

DIFFERENCES IN FIRM FINANCIAL PERFORMANCE BEFORE AND DURING THE COVID-19: A STUDY ON FNB SECTOR

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Abstract

Background: Covid-19 has had a major impact on the global economy, including in Indonesia. One of the most notable impacts has been felt by food and beverage firm. Indonesia government gives more attention for this sector due to its importance for public needs. This research is used to obtain the difference ROA ratio before and during Covid -19 period using statistical approach. This approach was chosen for finding is there a significant differences firm performance between before and during Covid-19 period.

Objective: This approach was chosen for finding is there a significant differences firm performance between before and during Covid -19 period and analyze the differences.

Research Methodology: Paired test approach for this research uses non-parametric Wilcoxon Ranks test by measuring return on assets (ROA). The population in this research were all firm operating in food an beverages sector from 2018-2021 which were listed on Indonesia for four consecutive years by classifying these four years in to before (2018-2019) and during Covid-19 (2020-2021).

Research Results: This research gained significantly different firm performance between before and during Covid-19. Wilcoxon Rank test performing this research gained a significant value $0.001 < 0.05$. This difference is because the firm's ROA level tends to decline and suffer losses, the effect of implementing Perlakuan Pembatasan Kegiatan Masyarakat (PPKM) which seeks to reduce transmission through community mobility.

Originality/Novelty of Research: This research provides a difference in firm financial performance with extended period data over two years before (2018-2019) and two years during Covid-19 (2020-2021).

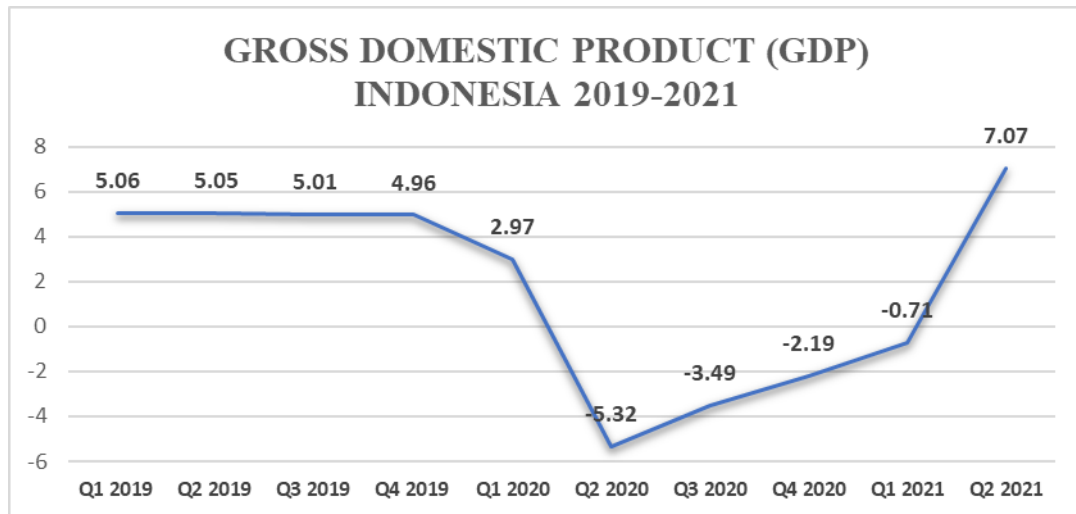
Key Words: Financial Performance; ROA; Covid-19; Wilcoxon Test

Introduction

Firm performace can be affected by micro and macro economics factors. These factors exist inside the firm and can be controlled by management. Macroeconomic factors exist outside the firm and can't be controlled by management (Egbunike & Okerekeoti, 2018). Align with this topic, Covid-19, as an external factor, has a significant impact on firm performance, especially in financial performance.

The emergence of the Covid-19 virus in society has led to changes in the order of life and relationships between people. According to the WHO, Covid-19 is caused by the SARS-CoV-2 which can spread through air, water, and physical interaction by human. This virus caused economic activities in society have become limited, and several processes of goods production, product distribution, and the goods marketing and services worldwide have been disrupted (Wely Putri Melati, 2023). According to the World

Bank, this pandemic has triggered the most severe economic crisis around the world in over a hundred years. This crisis has resulted in a significant rise in inequality. Developing countries need more time to overcome the economic decline brought about by this pandemic. In addition to having an impact on public health, the Covid-19 pandemic and restrictive policies in Indonesia have caused economic slowdown, a decline in public consumption, and the slowdown in several business sectors (Azizah & Rusdianto, 2023). Domestic data from the Badan Pusat Statistik (BPS) also show that there has been a significant impact cause of Covid-19 pandemic, namely a slowdown in economic growth, which fell from an average of 5.02 percent in 2019 to 2.97 percent in 2020. This was caused by several factors, such as the implementation of Pembatasan Sosial Berskala Besar (PSBB), the weakening of people's purchasing power, and massive layoffs as firms experienced losses during the pandemic (Akhmad, 2022).



Source: Badan pusat statistik (2021)

Figure 1. Gross Domestic Product Indonesia 2019-2021

The Covid-19 pandemic has significantly impacted various business sectors worldwide, catching countries off guard, including Indonesia. In Indonesia, this crisis has not only strained the public healthcare system but also deeply affected the economy. Particularly hard-hit are the transportation and tourism sectors, leading to GDP losses ranging from 30% to 50 (Malahayati et al., 2021). Azzahra et al. (2023) conducted a research that revealed a variation in the transportation firm's share and profits on the IDX before and during the Covid-19 pandemic.. The average firm in the transportation sub-sector experienced both share price declines and profit reductions. Purba et al. (2022) quantified tourism sector's downturn based on pandemic's impact and its repercussions on GDP. Around IDR 200.92 trillion is potential lost due to this pandemic crisis in 2020, with the tourism sector's contribution to GDP plummeting sharply by -

53.29%, to 1.16%. This regression mirrors the tourism climate of 2011, signifying a setback of a decade due to Covid-19. Additionally, Susilawati et al. (2020) observed that beyond transportation, tourism, trade, and health sectors, the household sector was profoundly affected as economic activities dwindled. Small and Medium Enterprises (MSMEs) and corporations were also significantly impacted, reverberating through the financial sector.

Based on the phenomenon of previous studies and surveys conducted by the Kementrian Ketenagakerjaan in collaboration with INDEF (Institute for Economic and Financial Development), the food and beverage industry experienced a decline in performance during the Covid-19 pandemic (Rahmad & Rudianto, 2023). Food and beverages sector is quite promising. The reason is, food is a main consumption and need. However, Covid-19 has also impacted on the food and beverage industry, especially restaurant. Mulia & Daryanto (2021) revealed differences in the financial performance of PT Map Boga Adi Perkasa Tbk (MAPB) and PT Sarimelati Kencana Tbk (PZZA). The results of his research show that the MAPB and PZZA financial performance have major differences before and after the Covid-19 spread in Indonesia.

Quoted by CNBC Indonesia, PSBB (Pembatasan Sosial Berskala Besar) program implemented since early April have left restaurants empty of visitors. Many restaurants are closed and not operating during the pandemic. However, there are also those that are still operating but only serve delivery orders without dine-in because they follow the applicable protocols. The protracted PSBB has resulted in an increasing number of restaurants suffering losses and collapse. Hariyadi Sukamdani as Chair of the Persatuan Hotel dan Resort Indonesia (PHRI) stated that just two months into the implementation of the PSBB regulations, the value of losses for restaurants in the country had already suffered losses of IDR 45 trillion. The idx.co page also noted that until the end of 2023, the food and beverages industry in Indonesia was under quite heavy pressure after the Covid-19 pandemic struck. The franchise restaurant famous for its burger menu, Carl's Jr Indonesia, has officially stopped operating. As of December 31, 2023, Carl's Jr restaurants owned by MahaDasha Group will no longer serve customers (Citradi, 2020).

Food and beverage firms face a decline in financial performance which affected by Covid-19 pandemic is crucial to research. One of the ways a firm's financial performance can be analyzed is the Return on Assets (ROA) is a ratio that represents the relationship between net profit and total assets, indicating the profit generated from the assets employed by the firm. In other words, ROA can shows how the firm can obtain profit from the assets used (Kasmir, 2016). ROA is an indicator that measures a firm's success in generating profits. Thus, a higher ROA indicates better firm performance, as it reflects a higher rate of return. In this research ROA calculation uses comparison between net income after tax to average total assets.

There is a gap in previous research regarding significant changes in firm financial performance before and during the Covid-19 pandemic. Multiple studies indicate that there are notable differences in firms' financial performance before and during the Covid-19 pandemic (Azzahra et al., 2023; Febriantika et al., 2021; Rahmad & Rudianto, 2023; Wijayanto & Seno, 2021). Some studies suggest that no substantial differences is found in firms' financial performance before and during this pandemic (Alisyah & Susilowati, 2022; Ayuni & Situmorang, 2022; Daryanto et al., 2021; Jauzaa & Hirawati, 2021). This research will fulfill the gap which provide sectoral firm financial performance (food and beverages firms) over two years before (2018-2019) and two years during this pandemic (2020-2021). Therefore, this research aims to test whether there are significant differences in the financial performance of food and beverage firms before and during Covid-19 pandemic.

Literature Review

Concerned with firm financial performance, the system theory explains that external factors affect a firm's performance (Cheong & Hoang, 2021). Nwachukwu (1988) defined system as a set of connected and reliant components organized in a way that forms a cohesive unit. Base on this definition, any factors, whether external or internal, can affect a system as a whole. According to Laszlo & Krippner (1998) systems theory provides a method for recognizing the connections between humans and the associated structures and processes within society and nature, focusing on a comprehensive and integrative examination of phenomena and events..

This research uses the Covid-19 pandemic, which emerged in early 2020, as a phenomenon that affected financial performance of firms. Covid-19 is a virus initially emerge by the SARS-CoV-2. The rapid spread of this virus has had an extraordinarily negative impact on all countries, affecting health, social welfare, and the economy. The government implemented applied pembatasan sosial berskala besar (PSBB) program to control virus spread. One of the most affected firm sector by this program was the food and beverage. IDX.co also recorded that by the end of 2023, the food and beverage industry in Indonesia continued to face significant pressure in the aftermath of the COVID-19 pandemic. This phenomenon aligns with systems theory, which explains the interaction between the external environment and corporate performance..

Financial performance is closely tied to profit achievement, as profit reflects management's capability to optimize primary operational sales and manage operating costs effectively. Return on Assets (ROA) is a key metric for evaluating financial performance in terms of profitability. ROA represents the ratio of profit generated during a specific period to the assets owned by the firm, illustrating the efficiency

of asset utilization in generating profits. It is important to note that having large assets does not automatically equate to high profits. Good profitability is demonstrated by the ability to generate substantial profits, either by leveraging large assets to produce significant returns or by achieving high profits with relatively modest assets. The ROA ratio is a valuable indicator for assessing this aspect of performance (Kusuma, 2021). So, ROA can measure how does a company manage its costs as efficiently as possible in order to produce maximum possible performance (Sutandar & Apriwenni, 2018).

Singh et al. (2023) define Return on Assets (ROA) as a tool to measure firm's operational efficiency in producing profits from its assets, excluding the impact of financing. The ROA calculation formula based on the formula(Ross et al., 2022) below:

$$ROA = \frac{Net\ Income}{Total\ Assets}$$

Many researchers have used Return on Asset (ROA) as their research object in many industry sectors. Singh et al. (2023) have discussed several Return on Assets definitions among 100 articles published between 2001 and 2021 in finance firms. Indeed, they also analyze different calculation models in each definition used. Kamruzzaman (2019) has measured financial factors on return on assets (ROA) which performed multi linear regression in pharmaceutical sector especially ACME Laboratories Ltd, a pharmaceutical firm listed in Dhaka Stock Exchange.

Based on existing data and several previous studies, a significant difference is found in firm profits before and during Covid-19 pandemic. Wijayanto & Seno (2021) researched firms in the Consumer Goods Industry sector listed on the IDX. Their results indicated a significant difference in financial performance before and during the Covid-19 pandemic. Their study aligns with the findings of Nurlaily & Nasution (2022) found a notable difference in ROA within the trade, services, and investment sectors listed on the IDX. Firms in the transportation sector also faced changes in financial performance caused by this pandemic (Azzahra et al., 2023). More over, significance differences effect through ROA ratio was gained by other study (Egbunike & Okerekeoti, 2018; Rahmad & Rudianto, 2023). Meanwhile, Alisyah & Susilowati (2022) and Ayuni & Situmorang (2021) had a result that ROA did not experience significant differences. The automotive and pharmaceutical firms also facing a change in financial performace including ROA ratio, but did not result in significant differences (Azizah & Rusdianto, 2023). Based on those previous studies, we formulate the research hypothesis as follows.

H₁ : There is a significant difference in the financial performance (ROA) of food and beverage industry firms before and during Covid-19.

Research Methodology

This study uses a quantitative research method. Quantitative research is grounded in positivist philosophy and is effective for studying specific populations or samples. It involves collecting data through research instruments, analyzing data statistically, and aims to test pre-formulated hypotheses (Sugiyono, 2017).

Population used for this research were all public firms in the food & beverages (FnB) sector on the Indonesia Stock Exchange (IDX) in 2018-2021 which were listed for four consecutive years. This four years period was chosen because it was the year when Covid-19 occurred. This pandemic emerged in Indonesia in March 2020. We classify these four years in to before (2018-2019) and during Covid-19 (2020-2021). Sample selection method in this research was purposive sampling. According to Sugiyono (2017b) purposive sampling is a method that selects samples based on specific criteria.. The sampling criteria and number of samples in this study are shown in more detail in Table 1. From these criteria, it was found that 208 data from 2018-2021 met the test sample criteria as mentioned below in Table 1.

Table 1. Research Sample and Population

	2018	2019	2020	2021	Total
Food and Beverages firms are listed on the IDX	52	55	60	75	242
Food and Beverages firms are not listed on the IDX four years consecutively (Based on IDX book Food and Beverages segment in Customer non-Cyclicals Segment)	(0)	(3)	(8)	(23)	(34)
Missing Data	(2)	(2)	(2)	(2)	(8)
Research Sample	50	50	50	50	200

Sources: Processed data (2024)

Firm performance measurement performed for this research uses return on assets (ROA). ROA calculation formula in this research is based on the formula below:

$$ROA = \frac{\text{Net Income (After Tax)}}{\text{Total Assets}}$$

Data analysis technique used is a quantitative approach based on historical data collected from annual reports from firms that meet the sample criteria. Analysis of sample data using SPSS 26. The following are the data analysis techniques applied in this research:

1. These samples will be grouped into two periods: before Covid-19 (2018-2019) and during Covid-19 (2020-2021). Average for each period will be analyzed in SPSS 26. Since each period represents an average, there will be 50 data per period.
2. Descriptive statistics: at this phase, researcher will carry out descriptive analysis of the before and during Covid 19. In this analysis, calculations and explanation will be given to explain maximum, minimum, mean, and standard deviation values of the research sample data observed.
3. Inferential statistics: this phase, inferential statistical analysis performed to analyze research sample data. According to Sudijono (2008) said that it is a branch of statistics that offers techniques for making general conclusions based on analyzed data. This research will use hypothesis testing by applying a comparison test that is appropriate to the sample used, namely the Paired Sample Test. The choice of comparison tests depends on the outcome of the normality test. Parametric tests are applied to normally distributed data, while non-parametric tests are used for data that is not normally distributed.
 - a. Normality test is using Shapiro-Wilk (and Kolmogorov-Smirnoff). Decision making in the normality test is based on significance. Data were normally distributed or not if meet the following hypothesis below:
 - If sig. > 0,05, data is normally distributed, accept H_0
 - If sig. < 0,05, data is not normally distributed, accept H_1
 - b. Comparison test. This test is based on the results of the normality test. When the data is normally distributed, a Paired Sample T-test is used. Conversely, if the data is not normally distributed, the Wilcoxon Rank test is applied.
 - If sig. < 0,05, there is a significant difference, accept H_0
 - If sig. > 0,05, there is no a significant difference, accept H_1

Result and Discussion

ROA Ratio Before and After Covid-19

This research uses Return on Assets (ROA) to measure the financial performance of firms in the food and beverages sector. The firms included in the study meet specific sample criteria and are registered in the IDX (Indonesia Stock Exchange) within the period from 2018 to 2021. The timeframe is divided into two groups: before (2018-2019) and during COVID-19 (2020-2021). These trends are illustrated more clearly in Figure 2.

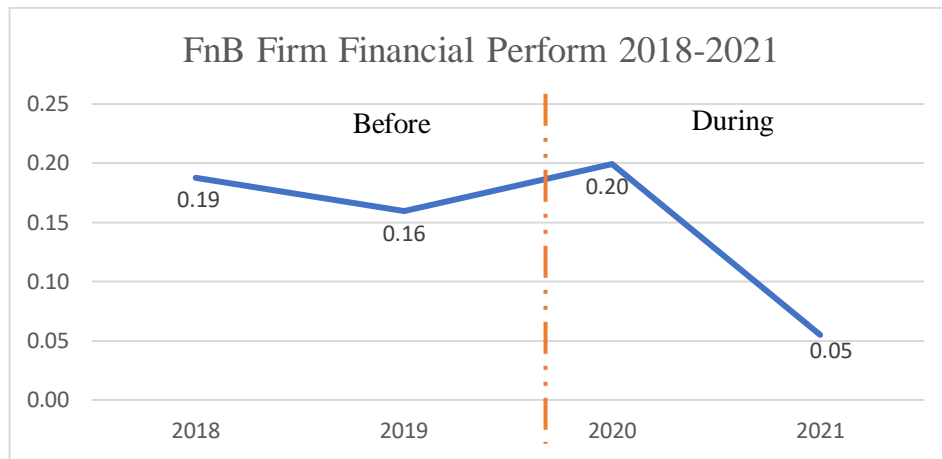


Figure 2. Change in Average ROA of FnB firms, 2018-2021

Based on Figure 2, the ROA ratio in the food and beverages firms started at 0.19 in 2018 and showed a decreasing trend, dropping to 0.16 in 2019, which was before this pandemic. However, in 2020, there was an increase in the ROA ratio to 0.20, driven by the surge in panic buying during the early stages of the pandemic. By 2021, the ROA ratio experienced a significant decline to 0.05. This drastic decrease was attributed to the global economic crisis caused by this pandemic, which severely affected many business sectors, including the food and beverages industry in Indonesia.

Descriptive Statistical Analysis

Based on criteria sampling data applied, 50 data were obtained for each period of observation. The results of descriptive statistical analysis are presented in table 2.

Table 2. Descriptive Statistical Analysis

Year	N	Min.	Maks.	Mean	Skewness	Kurtosis	Std. Deviation
Before	50	-0.36	0.89	0.174	0.831	0.430	0.2557
During	50	-0.16	0.42	0.127	0.130	-0.822	0.1420

Sources: Processed data by SPSS 26 (2024)

Descriptive statistical analysis show that the ROA before and during Covid-19 is in the 2018-2021 range. In the before Covid-19, the mean of ROA ratio is 0.174. The data for that year tends to be pointed as analyzed from the positive kurtosis value of 0.430 and has a positive slope according to the skewness value of 0.831. Meanwhile, in during Covid-19 period, there was an decrease in mean of ROA to 0.127. The data curve for this period has a flat peak with a positive slope, as can be seen from the kurtosis and skewness values which are -0.831 and 0.130 respectively.

Normality Test

In comparison tests, testing of data distribution is required. Normality test uses the Shapiro-Wilk or Kolmogorov-Smirnoff test. The results of this normality test will determine the comparison test model that will be carried out. When the normality test results show a significance value of > 0.05 , H_0 is accepted and the data is normally distributed, Paired Sample T-test is used. However, when the normality test shows a significance result of < 0.05 , Wilcoxon Ranks test is used. Normality test results can be seen in table 3.

Table 3. Normality test

		Kolmogorov-Smirnov			Shapiro-Wilk			
		Statistic	df	Sig.	Statistic	df	Sig.	
ROA	Before	0.192	50	0.001	0.913	50	0.001	Isn't normally distributed
	During	0.106	50	0.200	0.970	50	0.239	Normally distributed

Source: Processed data SPSS 26 (2024)

According normality test in table 3, ROA data in the before Covid-19 had a Kolmogorov-Smirnov and Shapiro-Wilk test significance is 0.001 which below 0.05. It suggests that the data is not normally distributed. Meanwhile, During Covid-19 had a Kolmogorov-Smirnov and Shapiro-Wilk test result is normally distributed with significance 0.200 and 0.239 which above 0.05. Therefore, based on this test, it can be concluded that there is research sample data that is not normally distributed, therefore reject H_0 , accept H_1 .

Wilcoxon Rank and Statistical Hypothesis Test

Based on normality test which concluded that data is not normally distributed, comparison test used is the Wilcoxon Rank test. Wilcoxon test result as it is in Table 4.

Table 4. Wilcoxon Ranks Test

		N	Mean Rank	Sum of Ranks
During-Before	Negative Ranks	29	29.03	842.00
	Positive Ranks	21	20.62	433.00
	Ties	0		
	Total	50		
		During-Before		
Z		-1.974		
Asym. Sig. (2-tailed)		0.048		

Source: Processed data SPSS 26 (2024)

From table 4, refers to Wilcoxon test results, 29 firm measured with their ROA had declined when Covid-19 occurred. Meanwhile, 21 firms had increased during Covid-19. From the Wilcoxon test, it was found that the Z value was -1.974 with a significance 0.048. Based on the Wilcoxon test criteria based on

significance values $0.048 < 0.05$, so **accept H_0** . This test concludes that there is a significant difference in firm's performance before and during the Covid-19 period.

Differences in ROA Ratio between Before and During Covid-19

Covid-19, which was first discovered in Wuhan, China at the end of December 2019 then entered Indonesia in March 2020. This disease had significant impact on the world economy. Almost all segments of the economy are affected, including firms operating in the food and beverages sector. From the results of the Wilcoxon test, it is known that in the period before (2018-2019) and during Covid-19 (2020-2021) there was a significant difference in the firm's financial performance.

In international context, Covid-19 has had a big impact globally. Bose et al. (2022) in their research on 4728 firms from 47 countries concluded that countries with large numbers of Covid-19 cases affected greater decline in firm value. However, smaller impacts are experienced by firms with higher sustainability performance scores, firms related to countries with low environmental orientation, and firms with stakeholder-oriented culture. In other research, Kusuma (2021) said that in the 2019 and 2020 periods, ROA measured in various calculation models show that there was an increase in several industrial sectors: information and communication technology, food and beverages, health, financial services, and retail trade. The same results as Kusuma's (2021) research were found in this study.

Based on Figure 2, Average ROA ratio, which were 0.19 in 2018 and 0.16 in 2019. However, the food and beverages sector saw an increase, where the average ROA rose to 0.20, higher than in the previous two years, which were unaffected by the Covid-19 pandemic. This increase is caused by significant rise in consumption (Kusuma, 2021). The surge in demand was driven by panic buying, as people rushed to purchase supplies in preparation for the social restrictions imposed by the government to curb the spread of Covid-19. A decline occurred in 2021, with the ROA dropping to 0.05. This decline was due to stricter restrictions during the peak of the Covid-19 pandemic. Another factor contributing to this decrease was the reduced demand as people began to adapt to the new normal. Interestingly, at the onset of Covid-19 in 2020, as shown in Figure 1, there was an economic downturn related to national economic growth, which declined to 2.97 percent in the first quarter of 2020, contrary to the results of this research.

This research reveals a significant impact before (2018-2019) and during Covid-19 (2020-2021) based on Wilcoxon Rank Test as shown in Table 4 which had a significant value $0.048 < 0.05$. This confirms that Covid-19 has affected firm performance by playing as an external factor impacting the system as a whole. A decline in the firm's ROA reflects a reduced ability to generate profits from its assets. According to system theory, external factors affect a system as internal factors do as a whole. Covid-19 caused a decrease in firms' ROA as it emerged in 2020 and 2021.

This research findings align with those of Rahmad and Rudianto (2023) and Nurlaily and Nasution (2022) who demonstrated a significant reduction in firm's ROA during the Covid-19 period compared to the period before Covid-19. Purba et al. (2022) also empirically showed that the Covid-19 pandemic had a negative and significant impact on tourism firms in Indonesia. This decline can occur due to tighter cash flow resulting from much lower income and service usage, leading to decreased profits (Azzahra et al., 2023).

The results of other research which reveals no significant differences ROA ratio between before and during Covid-19 (Azizah & Rusdianto, 2023; Ayuni & Situmorang, 2022; Egbunike & Okerekeoti, 2018; Elvierayani et al., 2021). Contrary result also revealed by Azizah & of Jauzaa and Hirawati (2021), who stated that there was no difference in financial performance, as measured by profitability ratios, between the periods before and during the Covid-19 pandemic for telecommunications firms. Telecommunications firms were driven by the importance of technology in maintaining societal activities along the Covid-19 spread. This utilization was related to key activities such as working from home and schooling from home. This condition also applied to firms in the health sector, which did not experience significant changes in their financial performance before and during the Covid-19 (Alisyah & Susilowati, 2022). Similarly, PT Japfa Comfeed Indonesia remained in good condition in terms of profit acquisition after the pandemic. Research by Daryanto et al. (2021) indicated that there was no substantial variation in overall profitability performance, suggesting that the firm has the potential to sustain its business in the future.

Covid-19 pandemic has had a significant impact on Indonesia's economy. This impact has also been felt by firms operating in the food and beverages, which is a major provider of essential needs for the population. The decline in performance of these firms should be addressed by the government with specific policies to minimize the losses experienced by these firms, enabling them to sustain themselves during the crisis along Covid-19 pandemic.

In an effort to accelerate growth during the Covid-19 restrictions, the government implemented several policies. One of these was through Ministry of Finance Regulation No. 23/PMK.03/2020, which provided various tax stimuli for employees and businesses (Menteri Keuangan Republik, 2020). This stimulus included government-covered employee income taxes, exemption of income tax on imports, and reduction of PPh Article 25 installment payments. Additionally, incentives and facilities related to Value Added Tax (VAT) were also provided for sectors affected by this pandemic.

Conclusion

In this study, a difference test was conducted regarding firm performance before and during the Covid-19 pandemic. The firm's performance in this study was measured using the return on assets (ROA) ratio. This research found significantly different firm performance between the periods before and during Covid-19 by using Wilcoxon test. This difference is due to the firm's ROA ratio tending to decline and suffer losses as a result of the implementation of Perlakuan Pembatasan Kegiatan Masyarakat (PPKM), which aims to reduce transmission through limiting community mobility. Interestingly, when looking at the yearly development data, there was an increase in 2020. This could have occurred because people spontaneously bought everything to prepare for the lockdown situation, causing a significant increase in logistics demand at the beginning of the Covid-19 period. As an effort to accelerate economic growth during Covid-19, Ministry of Finance Regulation implemented policy providing tax stimuli for employees and businesses which included government-covered employee income taxes, exemption of income tax on imports, and reduction of PPh Article 25 installment payments. On the other hand, this research also shows that some firms were not affected by Covid-19 and gained an improvement in financial performance. This was due to their strategy of expanding penetration to both modern and traditional retailer, as well as expanding their existing distribution reach. Therefore, the implications of this research suggests that companies should consider adopting more modern distribution strategies to expand their sales during the pandemic. This strategy has proven successful in maintaining the financial performance of some fnb firms, despite the emerge of the Covid-19 pandemic.

This research focuses only on firms operating in the food and beverages firms only because this sector has an important influence on society's needs. Tests were carried out on a sample of firms for the periods before (2018-2019) and during the Covid-19 pandemic (2020-2021). This research has limitations related to the factors used in measuring firm performance, as it only uses Return on Assets (ROA). However, this research provides an analysis of firm performance operating in the food and beverages, which is also affected by Covid-19 pandemic. Therefore, for future research, other measuring instruments can be added.

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