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Covid-19 Outbreak Impact on Sectoral Firm Performance Listed in Indonesia Stock Exchange in Various Sectors

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Abstract
The goal of this research is to estimate the impact of the Covid-19 outbreak on firm performance in Indonesia on a sectoral level. According to BPS data (2020), Indonesia's GDP fell in Q2 and Q3 2020, even falling to a negative level. The drop in GDP, on the other hand, was not homogenous across all sectors. In Q2 and Q3 2020, there are sectors with positive GDP and sectors with negative GDP. This research looks at three sectors with positive GDP and three with negative GDP. This research uses secondary data, namely financial report data published by each of the firms. STATA software was used to process research data using panel data regression. This research provides results that the Covid-19 outbreak had a positive impact on firm performance in sectors with positive GDP growth during the outbreak and a negative impact on firm performance in sectors with negative GDP growth during the outbreak. As sectorally, the Covid-19 outbreak had a positive impact on firm performance in the health sector. The Covid-19 outbreak had a negative impact on firm performance in several sectors, these are the transportation and logistic sector, car and motorcycle trading sector, and the construction sector.

Keywords: Covid-19 Outbreak Impact, Firm Performance, Sectoral Impact.

INTRODUCTION

The Indonesian economy is being affected by the current outbreak of Covid-19. Many businesses were forced to halt operations in order to prevent the spreading of the virus (Rahmani, 2020). According to data from BPS (2020), the Covid-19 outbreak that hit Indonesia resulted in a 5.32 percent (yoy) decline in Indonesia's gross domestic product (GDP) growth rate in the second quarter (Q2) of 2020 compared to the first quarter (Q1) of 2020, starting with the confirmation of the first positive case at the end of the first quarter (Q1) of 2020. However, Indonesia's GDP dropped by negative 3.49 percent in Q3 2020, indicating that the country is officially in recession. But, as sectorally, the declining of the GDP growth was not homogenous across all sectors. As demonstrated by data on GDP contribution per sector (BPS, 2020), most industries experienced a dip in economic growth. Numerous industries in Indonesia, on the other hand, are experiencing both positive and negative economic growth.

According to OECD (2020), the Covid-19 outbreak can be said as the greatest economic, financial, and social shock of the 21st century, after the 9/11 crisis and global financial crisis (GFC) 2008. so, it can be said that Covid-19 caused a crisis. Several studies have shown that there is an influence between crisis conditions, especially financial crises, on firm performance. Firm performance is defined as the achievements or results obtained by the firm from management, economy, and marketing aspects in creating and increasing competitiveness, efficiency and effectiveness of the firm (Ehikioya, 2009). According to data from Al-Matari et al. (2014), return on assets (ROA) is the most commonly used measure of company performance. Based on a research by Dolenc et al. (2012), regarding the effect of the economic crisis on firm performance in Slovenia, the results show that the economic crisis has a significant effect on the firm's financial performance. This research also shows that sector A which consists of agriculture, forestry and fisheries is a sector low-impact against the crisis that occurred. According to Minai and Lucky (2011), external factors during the economic crisis had a significant effect on firm performance. According to Notta and Aspasia (2014), it shows that the financial crisis has a significant effect on the firm's financial performance in manufacturing firms, which is represented by a decline in profits during the crisis. According to Shen et al. (2020), the crisis caused by the Covid-19 outbreak has a negative impact on firm performance.

Regarding the background of this research about GDP, we also elaborated some previous research which stated that there was a relationship between GDP and firm performance. GDP is one of the macroeconomic factors (Broadstock et al., 2011). According to the research by Lee et al. (2017) regarding the impact of macroeconomic conditions on the performance of firms in Vietnam show that changes in GDP have a positive relationship to firm performance. According to Dioha et al. (2018), stated that macroeconomic factors consisting of the consumer price index, unemployment rate, GDP, stock market index, corporate tax rate, and interest rate can have a positive or negative impact on the performance of a firm.

In general, previous research has tended to discuss the impact of Covid-19 in a macro or as a whole. Narayan and Phan (2020) conducted a research on the response and reaction of the stock market to Covid-19. This research was conducted on aggregate markets at a level where the assumption is that the market is homogeneous so that it has the same impact on all sectors. Between one sector and another sector is heterogeneous and will give different reactions to something. According to the data from McKinsey (2021), as globally, the Covid-19 outbreak is said to have had a negative impact on the economy, including a decrease in stock prices. But, if it is analyzed sectorally, it has different results.

Due to those data and some previous researches, this research will be concerned on three sectors with the highest positive GDP growth and on three sectors with the lowest negative GDP growth during the outbreak. The goal of this research is to assess the impact of the Covid-19 outbreak on the sectoral performance of enterprises in Indonesia that contributed positively to GDP as well as sectors that saw GDP decline during the outbreak. The novelty of this research was to analyse the impact of Covid-19 outbreak on sectoral firm performances in Indonesia, based on the sectors with positive GDP and sectors with negative GDP. This research will find out if there were firms having good performance during the outbreak.

METHOD

Data and Variables

The approach technique used in this research is a quantitative approach. This research uses firms in selected sectors based on the data supported by BPS (2020), these are three sectors with positive GDP growth, namely the agricultural sector, the communication and information sector, and the health sector, and three sectors with negative GDP growth namely the transportation and logistic sector, the car and motorcycle trading sector, and the construction sector, during the Covid-19 outbreak. The firms used in this research are listed on IDX, due to listed firms are better at represented national economic conditions than non-listed. However, the firms should have completed data that can be suited to the needs of this research, which have completed financial report data availability on a quarterly basis from 2016 to 2020 (specifically on 2020 is only until Q3).

This research used several variables, consist of ROA as a dependent variable which represents firm performance, several control variables such as size, leverage, growth, and free cash flow, and also used dummy variables. Dummy variables used in this research were period which indicates outbreak time and treated which indicates whether the sectors with positive GDP growth or negative GDP growth during the outbreak. Period has a value of 1 if it occurs after the outbreak, 0 otherwise. Treated for H1 has a value of 1 if it is a sector with positive GDP growth, 0 otherwise, and treated for H2 has a value of 1 if it is a sector with negative GDP growth, 0 otherwise (Shen et al., 2020). These are the equations.

$$ROA_{it} = B_0 + B_1\,Treated_{it} \times Period_{it} + B_2\,Treated_{it} + B_3\,Period_{it} + B_4\,Size_{it} + B_5\,Lev_{it} + B_6\,Growth_{it} + B_7\,FCF_{it} + E_{it} \quad (1)$$

$$ROA_{it} = B_0 + B_1\,Period_{it} + B_2\,Size_{it} + B_3\,Lev_{it} + B_4\,Growth_{it} + B_5\,FCF_{it} + E_{it} \quad (2)$$

This research was using the panel data regression analysis, due to the using of cross-section and time-series data as the samples. Panel data is processed using STATA software. The data processing is consisted of descriptive statistics and panel data regression through OLS or GLS that depends on the model selection test results, some classic assumption tests, and also the fixing of classic assumption tests (if needed).

RESULTS AND DISCUSSION

Descriptive Statistics

The descriptive statistical analysis is separated into two parts: sectors that contribute positively to GDP (Table 1) and sectors that are decreasing in GDP (Table 2). When these two tables are compared, it can be observed that the sectors with positive GDP growth have greater values for each of variables than the sectors with negative GDP growth during the outbreak.

Table 1. Descriptive Statistics of Firm with Positive GDP Growth (Agriculture Sector, Communication and Information Sector, and Health Sector)

Variabel	Count	Mean	Std	Median	Min	Max
ROA	627	0.00913874	0.00072329	0.0069644	-0.0432743	0.05921465
Periods	627	0.10526316	0.01226588	0	0	1
FA	627	0.03080249	0.00394557	0.01588792	-0.2933431	1.45963451
Rev	627	2.93538206	0.0229834	2.91944526	1.5467593	4.19544797
Size	627	29.5985619	0.04695475	29.7086117	26.1105611	31.9008806
Lev	627	0.50757563	0.00798749	0.5450959	0.12458358	0.94587459
Growth	627	-0.0490027	0.03851549	-0.0353729	-2.9250074	2.83980847
FCF	627	-0.0010499	0.00130876	0.00236547	-0.2578229	0.09506892

Source: Data processing by Authors, 2021.

Table 2. Descriptive Statistics of Firm with Negative GDP Growth (Transportation and Logistic Sector, Car and Motorcycle Trading Sector, and Construction Sector)

Variabel	Count	Mean	Std	Median	Min	Max
ROA	475	0.00490074	0.00091692	0.00526324	-0.0544476	0.06335721
Periods	475	0.10526316	0.01409603	0	0	1
FA	475	0.013658	0.00337442	0.00115974	-0.2311093	0.39758576
Revenue	475	2.56896204	0.03771325	2.7574145	1.15245343	4.01421007
Size	475	28.5738595	0.07477554	28.6259669	25.6501117	33.1506964
Leverage	475	0.48775069	0.00874757	0.47889251	0.07881371	0.99559702
Growth	475	-0.0411871	0.06407664	-0.078035	-4.1758638	4.04011854
FCF	475	0.00578514	0.00242536	0.00560448	-0.2273875	0.89455329

Source: Data processing by Authors, 2021.

Regression Results

Table 3. Regression Results of The Covid-19 Outbreak Impact on Firm Performance

Variabel	PDB Positif	PDB Negatif
Treated x Period	0.00716***	-0.00716***
Treated	0.00444*	-0.00444*
Period	-0.00721***	-0.00004
Size	0.00039	0.00039
Leverage	-0.02518***	-0.02518***
Growth	0.00215***	0.00215***
FCF	0.12302***	0.12302***
Constant	0.00614	0.01058
R-squared	0.2718	0.2718
N	1102	1102

Source: Data processing by Authors, 2021.

In the positive GDP panel, it is known that the Covid-19 outbreak has had a positive impact on firm performance, represented by the coefficient value of the treated x period variable which is positive with a value of 0.00576 and is significant at the 1% level. Those result indicates that the Covid-19 outbreak has had a positive impact on firm performance and supported the H1. In contrast, the negative GDP panel shows that the Covid-19 outbreak has had a negative impact on firm performance represented by the coefficient value of the treated x period variable which is negative with a value of -0.00576 and significant at the 1% level. It indicates that the Covid-19 outbreak has a negative impact on firm performance and supported the H2. These results are in accordance with Minai and Lucky (2011), Dolenc et al. (2012), and Shen et al. (2020) which shows that the crisis conditions including the outbreak have a significant impact on the firm's financial performance. The result also supported by Lee et al. (2017) which shows that the GDP growth rate has a positive effect on firm performance. The result indicates that the firm's performance value is in accordance with GDP growth.

It may be seen the impact of the Covid-19 outbreak on firm performance on each of sectors with positive GDP growth that represented by the coefficient of period. The coefficient of period variable from the agricultural sector is - 0.000205 and insignificant. This result does not support the hypothesis H1.1. The coefficient of period variable from the communication and information sector is - 0.00083 and also insignificant. This result also does not support the hypothesis H1.2. According to Azwar (2005), when a research shows insignificant results, the statistical value is ignored. The results of the regression are not in accordance with the results of

research from Minai and Lucky (2011), Dolenc et al. (2012), and Shen et al. (2020) which shows that crisis conditions have a significant impact on firm performance. These results are also not in accordance with Lee et al. (2017) which shows that the GDP growth rate has a positive effect on firm performance.

Table 4. Regression Results of The Covid-19 Outbreak Impact on Firm Performance in Sector with Positive GDP Growth

Variable	Sectors		
	Agriculture	Communication and Information	Healthcare
Period	-0.00205	0.00083	0.00098*
Size	-0.00321	-0.00573**	0.00019
Lev	-0.04258***	0.03130***	-0.02553***
Growth	0.00201***	0.00196**	0.00437***
FCF	0.39949***	0.12654***	0.15609***
Constant	0.12750*	0.15621**	0.01906
N	190	190	247
R-squared	0.491	0.108	0.494

Source: Data processing by Authors, 2021.

However, the healthcare sector shows a different result. The coefficient of period variable of this sector is 0.00098 which is significant at 5% level. This indicates that the Covid-19 outbreak has a positive impact on firm performance in the healthcare sector. This result supports the hypothesis H1.3. The results of the regression are in accordance with the results of research from Minai and Lucky (2011), Dolenc et al. (2012), and Shen et al. (2020) which shows that crisis conditions have a significant impact on firm performance. These results are also in accordance with Lee et al. (2017) which shows that the GDP growth rate has a positive effect on firm performance.

It may be seen the impact of the Covid-19 outbreak on firm performance on each of sectors with negative GDP growth that represented by the coefficient of period. The coefficient of period variable from the transportation and logistic sector is -0.01106 which is significant at 1% level. This result indicates that the Covid-19 outbreak has a negative impact on firm performance in the transportation and logistic sector. This result supports the hypothesis H2.1. The coefficient of period variable from the car and motorcycle trading sector is - 0.00966 which is also significant at 1% level. This result also indicates that the Covid-19 outbreak has a negative impact on firm performance in the car and motorcycle trading sector. This result supports the

hypothesis H2.2. The coefficient of period variable from the construction sector is -0.00136 which is significant at 10% level. This result also indicates that the Covid-19 outbreak has a negative impact on firm performance in the construction sector. This result supports the hypothesis H2.3. Those three regression results are in accordance with the results of research from Minai and Lucky (2011), Dolenc et al. (2012), and Shen et al. (2020) which shows that crisis conditions have a significant impact on firm performance. These results are also in accordance with Lee et al. (2017) which shows that the GDP growth rate has a positive effect on firm performance

Table 5. Regression Results of The Covid-19 Outbreak Impact on Firm Performance in Sector with Negative GDP Growth

Variable	Sectors		
	Transportation and Logistic	Car and Motorcycle Trading	Construction
Period	-0.01106***	-0.00966***	-0.00136*
Size	0.00416**	-0.00313**	-0.00096
Lev	0.01135	-0.05918***	0.00619
Growth	0.00021	0.00187***	0.00204***
FCF	0.19331***	0.03349***	0.50555***
Constant	-0.12367***	0.12885***	0.03147
N	171	171	133
R-squared	0.372	0.24	0.646

Source: Data processing by Authors, 2021.

CONCLUSION

The results of this research indicate that the Covid-19 outbreak has a positive impact on firm performance in sectors with positive GDP growth and has a negative impact on firm performance in sectors with negative GDP growth during the outbreak. Meanwhile, as sectoral, only the health sector that positively impacted by the outbreak. On the other hand, all of the sectors with negative GDP growth that been analyzed in this research showed that the outbreak has a negative impact on their firm performance. The data for this analysis ranges from 2016 to 2020, and several sectors indicated minor results. As a result, proposals for further research can be made over a longer period of time. Furthermore, because the firm performance is made up of various factors, further research may be adding some non-financial factors. In practice, investors might use this information as a guide when making investment decisions during the Covid-19

outbreak. Investors should pay close attention of how the company performs during the Covid-19 outbreak, so that they can control and predict the potential hazards.

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