025)

Based on the Wilcoxon test results for the difference in upnormal returns before and after Covid-19, it was found that of the 38 companies analyzed, 34 companies (89.47%) experienced an increase in upnormal returns after the pandemic, while only 4

companies (10.53%) experienced a decrease, and no companies had the same upnormal return value between the two periods. The average rank for companies that experienced an increase was 21.41, significantly higher than the average rank for companies that experienced a decrease of 3.25. These results indicate a very strong tendency that companies' upnormal returns generally improved after the Covid-19 pandemic. This reflects the market's positive response to post-pandemic conditions, which has resulted in improved stock performance for the majority of companies.

Table 7. Statistical Test between Upnormal Returns During and After Covid-19

Test Statistics[a]

	Upnormal Return Setelah Covid-19 - Upnormal Return Selama Covid-19
Z	-5.185[b]
Asymp. Sig. (2-tailed)	.000

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Source: Processed data (2025)

The Wilcoxon Signed-Rank Test results show a Z statistic value of -5.185 with a significance value (Asymp. Sig. 2-tailed) of 0.000. Since this significance value is less than 0.05, it can be concluded that there is a statistically significant difference between upnormal returns during and after Covid-19. With a predominantly positive direction of change (as seen previously, 34 out of 38 companies experienced an increase), these results confirm the finding that companies' upnormal returns increased significantly after the Covid-19 pandemic. This means that, in general, companies' stock market performance improved post-pandemic, and this change was not caused by mere coincidence but was proven to be statistically significant.

Table 8. Results of the Wilcoxon Signed Rank Test of Company Profit

Ranks

		N	Mean Rank	Sum of Ranks
Laba Perusahaan Setelah Covid-19 - Laba Perusahaan Selama Covid-19	Negative Ranks	17[a]	17.65	300.00
	Positive Ranks	21[b]	21.00	441.00
	Ties	0[c]		
	Total	38		

a. Laba Perusahaan Setelah Covid-19 < Laba Perusahaan Selama Covid-19

b. Laba Perusahaan Setelah Covid-19 > Laba Perusahaan Selama Covid-19

c. Laba Perusahaan Setelah Covid-19 = Laba Perusahaan Selama Covid-19

Source: Processed data (2025)

The Wilcoxon Signed-Rank Test results for differences in company profits before and after Covid-19 showed that of the 38 companies analyzed, 21 experienced an increase in profits after the pandemic, while 17 experienced a decrease, and no

company had the same profit between the two periods. The mean rank for companies that experienced an increase was 21.00, while for companies that experienced a decrease it was 17.65. These findings indicate a generally positive trend in company profits after the Covid-19 pandemic, although some companies have not yet fully recovered. With more companies experiencing increased profits, there is a visible trend of economic recovery among companies post-pandemic, although not evenly across all sectors.

Table 9. Results of the Wilcoxon Signed Rank Test of Company Profit

Test Statistics[a]

	Laba Perusahaan Setelah Covid-19 - Laba Perusahaan Selama Covid-19
Z	-2.254[b]
Asymp. Sig. (2-tailed)	.024

a. Wilcoxon Signed Ranks Test

b. Based on negative ranks.

Source: Processed data (2025)

Based on the results of the Wilcoxon Signed-Rank Test, the Z statistic value was obtained = -2.254 with a significance value (Asymp. Sig. 2-tailed) of 0.024. Because this significance value is less than 0.05, it can be concluded that there is a statistically significant difference between company profits during and after Covid-19. This result supports the previous findings from the Ranks table, where the majority of companies (21 out of 38) experienced an increase in profits after the pandemic. Thus, this statistical test confirms that the increase in company profits after Covid-19 was not a coincidence but was statistically significant. This reflects that in general, the financial condition of companies improved in the post-pandemic period, although there were still a small number of companies that experienced a decline.

Discussion

Differences in Abnormal Returns During and After the Covid-19 Pandemic

Based on Table 7, the results of the Wilcoxon signed rank test conclude that with a significance value (Asymp. Sig. 2-tailed) of 0.000, this value is less than 0.05, it can be concluded that there is a statistically significant difference between upnormal returns during and after Covid-19. With the dominant direction of change being positive (as seen previously, 34 of 38 companies experienced an increase), these results confirm the finding that companies' upnormal returns increased significantly after the Covid-19 pandemic.

Differences in Company Profits during and after Covid-19

Based on Table 8, the results of the Wilcoxon signed rank test concluded with a significance value (Asymp. Sig. 2-tailed) of 0.024. Because this significance value is less than 0.05, it can be concluded that there is a statistically significant difference between company profits during and after Covid-19. This result supports the previous findings from the Ranks table, where the majority of companies (21 out of 38) experienced an increase in profits after the pandemic. This reflects that in general, the company's financial condition improved in the post-pandemic period, although a small number of companies still experienced a decline.

CONCLUSION

Based on the test results using the Wilcoxon signed rank test, it was concluded that there was a difference in abnormal returns during and after Covid-19 in crude palm oil companies. In general, the company's stock market performance improved after the pandemic, and these changes were not caused by mere coincidence but were proven to be significant (Asymp. Sig. 2-tailed) of 0.000 because the significant value was smaller than 0.05.

Based on the results of the Wilcoxon signed-rank test, it was concluded that the differences in company profits during and after COVID-19 for Crude Palm Oil companies reflect a general improvement in the financial condition of companies in the post-pandemic period. Although a small number of companies still experienced declines, this is evidenced by the significance value (Asymp, Sig. 2-tailed) of 0.024, which is less than 0.05. Therefore, it is concluded that there are differences in company profits during and after COVID-19.

Companies need to increase transparency and communication with investors to reduce market uncertainty that can impact abnormal returns. Clear and timely information regarding a company's performance and strategic actions during a crisis is crucial for maintaining investor confidence. This is also crucial for maintaining profit stability and avoiding a negative impact on abnormal returns.

Further research can add variables other than those already used by researchers related to differences in abnormal returns and company profits and add research objects to broader sectors.

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