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PANDEMIC COVID-19, ECONOMIC PERFORMANCE, and SHARE MARKET PERFORMANCE (Case Study in Indonesia)

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ABSTRACT

This research was conducted to determine and analyze the influence of the Covid-19 pandemic on economic performance and stock market performance in Indonesia.
The influence analysis was carried out by means of the paired average test. For data that are normally distributed using the t-test and for data that are not normally distributed using the Wilcoxon sign test.
This study finds that the Covid-19 pandemic has reduced economic performance and the performance of the Indonesian stock market.

Keywords : *Covid-19 Pandemic, Economic Performance, and Stock Market Performance.*

I. PRELIMINARY

Background

At the end of 2019, various mass media reported the emergence of a virus known as SARS-CoV-2 or Covid-19. This virus began to appear in the city of Wuhan, China starting in December 2019. This virus has infected many people.

Covid-19 has become a pandemic that has spread to many people in many countries in the world. At the beginning of January 2020, the number of world residents who were reported to be confirmed exposed to Covid-19 was 41 people. The number of people exposed to Covid-19 every day continues to grow. As of July 1, 2020, the number of confirmed Covid-19 patients throughout the country was 10,357,677 people (WHO report).

Not to be missed, Covid-19 also attacked the Indonesian population. Until the end of February 2020, the Government of Indonesia has not announced the number of citizens who have been confirmed as having Covid-19. This happened because none of the Indonesian residents who had been confirmed with Covid-19 had not been found or reported. However, at the beginning of March 2020, the government began to announce the number of confirmed Covid-19 residents, namely 2 people. The number of people who were confirmed positive for Covid-19 continued to increase from

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day to day, until July 1, 2020, there were 57,770 people who were reported to be positive for Covid-19 (Task Force for Handling Covid-19).

The Covid-19 pandemic caused health and economic problems in many countries. The emergence of this pandemic can reduce the export sector, reduce the level of household consumption, and reduce investment (Muhamad Chatib Basri, 2020). Trade between countries and international supplies (Atika Walujani Moedjiono, 2020) were also affected by the Covid-19 pandemic. In addition, the national aviation industry is also facing a difficult situation (Wihana Kirana Jaya, 2020). Thus the Covid-19 pandemic has rocked the economies of many countries in the industrial sector, trade sector, transportation sector, agriculture sector, and tourism sector.

The policies taken by the government with physical and social restrictions to prevent the spread of Covid-19 and the concerns of the entire world population have and are reducing economic growth in various countries. The decline in the economy is marked by a decrease in a country's GDP. Indonesia's GDP growth in 2019 3rd Quarter was 5.02 percent; The 4th Quarter was 4.97 percent, and in the 1st Quarter of 2020 it was 2.97 percent. GDP growth has continued to decline during the last three quarters. The decline in GDP growth from 3rd Quarter 2019 to 1st Quarter 2020 is quite large, namely 2 percent. At the end of 2019 and early 2020 this is the initial period for the emergence of the Covid-19 pandemic in the world and also in Indonesia.

The emergence of the Covid-19 pandemic, the economic downturn, and the concerns of the entire community were also responded to by investors in the capital market. There has been panic selling which has lowered the composite stock price index (Nafan Aji Gusta, 2020). There is a positive relationship between economic conditions and the stock market (Najeb M.H. Masoud, 2013), especially in a liquid and active stock market (Ake Boubakari and Dehuan Jin, 2010). It was also found that economic growth spurs the development of the stock market (Lei Pan and Vinod Mishra, 2016).

The Indonesian capital market (Stock Exchange) experienced turmoil as indicated by fluctuations in the composite stock price index (Jakarta Composite Index = JCI). In December 2019 it was 6,329,314; in March 2020 it was 4,538,930; and as of June 2020, JCI was 4,904,088. The decline in JCI shows that the prices of various stocks have decreased. This also shows that investors in the Indonesian capital market reacted negatively to the Covid-19 pandemic in the world and in Indonesia.

JCI is a total index that shows the comparison of the price at a certain point in time with the initial price of all shares listed on the stock exchange. The stock price that occurs on the stock exchange is the balance price between the powers of supply and demand for a share on the stock exchange. This price is determined by investors who also show their response or reaction to economic conditions at the current time and their predictions for the future.

Changes in JCI from one time to the next produce a return (inverse). This return is a capital gain if it is positive and is a loss of capital if it is negative.

Formulation of the Problem

Based on the background description above, the following problem formulations can be made:

1. Has the Covid-19 pandemic reduced Indonesia's economic growth significantly?
2. Has the Covid-19 pandemic changed stock market returns significantly?

II. LITERATURE REVIEW

The stock price fluctuates, goes up or down, all the time. There are several factors or variables that affect the price of a stock. Starting from external factors that affect all companies and all investors who ultimately determine the stock price or company value (Scott Besley and Eugene F. Brigham, 2005, p.19). Others argue that some of the factors that determine stock prices are managerial actions, the economic environment, taxes, and the political climate. These factors then influence cash flow and risk and ultimately determine the share price and the intrinsic value of the stock. (Eugene F. Brigham and Joel F. Houston, 2016, p.11). From these two opinions, it can be concluded that external factors are the main factors affecting stock prices (firm value). These external factors comprise economic conditions, government laws and regulations, and the competitive environment—both domestic and foreign. Apart from that, the general health condition of the people is also a part of external factors. Public health conditions affect their income and consumption patterns.

These external factors, on the one hand, affect all firms. Each company will respond to these external conditions by taking various operational and strategic steps. All steps that have been decided by the company determine the performance of each company. The financial performance of a company can be analyzed from the financial reports published by the company. This performance can reflect the company's operational performance over a certain period of time.

On the other hand, external factors also influence investors' considerations (factors). Investors always pay attention to external factors. What happens to external conditions is a consideration for investors in making investment decisions.

The two considerations, the factors of the company and the investor, then determine the value of the company. The company's performance and investors' responses determine the supply side and demand side of shares by investors, which in turn form the stock price (firm value).

Economic Performance

Economic performance is the achievements of the economic sector obtained by a country during a certain period of time. This economic performance takes into account the output of all business sectors in one country. This performance shows the macroeconomic conditions of the country in a certain period of time. One indicator of economic performance is the gross domestic product (GDP) achieved by a country (Sadono Sukirno, 2010: 36).

GDP measures the output produced by a country during a certain period of time, for example a quarter or a year (Paul A. Samuelson & Nordhaus, 2010: 386) (N. Gregory Mankiw, 2010: 18). The output includes goods and services. The greater the GDP of a country, the better the country's economy, and vice versa.

The economic growth of a country can be measured by the growth in GDP from one time to the next. GDP growth can be calculated on a quarter-to-quarter (q-to-q) or year-on-year (y-on-y) basis. The q-to-q basis shows GDP growth from one quarter to the next, while the y-on-y basis shows GDP growth from one year to the next.

All countries expect to have positive GDP growth, which indicates an improvement in the country's macroeconomic conditions. Meanwhile, negative GDP growth indicates a decline in the economy of a country. A country can be said to be entering a period of recession if this country experiences negative GDP growth for two consecutive quarters.

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Stock Market Performance

Stock market performance (capital) shows the achievements of a stock market (capital) in a certain period of time. The performance of the common stock market is measured by the stock price index. The stock price index can be of various kinds. Various institutions (institutions) can form a stock price index with a specific purpose. By definition, the index number is the comparison between a value at a certain time and the value in its base period (Lind, Douglas A., et. al., 2014: 180). That value can be the price or the number of entities being compared. This index describes the relative change in value compared to a certain period with the value in the base period. An index value with a base of 100 can be found using the following formula (Hartono, 2017: 168):

$$\text{Index} = \frac{\text{Market Value}_t}{\text{Base Value}} \times 100$$

The Indonesia Stock Exchange (IDX) creates various price indexes, two of which are the Composite Stock Price Index (Jakarta Composite Index) and the Sectoral Stock Price Index. The Jakarta Composite Index (JCI) is a composite index calculated by taking into account all share prices of all companies listed on IDX. This index shows the trend of all stock prices from one time to the next.

Sectoral stock price index is a stock price index for each sector (line) of business. IDX groups all companies listed on the stock exchange into 10 sectors, so that there are 10 sectoral stock price indexes.

Stock Returns

The results obtained on an investment are called returns (Hartono, 2017: 283). There are two sources of return on investment in stocks, namely capital surplus and dividends. A capital surplus is the positive difference between the selling price and the purchase price of a share. A capital surplus (gain) is obtained when the selling price of shares is higher than the purchase price. If the difference is negative, this results in a capital loss.

The second source of return is dividends. Dividends are the distribution of profits to shareholders. Companies that have no retained earnings are not allowed to distribute dividends.

In this analysis, return only comes from the gain (loss) of capital. This was chosen because the analysis is for a short period of time. Return can be calculated with the formula:

$$\text{Return} = \frac{\text{Selling Price - Buying Price}}{\text{Buying Price}}$$

The purchase price is the price of a share when a share is purchased. The selling price is the price at which the shares were sold.

Research Hypothesis

Based on the background description and literature review, the hypotheses in this study are:

1. The Covid-19 pandemic has significantly reduced Indonesia's economic performance.
2. The Covid-19 pandemic has significantly changed stock market returns.

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III. RESEARCH METHODS

Research Design

This research is an event study, which analyzes the macroeconomic performance and the performance of the Indonesian capital market during the Covid-19 pandemic. The analysis used is a comparative analysis, which compares the macroeconomic performance and the average return on the capital market before and during the Covid-19 pandemic in Indonesia.

Place and Time of Research

This research was conducted in Indonesia. The research observation period was 11 months from November 2019 to September 2020. December 2019 was the starting point of time for the Covid-19 pandemic in China and March 2020 was the first month the Covid-19 case was announced in Indonesia. However, this research also discusses a little about the economic performance and performance of the Indonesian capital market during 2019.

Types and Sources of Data

The type of data used in this study has a ratio scale. Data in the form of gross domestic product growth for 4 quarters and the Indonesian capital market index for 11 months of observation are used for analysis. This data source is a secondary data source, namely data published by the Central Statistics Agency and the Indonesia Stock Exchange.

The data analyzed is the total gross domestic product growth and according to business fields. The market index used in the analysis consists of one composite index of all company stocks and 10 sectoral stock indices for each industry.

Population and Sample

The object of this research is the Indonesian economy and the Indonesia Stock Exchange. The data analyzed is time series data, so the sample used is the data during the observation period for data analysis.

Data Collection Technique

All data is downloaded from the website address of the Central Bureau of Statistics and the Indonesia Stock Exchange. The data is in the form of documents published by the two institutions.

Variable and Operational Definitions

The Covid-19 pandemic is a health disaster caused by the corona virus. This disaster occurred from December 2019 until now. In Indonesia, this disaster began to be announced in early March 2020. The beginning of the Covid-19 pandemic was used as a time point for comparison between performance before and during the pandemic.

The performance of the Indonesian economy is measured by the level of GDP growth both in total and by business field. Capital market performance is measured by the Jakarta Composite Index and sectoral indexes. Meanwhile, capital market returns are sought by the formula:

$$\text{Return} = \frac{I_t - I_{t-1}}{I_{t-1}}$$

where, I_t is the index value in period t and I_{t-1} is the index in the period before t.

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Data Processing Process

The collected stock index data is entered in an excel table. At this tabulation stage, it is used to find the return value of each index during the observation period. The results of this return calculation and GDP growth will then be processed with SPSS software for statistical analysis.

Data Analysis Method

The data collected will be analyzed for normality. This analysis is to determine whether the data is normally distributed or not. This needs to be done to determine the hypothesis testing technique in accordance with the normality of the available data.

Hypothesis Testing Techniques

The hypothesis testing technique used is the average difference test. If the data is normally distributed, the hypothesis testing technique used is the pairwise average difference test with the t statistic. However, if the data are not normally distributed, the hypothesis testing technique used is the Wilcoxon sign test.

DISCUSSION

The Covid-19 Pandemic

The corona virus, known as Covid-19, began to appear in China, to be precise in the city of Wuhan, at the end of December 2019. At the beginning of its appearance, the corona virus was considered not to be too dangerous to health and its spread was not widespread. With this assumption, many state leaders ignore the spread of this virus. So that the movement of people across countries is still so free. There is even a country that provides incentives to the tourism sector in that country to invite foreign tourists to enter that country. However, in fact the spread of this virus is very fast.

The corona virus (Covid-19), until September 2020, has spread in more than 200 countries in the world. The spread of this virus has become a pandemic. All countries are trying to overcome this Covid-19 pandemic.

Indonesia is a country that is also affected by the Covid-19 pandemic. The Indonesian government first announced a confirmed Covid-19 population in early March 2020. That month, the government announced that two people had been confirmed positive for Covid-19. Since then, more and more residents have been confirmed positive for Covid-19. Table 1 shows the development of people with Covid-19 in Indonesia.

Table 1 The development of Covid-19 in Indonesia

Month	March	April	May	June	July	August	September	October
Confirmed	2	1.677	10.551	26.940	57.770	109.936	177.571	291.182
Recovered	-	103	1.591	7.637	25.595	67.919	128.057	218.487
Deaths	-	157	800	1.641	2.934	5.193	7.505	10.856
Treatment	2	1.417	8.160	17.662	29.241	36.824	42.009	61.839

Source: COVID-19 Confectionary Task Force

Table 1 shows that the number of residents who were confirmed Covid-19 from day to day continued to increase. The accumulated number of residents confirmed by Covid-19 until the beginning of October 2020 is 291,182 people. From August to September there was an increase of

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67,635 people who were confirmed as Covid-19 or an increase of 61.52 percent. The increase in the number of confirmed residents of Covid-19 from September to October was 113,611 people or 63.98 percent. The lowest percentage increase was from August to September.

Table 1 also shows data on recovered Covid-19 patients, patients who died, and the number of patients in care or self-isolation. All of this data shows that, in accumulation, the number continues to grow along with the increase in the number of people who have been confirmed positive for Covid-19. The accumulated number of people who were confirmed Covid-19 and who died in early October was 10,856 people or 3.73 percent of the total accumulated confirmed positive for Covid-19 and the proportion is the lowest proportion of deaths compared to previous months, except in March 2020. This is due to the higher recovery rate of people who have been confirmed as Covid-19. At the beginning of October, the number of patients who had recovered was 218,487 or 75.03 percent of the total accumulated patients confirmed for Covid-19. This cure rate is the highest cure rate compared to the previous months. The Covid-19 pandemic has disrupted economic performance and capital market performance in many countries. This pandemic has also disrupted the performance of the economy and the capital market in Indonesia.

Indonesian Economy

The concerns of many people about the corona virus and the steps taken by the government to deal with the Covid-19 pandemic have brought down the economies of many countries. Many people reduce their activity outside the home and their consumption of many products and services. This causes a decrease in the production of these goods and services. This has resulted in a reduction in the workforce or employees of some businesses. Many people have lost their jobs and sources of income, so that people's purchasing power has also decreased. Several local governments in Indonesia impose *Pembatasan Sosial Berskala Besar* (PSBB) or large-scale social restrictions. This PSBB encourages people to do more activities at home. Various jobs that can be done at home are recommended to be done at home. Many schools carry out the learning process online. Several businesses that do not have direct contact with the basic needs of the community are asked to reduce their operating hours. Many businesses are prohibited from operating at night.

Public concern over the Covid-19 pandemic for their health, the decline in people's purchasing power, and the implementation of the PSBB have affected the Indonesian economy. The discussion on Indonesia's economic growth is divided into two, namely on a year-on-year basis and on a quarter-to-quarter basis.

Y-on-Y-Based Economic Growth

Indonesia's economic growth can be seen from GDP growth which also shows economic performance. Indonesia's GDP growth in 2019 and 2020 can be seen in Table 2.

Table 2 Indonesia's Economic Growth (%)

	2019				2020		
	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Y-on-Y	5,07	5,05	5,02	4,97	2,97	-5,30	-3,49
Q-to-Q	0,52	4,20	3,06	-1,74	-2,41	-4,19	5,05

Source: Central Bureau of Statistics

Table 2 shows Indonesia's economic growth rate (in percent) as measured by the growth of Gross Domestic Product (GDP) on a year-on-year (y-on-y) and quarter-to-quarter (q-to-q) basis. Table 2 shows GDP growth data for 2019 and 2020. GDP growth in 2019 shows the conditions of Indonesia's economic growth before the Covid-19 pandemic and 2020 data shows Indonesia's economic growth rate during the world Covid-19 pandemic and in Indonesia itself.

Indonesia's economic growth rate (y-on-y) in 1st Quarter 2019 was 5.07 percent. This shows that the economic growth from 1st Quarter 2018 to 1st Quarter 2019 was 5.07 percent. This growth rate continued to decline during 2019 until the growth rate in 4th Quarter was 4.97 percent. This data shows that the actual rate of economic growth in Indonesia has decreased during 2019, namely by 0.10 percent (5.07% – 4.97%). Of course, the decline in Indonesia's economic growth rate was not caused by the emergence of the Covid-19 pandemic, because the Covid-19 pandemic began to emerge at the end of December 2019. However, this decline was caused by other factors that were not discussed in this article.

In 2020, Indonesia's economic growth was 2.97 percent in 1st Quarter. This growth was smaller than growth in 4th Quarter 2019. This decline in growth continues the decline in GDP in 2019 and the impact of the Covid-19 pandemic. The Indonesian economy contracted by 5.30 percent in 2nd Quarter and continued by 3.49 percent in 3rd Quarter. The contraction or negative growth in the Indonesian economy for two consecutive quarters indicates that the Indonesian economy is entering into a recession.

Indonesia's GDP structure consists of 17 business fields. In the first quarter of 2020, all business fields experienced positive growth. The three business fields that had the greatest growth were: (1) Financial services and insurance with a growth of 10.67 percent; (2) Health services & social activities by 10.39 percent; and (3) Information and communication of 9.81 perersen. Meanwhile, the three business fields that had the smallest growth rates were: (1) Agriculture, forestry & fisheries by 0.02 percent; (2) Mining & quarrying 0.43 percent; and (3) Transportation & warehousing 1.27 percent.

In the second quarter of 2020, there were 7 business fields that experienced positive growth and 10 business fields experienced negative growth. The three business fields that had the highest growth rates were: (1) Information & communication by 10.88 percent; (2) Water supply, waste processing, waste and recycling by 4.56 percent; and (2) Health services & social activities. Meanwhile, the 3 business fields that experienced the lowest growth were: (1) Transportation & warehousing by minus 30.84 percent; (2) Provision of accommodation & food and drink amounting to minus 22.02 percent; and (3) Other services amounting to minus 12.60 percent.

Meanwhile, in the third quarter, there were 7 business fields that grew positively and 10 business fields grew negatively. The three business fields that grew the highest were: (1) Health services and social activities by 15.33 percent; (2) Information & communication 10.88 percent; and (3) Water supply, waste treatment, abundance and recycling by 6.04 percent. Meanwhile, the three business fields with the smallest growth were: (1) Transportation & warehousing by minus 16.70 percent; (2) Provision of accommodation & food and drink amounting to minus 11.85 percent; and (3) company services amounting to minus 7.61 percent.

When viewed on an average basis for 3 quarters of 2020, there are 8 business fields with positive growth and 9 business fields that grow negatively. The three business fields that grew the highest were: (1) Information and communication by 10.43 percent; (2) Health services and social

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activities 9.81 percent; and (3) Water supply, waste treatment, abundance, & recycling by 5.05 percent. Meanwhile, the three business fields experiencing the largest contraction were: (1) Transportation and warehousing by minus 15.42 percent; (2) Provision of accommodation and food and drink amounting to minus 10.64 percent; and (3) company services by minus 4.77 percent.

During the three quarters, there were 6 business fields that always had positive growth, namely (1) Information and communication; (2) Health and social services; (3) Water supply, waste management, waste, & recycling; (4) Educational services; (5) Real estate, and (6) Agriculture, forestry & fisheries. These six business fields continued to experience growth during the pandemic. Even the information & communication sector and health & social services have an average growth for 3 quarters of 2020 which is higher than the average growth during 2019. Both of these business fields experienced higher growth during the pandemic period. This suggests that the need for information & communication and health & social services is increasing during a pandemic.

Q-to-Q Based Economic Growth

Table 2 also shows the GDP growth rates on a quarter-to-quarter (q-to-q) basis. The GDP growth rate from 1st Quarter to 2nd Quarter 2019 is the largest GDP growth rate, namely 4.20 percent. Meanwhile, the GDP growth rate for 4th Quarter from 3rd Quarter was negative 1.74 percent. This means that at the end of 2019 there was a contraction in economic growth of 1.74 percent.

In 2020, Indonesia's economic growth in 1st Quarter 2020 contracted by 2.41 percent compared to economic growth in 4th Quarter 2019. This contraction in economic growth continued in 2nd Quarter 2020, amounting to 4.19 percent. Meanwhile, the Indonesian economy in 3rd Quarter 2020 grew by 5.05 percent from economic conditions in 2nd Quarter.This means that there is an economic increase from various businesses that have been decided to improve economic conditions.

The contraction in economic growth in 1st Quarter and 2 indicates that the pandemic has had a negative impact on the Indonesian economy. Meanwhile, positive growth in the 3rd quarter of 2020 indicates that economic growth has reversed direction. This growth is in response to various efforts made by the Central and Local Governments to deal with the pandemic and promote economic growth.

When viewed from 17 business fields, the average growth per quarter for each business was positive during 2019. However, there were only 5 businesses that during 4 quarters had always grown positively, namely (1) Provision of accommodation & food and drink; (2) Information & communication; (3) Real estate; (4) Company services; and (5) Other services. The highest growth occurred in the Other Services sector by 2.60 percent. This was followed by growth in the Corporate Services sector by 2.53 percent and the Information and Communication sector by 2.30 percent.

In the 1st Quarter of 2020, there were 6 business fields that experienced positive growth and 11 business fields experienced contraction (decline). Agriculture, Forestry and Fisheries has a growth of 9.46 percent. The Financial Services and Insurance sector has a growth rate of 5.39 percent. Growth of 2.97 percent for the Information and Communication sector. Other Services had a growth of 1.19 percent and Health Services and Social Activities had a growth of 1.09 percent.

Education Services is the business field experiencing the largest contraction or growth of minus 10.39 percent. The construction sector has a growth of minus 9.92 percent. The Government Administration, Defense and Compulsory Social Security sectors grew by minus 8.54 percent. The

Transportation and Warehousing Sector grew by minus 6.38 percent, and the Electricity and Gas Procurement sector grew by minus 5.66 percent.

The growth in business fields during 1st Quarter 2020 shows that the need for food which is the basis of society remains high. People still carry out financial transactions for various payments, for example online purchases. Community needs for information and communication also increased compared to 4th Quarter 2019. Community needs for entertainment (tourism) also increased. This happened because the Covid-19 pandemic had not yet occurred in Indonesia in January and February 2020. Concern for health and social affairs has also grown positively in an effort to maintain health as the Covid-19 pandemic has started and abroad and began to occur in Indonesia at the beginning. March 2020.

Public spending in the education sector is reduced. This indicates that the community reduces educators' spending for other important needs and the implementation of the learning from home policy. Expenditures in the construction sector have also decreased, which indicates a decline in development in the infrastructure sector. The absorption of state spending for the Government Administration, Defense and Compulsory Social Security sectors is also not optimal. The decline in growth in the transportation and warehousing sectors indicates reduced movement of goods, both exports and imports. Export and import restrictions for various products by many countries to reduce the impact of the Covid-19 pandemic have reduced the growth of the transportation and warehousing sectors. The negative growth in the electricity and gas procurement sector indicates that there is a decrease in electricity and gas consumption in several industrial and trade sectors due to reduced operating hours.

In the second quarter of 2020, when compared to the conditions in the first quarter of 2020, only 3 business fields experienced positive growth and the rest experienced contraction. Business fields that experienced positive growth were (1) Agriculture, Forestry and Fisheries 16.24 percent; (2) Information and Communication 3.44 percent; and (3) Water Supply, Waste Treatment, Waste and Recycling at 1.28 percent. This sector is a business field to meet the basic needs of society.

Meanwhile, the five sectors that experienced contraction were: (1) Transportation and Warehousing by minus 29.22 percent; (2) Provision of accommodation and food and drink amounting to minus 22.31 percent; (3) Other Services amounting to minus 15.12 percent; (4) Company services amounting to minus 14.11; and (5) Financial Services and Insurance amounting to minus 10.32 percent. All business fields that experienced contraction were not directly related to the basic needs of the community.

In 3rd Quarter, all businesses had positive growth. The three business fields that had the highest growth were: (1) Transportation & warehousing by 24.28 percent; (2) Providing accommodation & food and drink by 14.79 percent; and (3) Health services & social activities by 13.73 percent. Meanwhile, the three business fields with the smallest growth were: (1) Real estate by 0.97 percent; (2) Agriculture, forestry & fisheries 1.01 percent; and (3) Water supply, waste management, waste and recycling by 1.51 percent.

For 3 quarters in 2020, there are only 2 business fields that always have positive growth every quarter, namely (1) agriculture, forestry, & fisheries sector; and (2) the information & communication sector. When calculated on an average basis for 3 quarters, there are 5 business fields that have positive growth, namely (1) Agriculture, forestry, & fisheries 8.90 percent; (2) Health services &

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social activities by 3.56 percent; (3) Information & communication by 3.18 percent; (4) Water supply, waste management, waste & recycling by 0.63 percent; and (5) Real estate by 0.41 percent.

Based on the review of Indonesia's economic growth on a year-on-year and quarter-to-quarter basis, it is known that the information & communication business field always experiences positive growth. Even during 2019, this sector has always experienced positive growth every quarter.

The Covid-19 pandemic that occurred abroad and in Indonesia had and is reducing Indonesia's economic growth. This situation raises concerns among investors on the Indonesia Stock Exchange (IDX). Investors' response to this condition is reflected in the stock index.

Capital Market Performance

The performance of the capital market or the stock market can be seen from the stock price index value from one time to the next. An increase in the stock price index indicates an increase in capital market performance and a decrease in the stock price index indicates a decline in capital market performance. The stock price index shows the comparison of the price (market) of shares at a certain time compared to the price of the shares at the initial offering (IPO).

Composite stock price index data (Jakarta Composite Index = JCI) at the end of each month during 2019, before the Covid-19 pandemic, is shown in Table 3.

Table 3 *Jakarta Composite Index* 2019

Month	JCI		Month	JCI
1	6.63,2,969		7	6.390,505
2	6.443,348		8	6.328,470
3	6.468,755		9	6.169,102
4	6.455,352		10	6.228,317
5	6.209,117		11	6.011,830
6	6.358,629		12	6.299,539

Source: Indonesia Stock Exchange (IDX)

Table 3 shows that the JCI during 2019 tended to decline. JCI in January 2019 is the highest index, amounting to 6,632,969. This JCI then continued to decline until November 2019 was the lowest JCI, amounting to 6,011,830. The JCI in December 2019 was higher than the JCI in November, but the JCI was still lower than the JCI in January. Based on these data, on average, there is a decrease in JCI by 0.30 percent per month.

If the performance of this capital market is compared with Indonesia's macroeconomic performance during 2019, it can be seen that the decline in economic performance was followed by a decline in the performance of the Indonesian capital market. In 2019, the Covid-19 pandemic has not yet occurred. So, actually the macroeconomic performance and the performance of the Indonesian capital market have decreased. This decline in performance, of course, was not caused by the Covid-19 pandemic but by other factors.

Table 4 shows the JCI at the end of each month of 2020 or before the Covid-19 case and during the Covid-19 pandemic in Indonesia.

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Table 4 *Jakarta Composite Index* 2020

Bulan	JCI	Bulan	JCI
1	5.940,048	7	5.149,627
2	5.452,704	8	5.238,487
3	4.538,930	9	4.870,039
4	4.716,403		
5	4.753,612		
6	4.905,392		

Sumber: Bursa Efek Indonesia (IDX)

The JCI in January 2020 was 5,940,048 and this index was lower than the JCI in December 2019. Then JCI fell again in February and March 2020 to become 4,538,930. The lowest JCI occurred on March 24, 2020, amounting to 3,937,632. From the beginning of January 2020 to mid-March 2020 or for 12 weeks, on average the JCI decreased by 3.33 percent per week. This decrease in JCI occurred during the Covid-19 pandemic, because this pandemic emerged in December 2019 in China and continues to spread throughout the world. This pandemic also occurred in Indonesia at the beginning of March 2020.

The decline in JCI reflects the response of investors to the prospects for the performance of all Indonesian companies due to the Covid-19 pandemic. Investors' concerns are manifested by the sale of shares by investors, thus reducing the market price of shares listed on the stock exchange. This market price pressure was reflected in the decline in JCI.

After 24 March 2020, JCI has increased until 27 August 2020, which is 5,371,472. So that for 22 weeks there was an increase in JCI by an average of 1.42 percent per week. After 27 August 2020, JCI tends to decline until the end of September 2020 with an average reduction rate of 1.94 percent per week.

The increase in JCI, from the end of March to the end of August, shows investors optimism or expectations regarding macroeconomic conditions as measures to be taken to deal with the Covid-19 pandemic are decided. However, until August 2020, the Covid-19 pandemic has not shown an end soon and it is estimated that this pandemic will continue until 202, that is, until a vaccine is found for Covid-19. This led to the decline in JCI.

When reviewed for 9 months in 2020, from the beginning of January to the end of September, JCI has decreased by 2.82 percent per month. This shows that overall JCI is decreasing. Even though from March to September, JCI tends to go up.

IDX also created 10 stock price indexes based on industry lines. All indices have decreased during the last 9 months. The three indexes that experienced the largest monthly average decline were: (1) Miscellaneous industry by minus 4.35 percent; (2) Property amounting to minus 4.26 percent; and (3) Infrastructure of minus 4.02 percent. While the three indexes that experienced the smallest decline were: (1) Consumer goods by minus 1.27 percent; (2) Mining in the amount of minus 1.66 percent; and (3) Trade in the amount of minus 2.18 percent.

Stock Market Return

The stock market return (capital) that occurred in Indonesia for 10 months can be seen in Table 5. This return is based on JCI data per month.

Table 5 Indonesian Capital Market Return for 10 Months

	Dec. 2019	Jan. 2020	Feb. 2020	March 2020	April 2020	May 2020	June 2020	July 2020	Aug. 2020	Sep. 2020
Return	0.0479	-0.0571	-0.0820	-0.1676	0.0391	0.0319	0.0319	0.0498	0.0173	-0.0703

Source: Processed Data.

In December 2019, the market return was 0.0479 which indicates that JCI increased by 4.79 percent from JCI in November 2019. Furthermore, returns in January to March 2020 were negative, indicating that there was a decline in JCI during the three months. The decline in JCI in January and February is a response to the Covid-19 cases that have occurred abroad but have not been detected in Indonesia. The decline in JCI, which was shown by the negative market return in March 2020, is a continuation of the response to the Covid-19 pandemic that has been and is happening abroad and also in Indonesia.

The market return in April to August 2020 is positive. This shows that JCI has increased during the month. This positive return shows the positive response of investors to the steps to handle the Covid-19 pandemic. However, in September 2020, JCI fell again as indicated by the negative return value. This decline could be caused by the negative response of investors to the possibility that Indonesia's economy in the 3rd quarter of 2020 will experience a contraction, so that the Indonesian economy will experience a recession.

The average value of return per month, for 9 months in 2020, for all industry lines is negative. This shows that all industry lines generated capital loss for 9 months. The three industry lines that produced the largest average capital loss per month were: (1) Infrastructure by 3.70 percent; (2) Property amounting to 3.69 percent; and (3) Miscellaneous industry by 3.64 percent. Meanwhile, the three industry lines that produced the smallest capital loss were: (1) Consumer goods by 1.09 percent; (2) Mining by 1.43 percent; and (3) Manufacturing 2.08 percent.

Normality Test

The normality test is used to determine the form of the distribution of the analyzed data. Data can be normal or abnormal. The normality test used is the Kolmogorov-Smirnov test. The data is normally distributed if it has a p-value (Sig.) Greater than 0.05 (the significant level used is 5%). Conversely, data is not normally distributed if it has a p-value less than 0.05.

The economic growth data used for the normality test are growth data from 17 business fields. Table 6 displays the p-values of the Kolmogorov-Smirnov test for 4 quarters.

Table 6 Normality Test for Economic Growth

Quarter	Q4_2019	Q1_2020	Q2_2020	Q3_2020
p-value	.200	.200	.200	.200

Source: Processed Data

Table 6 shows that all economic growth data for 4 quarters are normally distributed because the data produces a p-value greater than 0.05.

Meanwhile, the normality test for market return data is to use return data from 10 industrial sectors for 10 months. The results of the normality test for this data are shown in Table 7. Using the Kolmogorov-Smirnov normality test, it is known that 2 data are not normally distributed because they

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have a p-value below 0.05, namely in May 2020 and September 2020. While the data for 8 months others are normally distributed, because they have a p-value greater than 0.05.

Table 7 Normality Test of Market Returns

	Dec. 2019	Jan. 2020	Feb. 2020	March 2020	April 2020	May 2020	June 2020	July 2020	Aug. 2020	Sep. 2020
p-value	.200	.200	.200	.200	.200	.011	.096	.200	.200	.022

Source: Processed Data

Hypothesis Testing

The hypothesis test used here is the average hypothesis test for paired samples. The t test is used if the data is normally distributed and the Wilcoxon Signed Ranks Test if the data is not normally distributed. Hypothesis testing can be divided into two, namely hypothesis testing for economic growth and hypothesis testing for capital market performance.

Economic Growth Hypothesis Test

Indonesia's average economic growth data based on data from 17 business fields from the 4th quarter of 2019 to the 3rd quarter of 2020 on a y-on-y basis are shown in Table 8.

Table 8 Indonesia's Average Economic Growth

Quarter	Q4_2019	Q1_2020	Q2_2020	Q3_2020
Mean	6.1724	4.4041	-4.8365	-1.5759

Source: Processed Data

As discussed in the normality test, all economic growth data from 17 business fields are normally distributed. So that the hypothesis test used is the pairwise average difference test with the t test. Table 9 provides a summary of the p-value (Sig.) of the t-test results for Indonesia's economic growth.

Table 9 Summary of p-value (Sig.) T-test results for economic growth

	Q1_2020	Q2_2020	Q3_2020
Q4_2019	0.011	0.001	0.001
Q1_2020		0.001	0.001
Q2_2020			0.016

Source: Processed Data

One average value is different from other average values, if it has a p-value (Sig.) less than 0.05. Table 9 shows that all pairs have a p-value below 0.05. This implies that all the paired means being compared are significantly different.

The average economic growth in the 4th quarter of 2019 is significantly different from the average economic growth in the 3rd quarter of 2020. This means that the economic growth in the 4th quarter is higher than the economic growth in the next 3 quarters. The average economic growth in 1st Quarter 2020 is different from 2nd Quarter and 3rd Quarter.This also shows that economic growth in 1st Quarter 2020 was higher than economic growth in 2nd Quarter and 3rd Quarter. Average value

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in 2nd Quarter. 2020 is also significantly different from the average value in 3rd Quarter. This shows that economic growth in 3rd Quarter was better than 2nd Quarter. However, the economy in both quarters experienced contraction, i.e. economic growth was negative.

From this description, it can be concluded that the Covid-19 pandemic conditions have reduced Indonesia's economic performance.

Hypothesis Test of Capital Market Performance

To test the hypothesis on the performance of the Indonesian capital market, the data used are index data from 10 industry groups (business) which are industrial groupings that have been determined by the Indonesia Stock Exchange (IDX). Based on the index data, the return value is calculated for several months for each business sector. Then, this data is analyzed for hypothesis testing.

The average return value of all industry groups for 10 months is shown in Table 10. A positive return indicates that the average stock index rose and a negative return indicates that the stock index fell.

Table 10 Average Returns of 10 Industrial Sectors

	Dec. 2019	Jan. 2020	Feb. 2020	March 2020	April 2020	May 2020	June 2020	July 2020	Aug. 2020	Sep. 2020
Return	0.0540	-0.0765	-0.0953	-0.1673	0.0579	0.0242	0.0137	0.0500	0.0079	-0.0431

Source: Processed Data

A summary of the mean test results for paired samples between one month and another with both the T-Test and the Wilcoxon Signed Ranks Test is shown in Table 11. Paired samples that have a p-value less than 0.05 means that the mean of the two samples is significantly different. Meanwhile, the sample pair that has a p-value equal to or greater than 0.05 means that the average return value of the two samples is not different.

Table 11 P-value (Sig.) For the Average Paired Sample Returns Test

	Jan. 2020	Feb. 2020	March 2020	April 2020	May 2020	June 2020	July 2020	Aug. 2020	Sep. 2020
Dec. 2019	0.000	0.000	0.000	0.927	0.203	0.015	0.744	0.002	0.017
Jan. 2020		0.221	0.001	0.008	0.005	0.000	0.000	0.000	0.386
Feb. 2020			0.011	0.011	0.005	0.000	0.000	0.000	0.041
Mar. 2020				0.001	0.005	0.000	0.000	0.000	0.007
Apr. 2020					0.508	0.357	0.844	0.247	0.059
May 2020						0.678	0.333	0.445	0.017
June 2020							0.068	0.663	0.074
July 2020								0.019	0.074
Aug. 2020									0.059

Source: Processed Data

The average return in December 2019 is no different from the average return in April and July 2020 because it has a p-value greater than 0.05. Meanwhile, this return is significantly different from the return in other months. The average return in December 2019 is not different from the average

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return in April and July 2020, because this return is calculated based on changes in the index from one month to the next. However, if you look at the value of the composite stock price index, JCI in December 2019 (6,299,539) was higher than JCI in April 2020 (4,716,403) and July 2020 (5,149,627).

The average return in January 2020 is not different from the average return in February and September 2020, but it is different from other months. Average February returns are different from the months after. The average return in March 2020 is also different from the returns for all subsequent months. The return in April 2020 is no different from the return in the following month. Returns in May 2020 are no different from June, July, and August but different from September 2020. Returns in June 2020 are no different from returns in the following 3 months. The July return is different from the August return but not the September return. The return in August is no different from the return in September.

If a comparison of the composite stock price index values is carried out, the results of the paired stock index comparisons are shown in Table 12. The stock price index in December 2019 is significantly different from all indices in the following 9 months. This shows that the stock price index in December 2019 was higher than the index in January to September 2020. This condition continued in the stock price index in January 2020. This index is also higher than the next 8 indexes. This proves that the Covid-19 pandemic, although it has not been detected in Indonesia, has lowered the composite stock price index at IDX.

The stock index in February 2020 is no different from the index in July and August but different from the index in other months. This shows that the stock price index from March to June is smaller than the February index. The stock index in July and August is relative to February and, in September, the index is back smaller. The March 2020 stock price index is relatively the same as the index in April but different from the next 5 months. This shows that the stock index in March is the lowest stock price index. Thus, this condition shows that the stock index has been affected by the Covid-19 pandemic.

Table 12 P-value (Sig.) For the Paired Sample Index Average Test

	Jan. 2020	Feb. 2020	March 2020	April 2020	May 2020	June 2020	July 2020	Aug. 2020	Sep. 2020
Dec. 2019	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Jan. 2020		0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb. 2020			0.000	0.021	0.016	0.005	0.433	0.800	0.039
Mar. 2020				0.062	0.014	0.002	0.001	0.001	0.004
Apr. 2020					0.381	0.198	0.013	0.016	0.221
May 2020						0.311	0.011	0.017	0.336
June 2020							0.005	0.012	0.603
July 2020								0.193	0.013
Aug. 2020									0.005

Source: Processed Data

Conclusion

This research shows that the Covid-19 pandemic in Indonesia continues until the end of the observation period. This pandemic is expected to continue until the best vaccine is found to stop the spread of Covid-19.

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The pandemic has reduced Indonesia's economic growth to lead to a recession as indicated by negative growth in GDP for two quarters, namely in the 2nd and 3rd quarter of 2020. On average, during 2020 on a y-on-y basis, there were 8 fields. Businesses that are experiencing positive growth. The information and communication sector experienced the highest positive growth followed by health services & social activities. The business fields that experienced the highest negative growth were the transportation & warehousing sector and the accommodation & food supply sector.

Capital market performance, as indicated by market returns, decreased significantly during the Covid-19 pandemic and the decline in Indonesia's economic performance. All (10) industry lines forming the stock price index produced negative monthly average returns during 2020. The industry line that produced the largest negative return was infrastructure.

Suggestions

Suggestions that can be given in relation to this research are:

This research has not been completed, because the Covid-19 pandemic continues until the research observation period ends. Therefore it is necessary to do further research.

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