ANALYSIS OF THE SECTORAL STOCK PRICE INDEX ON THE IDX DURING THE COVID 19

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ABSTRACT: In this study, we want to measure the performance of the average monthly return of sectoral stock indexes in Indonesia by using the composite index (JCI) as a comparison. We want to find the winner, loser, and neutral stock indexes. We use monthly data from March 2020 to February 2021, namely the sectors: agriculture, mining, essential industry, various industries, consumption, property, infrastructure, finance, and trade. We use panel data analysis from the event study to achieve the research objectives, a combination of cross-section data and time-series data. The research results showed six sectors of the stock index as winners: agriculture, mining, essential industry, infrastructure, finance, and trade. There are three loser stock index sectors: the miscellaneous sector, consumption, and property.

Keywords: Sectoral Stock Price Index; IDX Composite; the Covid-19; Performance

INTRODUCTION

Since the first case of Covid-19 in the Chinese city of Wuhan in early 2020, Covid-19 has caused panic worldwide. This pandemic has had a significant impact on actual economic activity. By the end of March 2020, more than 100 countries worldwide had imposed partial and complete lockdowns of their respective countries. As a result, flight activity has fallen by 70% to 90% in all major cities, and this has prevented billions of people from being able to travel, including business trips (Dunford et al., 2020).

Covid-19 has prompted quarantine, factory closures, supply chain disruptions, and mobility disruptions that affect production (Ashraf, 2020). Major world countries such as China, Italy, Iran, Spain, France, Britain, and America admit that the Covid-19 outbreak has struck them. Quarantine causes delays in logistics lines, while factory closures result in lost production opportunities and employees lose income. Meanwhile, flight activities that have almost stopped have caused several cultural and tourism attractions to be postponed.

The research results conducted by Goodell (2020) stated that the Covid-19 pandemic caused unprecedented global destructive economic damage. The effects of the Covid-19 pandemic are even more significant than the economic impacts of natural disasters, such as nuclear war, climate change, or local disasters. Goodell stressed that this pandemic would have a broad effect on the financial sector including the stock market, banking, and insurance. This mark is a promising area for future research.

In Indonesia, on March 2, 2020, President Jokowi, through a press conference with his staff, announced the first positive case of Covid-19. Two Indonesian citizens were infected with the Coronavirus, namely a mother (64) and a child (31) in Depok, West Java. It was reported that they contracted Covid-19 from a Japanese citizen who had visited Indonesia. It only took 38 days, precisely April 9, 2020, since Covid-19 had infected all provinces in Indonesia. The last province to announce a Covid-19 case was Gorontalo.

According to Khan et al. (2020), during the Covid-19 pandemic that spread to all corners of the world, at first, it did not affect stock price movements in the capital market. However, with the number of victims who were confirmed positive and the number of deaths increasing, the stock market began to react negatively. The results of Liu et al. (2020) stated that after WHO concluded that Covid-19 was a pandemic, Covid-19 had caused a decline in stock prices in various major world capital markets (Liu et al., 2020).

Research on the impact of Covid-19 on stocks in Indonesia, conducted by Kusnandar & Bintari (2020) and Albab Al Umar et al. (2020), shows that Covid-19 in Indonesia affects the capital market and causes changes in trading times on the Indonesia Stock Exchange as well as giving a negative signal in the capital market. After discovering the first positive case of Covid-19 in Indonesia, stock prices generally experienced a decline (Junaedi & Salistia, 2020). Some shareholders sell their shares because they are afraid that the share price will decrease further.

Many research results prove the negative impact of the Covid-19 pandemic on stock performance in general. In contrast, this research contributes to science by pointing to specific stock sectors with better performance than the market index, winner stocks, and stock sectors whose performance is worse than the market index or called loser stocks during the Covid 19 pandemic in Indonesia. This study also implies that specific stock sectors benefit from disasters like the Covid-19 pandemic.

THEORETICAL REVIEW

Signaling Theory

In 1997, Stefan Ros introduced the signaling theory, which explains the importance of information issued by the company on investor decisions, Jogiyanto in (Azisanabely, 2018). Information is an essential requirement for investors because information provides a record of past, current, and future conditions for a company's survival. Based on this information, investors will use it to support making investment decisions.

Azisanabely (2018) explains that published information will signal investors in making investment decisions. When data is announced, investors must first interpret and analyze the information. Is the information good news or bad news? If the announcement contains a positive value, it is expected that the market will react when the statement is received by the market (Choriliyah et al., 2016).

Signaling theory explains that stock prices that occur in the market reflect information about the company. For example, a good company value can be positive, and a lousy company value can be damaging. The motivation of investors to invest is to make a profit, so investors will not support their funds in companies that have a lousy deals. The Covid-19 pandemic has affected companies listed on the capital market, as shown in financial statement information, cash flow, and debt.

Efficient Market Hypothesis

A capital market is said to be efficient if the market reflects all available information for a traded security (Azisanabely, 2018). The general information includes historical information, current information, and opinion information circulating in the capital market that can affect changes in stock prices. Jogiyanto in Azisanabely (2018) explains that in an efficient market, securities will always be traded at their fair value so that no one can obtain abnormal returns. The occurrence of price changes in a market is determined by supply and demand. For example, suppose there is new information entering the market related to the company's value. In that case, this information will be used by investors to analyze and interpret the company's value. Because the price reflects the data obtained by market participants, according to EMH information, it is said that the price formed fully reflects the information system (Azisanabely, 2018).

The essence of EHM is that if the market is efficient, that is, information is not hindered from entering the market. Today's stock prices reflect today's announcement and news and have nothing to do with the previous day's stock prices. EHM implies that investors will not get abnormal returns if the market is efficient unless there is a gap between available information and efficiency in the stock market. On the other hand, if the market is not efficient, the price mechanism cannot guarantee an efficient allocation of capital in the market (Hamid and Akash, 2010).

Prospect theory

Prospect theory explains how an investor makes decisions in uncertain conditions. According to prospect theory, an investor will seek information first, then make several decision concepts or frames. After the decision concept is available, an investor will choose one idea that produces the most significant expected utility (Kahneman & Tversky, 1979). The investors will avoid risk or risk aversion in conditions of uncertainty. If the investor is in a profit position, the investor tends to avoid trouble, while if the investor is in a loss position, the investor tends to be more willing to face risk or risk-seeking.

Prospect theory is based on risk-averse investor behavior that results in a negative relationship between risk and return (Barber & Odean, 2008). Daniel & Hirshleifer (2015) also assert that investors with higher returns have a positive relationship between risk and return and avoid risk. Meanwhile, investors with low returns have a negative relationship between risk and return. Based on this review, prospect theory explains the Covid-19 pandemic phenomenon where stock returns are negatively associated with risk.

Event Study Theory

Event study theory is a type of research that observes the effect of information announcements on security prices. Generally, event study research is related to how quickly information is reflected in stock prices. (Azisanabely, 2018). An event study is also a tool to test stock price movements against events such as stock splits and dividend distributions. Furthermore, an event study is a study to determine the market response and its effect on the published information.

Based on previous studies, the event study method was chosen to investigate the abnormal returns of sectoral stock indexes affected by the Covid-19 pandemic. We examined the impact of the unexpected Covid-19 pandemic on the performance of sectoral stock indexes on the Indonesia Stock Exchange. Due to the short observation period of the Covid-19 pandemic, an event study was conducted to determine the unexpected impact of the Covid-19 pandemic on the performance of sectoral stock indexes.

Abnormal Return Theory

Abnormal return is the excess of actual return over average or expected returns (Azisanabely, 2018). Abnormal return is the difference between realized and expected returns and can be used to see stock price reactions to information. Thus, the abnormal return can be interpreted as the difference between the learned and expected returns. If the information published in the capital market contains information content, there will be a market reaction. The market reaction is indicated by a change in the price of a stock. The market reaction that occurs can be measured using abnormal returns. Estimating the expected return can be done by using the mean-adjusted model, market model, and market-adjusted model.

Previous Research

In general, information is proven to be used in forecasting stock price movements (Tuna, 2021). Barber and Odean (2008) confirm that investors in deciding to buy security need the information to get the best stakes among the guards in the capital market. Barber and Odean's approach is known as the "price pressure hypothesis" or "attention theory." In addition, Tuna (2021) also provides evidence that investors will always seek information through the media to find the best stocks to get high returns.

Furthermore, differences of opinion about how good or bad news affect stock returns are still a medium for researchers among researchers. Cohen et al. in Tuna (2021), and Akıncı and Chahrour (2018), argue that only terrible news affects investment decisions. However, according to Narayan in Tuna (2021), positive and negative news influences investment decisions. While several other researchers, such as Calomiris and Mamaysky (2019), Liebmann et al. in Salisu and Vo (2020), and Tupe-Waghmare (2021), find specific information such as oil price news and economic news that affect stock prices.

Regarding the impact of the Covid-19 pandemic on stock prices, Ashraf (2020) conducted research in 64 countries using data on the number of confirmed Covid-19 and daily deaths and their effect on stock prices. Ashraf's research results found that the market responded negatively to the increase in confirmed cases of Covid-19 and the increase in the daily death toll. In addition, the research results by Baker et al. (2020) found that information on the Covid-19 pandemic in various media had resulted in the volatility of stock prices being very high compared to all infectious diseases that have ever existed. Research by Alfaro et al. (2020) found that the equity market in the United States experienced a decline in response to the Covid-19 pandemic. We aim to complete this research by examining the stock market against the Covid-19 pandemic using monthly sectoral stock index data on the Indonesia Stock Exchange from March 2020 to February 2021.

METHODOLOGY

To examine the effect of the Covid-19 pandemic on the performance of sectoral stock indexes in Indonesia, we used a panel data technique with an event study approach. The use of event study techniques is based on the following reasons. First, event study research is generally concerned with how quickly information entering the market can be reflected in stock prices. Second, event study research describes an empirical financial research technique that allows an observer to assess the impact of an event on a company's stock price (Ashraf, 2020). Third, panel data analysis can minimize multicollinearity, heteroscedasticity, and estimation bias (Baltagi, 2005; Wooldridge, 2010).

To find the sectoral stock indexes that perform better than the composite index, called winners, perform worse than the Composite Index, which is called losers, and achieve more or less the same as the composite index, which is called neutral. Therefore the test measures include: (1) calculating the average of all monthly returns of sectoral stock indices, (2) calculating the average monthly return of the composite index, and (3) comparing the average monthly return of the sectoral stock index with the composite index.

The following sequence of analyses was carried out to get a conclusion on the sectoral stock performance of the Winner and Loser groups:

Calculating individual stock returns (Ind), sector (Sec), and IHSG (CI):

$$Ri, Ind = \frac{Pi, Ind - Pi, Ind - 1}{Pi, Ind} \quad \dots\dots\dots\dots\dots\dots\dots \quad (1)$$

$$Ri, Sec = \frac{Pi, Sec - Pi, Sec - 1}{Pi, Sec} \quad \dots\dots\dots\dots\dots\dots\dots \quad (2)$$

$$Ri, CI = \frac{Pi, CI - Pi, CI - 1}{Pi, CI} \quad \dots\dots\dots\dots\dots\dots\dots \quad (3)$$

Calculating the average stock returns of sectors:

$$Ri, stock\ return\ of\ sector = \frac{Ri, mar + Ri, apr + Ri, mei + \dots + Ri, feb}{N} \dots\dots\dots \quad (4)$$

Comparing the average sectoral stock return (Sec) with the IHSG (CI):

Winner = $R_i, Sec_i > R_i, IHSG$ …………………. (5)
Loser = $R_i, Sec_i < R_i, IHSG$ ……………………. (6)

RESULTS

After calculating the average return of the sectoral index and composite index, the average return is calculated during the research period of 12 months and then given the conclusion of the sectoral index included in the winner group or loser.

Table 1. Sectoral Performance in Indonesian Stock Market

Variable	Monthly Returns 2020-2021												Average	Performance
	Mar	Apr	Mei	Jun	Jul	Aug	Sep	Oct	Nov	Des	Jan	Feb		
Composite Index	-0,168	0,039	0,008	0,032	0,045	0,027	-0,068	0.053	0.094	0.065	-0.020	0.065	0.0145	
Agriculture	-0,198	0,032	0,007	0,064	0,124	0,022	-0,041	0.055	0.098	0.137	-0.078	0.041	0.0220	Winner
Mining	-0,116	0,020	0,025	-0,011	0,119	0,001	-0,048	0.065	0.181	0.144	-0.011	0.082	0.0375	Winner
Basic Industry	-0,236	0,314	-0,021	-0,032	0,051	-0,007	-0,067	0.075	0.133	0.066	-0.009	0.043	0.0258	Winner
Misc_Industry	-0,259	0,001	0,169	0,011	0,060	0,046	-0,102	0.168	0.000	0.128	-0.010	-0.068	0.0120	Loser
Consumer	-0,048	0,098	-0,008	-0,003	0,026	-0,026	-0,054	-0.013	0.019	-0.004	-0.074	0.053	-0.0028	Loser
Property	-0,208	-0,133	0,102	-0,003	-0,053	-0,049	0,148	-0.029	0.124	0.067	-0.081	0.036	-0.0066	Loser
Infrastructure	-0,159	0,138	-0,057	0,022	0,022	0,064	-0,083	0.029	0.168	0.059	-0.037	0.110	0.0231	Winner
Finance	-0,208	-0,043	0,017	0,099	0,058	0,015	-0,123	0.001	0.211	0.059	-0.003	0.098	0.0150	Winner
Trade	-0,103	0,008	-0,002	0,000	0,023	0,022	0,003	0.019	0.059	0.123	0.046	0.078	0.0230	Winner

Based on the data in table 1, the average return on the Composite Index during the 12 months of the Covid-19 pandemic in Indonesia has increased by 1.4%. Based on the abnormal return theory, stocks that outperform the market index are said to be winner stocks, while stocks that are lower than the market index are said to be loser stocks. Using the Composite Index data, six sectoral indices outperform the Composite Index or winner stocks, namely agriculture, mining, primary industry, infrastructure, finance, and trade. Meanwhile, three sectoral indexes are lower than the Composite Index or loser stock: various sectors, consumers, and trade.

DISCUSSION

Winner Group Stock Index

Shares of agricultural sector companies recorded a reasonably good stock performance during the Covid 19 pandemic. During the fourth quarter of 2020 and the first quarter of 2020, exports of agricultural products experienced an increase in line with the rise in demand for agricultural commodities in various countries. The export value of Indonesia's agricultural sector in 2020 is US$ 4.1 billion, with growth reaching 14.02 percent. As we know, 2020 is the beginning of the Covid-19 pandemic in Indonesia. However, this condition did not harm exports from the agricultural sector and even increased value. Likewise, in January-March 2021, exports from the farm sector reached US$ 3.83 or increased by 4.1%. The increase in exports from the agricultural industry during the pandemic has become good news or a positive signal for investors in the capital market.

A mining sector is an industrial group that is not too affected by Covid-19 in Indonesia. As is known, China is the world's largest consumer of mining commodities such as coal and nickel because it is the main center of global manufacturing. The economic recovery in China since December 2020 has pushed up the prices of mining commodities, including because several coal mines in China have not yet started operating. Based on the 2020 Central Statistics Agency report, the export value of the mining sector recorded the highest growth among the other sectors. The mining sector's export value was recorded at US$ 37.9 billion,

up 91.15% from the previous year. The increasing export of the mining sector has become good news in the mining sector.

Although the primary industry sector did not perform well at the beginning of 2020, entering the first quarter of 2021, it experienced a significant increase in line with the economic recovery. There has been an increase in demand for this sector's exports to China and Japan in Middle Eastern countries. The infrastructure sector has also recently led to significant index moves. This happened because there was a sentiment in managing the endowment fund or Sovereign Wealth Fund/SWF Indonesia and changes in people's lifestyle patterns after the Covid-19 pandemic requiring the latest infrastructure. This has become good news in the infrastructure sector during the COVID-19 pandemic.

The financial sector has continued the trend of improving performance since early 2021 in line with the government's stimulus, which is marked by improving credit demand in line with the continued recovery in performance and activities of corporations, households, and small business enterprises. The banking industry in this sector makes a positive contribution, especially digital banking, which significantly helps the community during social restrictions during the COVID-19 pandemic.

In general, the trade sector entered the fourth quarter of 2020 showing improved performance, especially related to the domestic economic recovery, i.e., the hotel and tourism sub-sector, which was previously closed, was allowed by the government with a specific capacity. This helped improve the performance of the trade sector. Opening public service facilities such as markets and education, including hotels and restaurants, has become good news in the trade sector.

Based on the Signaling Theory, stock prices are influenced by information from various media circulating in the capital market. If the information is good news, it will be a positive signal for investors to buy and push stock prices up, and vice versa. In particular, the research results of Baker et al. (2020) found that information on the COVID-19 pandemic in various media had resulted in very high stock price volatility. In comparison, the research results by Barber and Odean (2008) provide evidence that investors decide to buy or sell a stock based on available information.

The results of our study indicate that information in the form of an increase in exports of agricultural products has become a positive signal that has pushed stock prices in the farm sector to beat the JCI. Likewise, for stocks in the mining sector, where information on an increase in the price of new coal mines has become a positive signal for investors, pushing the performance of mining sector stocks to beat the JCI. In the primary industrial sector, information on an increase in exports of primary industrial products has become a positive signal that has pushed stock prices to increase. In the financial industry, the ability of the financial sector to provide digital services has become essential good news in the capital market. Even though the government enforces PSBB or PPKM, the financial industry can still provide services to customers.

In line with the results of Narayan's research (2019), the results of our study prove that oil prices will be the primary information that is proven to affect the share prices of oil-producing companies in the capital market. Likewise, Calomiris

and Mamaysky's (2019) research results and Salisu and Vo's (2020) prove that specific information such as oil price news and economic news affect stock prices based on the industrial sector. Our research results, which were carried out specifically in the conditions of the COVID-19 pandemic, show that the signaling theory can explain the phenomenon of rising stock prices in the sectors mentioned above caused by information that is good news.

Loser Group Stock Index

The miscellaneous industry sector is one of the sectors that has not performed well during the COVID-19 pandemic. The leading indicator of this sector is the decline in car sales due to the weakening of people's purchasing power during the pandemic. The development of the number of car sales is often used to measure the performance of this sector. During the pandemic, car sales recorded a significant decline. Throughout 2020, sales fell 48 percent to 532 thousand units from 1 million units in 2019. The most profound decline occurred after President Joko Widodo announced the first case of Covid-19. This has become bad news in this sector.

Meanwhile, several big-cap issuers experienced a decline in revenue and net profit performance in the consumption sector. Social restrictions are one of the triggers besides weakening people's purchasing power. Based on a report from the Central Statistics Agency, they have released inflation data in 2020 of 1.68%, which shows the occurrence compared to the previous year. The deflation made investors reluctant to buy shares in this sector. In addition, another negative sentiment came from the increase in cigarette excise duty by an average of 12.5%, which will be a burden on this sector.

Moreover, the property sector is the larger group affected by Covid-19. A Bank Indonesia survey noted that home sales in the primary market during the first three months of this year fell 30.52 percent or more profound from the previous quarter of -16.33 percent compared to the same quarter last year of 23.77 percent. During the COVID-19 pandemic, buying a house was not a top priority for the community amid the Covid-19 pandemic. The decline in home sales figures is a negative signal for investors.

The results of research by Tuna (2021) and Akıncı and Chahrour (2018), which also base their research on the signaling theory, prove that awful news has more influence on stock prices. Information in the form of a decrease in the number of car sales in this study, which is one indicator of the performance of the various industrial sectors, received more attention in the capital market than other positive economic news. The decline in car sales has become bad news so that the performance of stocks in the various industrial sectors is inferior to the JCI. Likewise, in the consumption sector, where information on the implementation of restrictions on community activities in the form of PSBB and PPM has proven to be bad news. The closure of several businesses caused a loss of income for the community, resulting in a decrease in purchasing power for consumption.

Furthermore, information on the decline in property sales due to the decrease in people's purchasing power has become bad news in the property sector. In

addition, during the COVID-19 pandemic, people tend to delay buying property. Our research results, which were carried out specifically in the conditions of the COVID-19 pandemic, show that the signaling theory can explain the phenomenon of falling stock prices caused by information that is bad news.

FURTHER STUDY

Our study limits the observation period to only 12 months since the first confirmed case was found in Indonesia using month data on each sectoral stock index. Future research can be developed using a more extended observation period. We also suggest further research to deepen the data using data on the number of Covid-19 cases but break it down into the number of positive points, recoveries, and deaths.

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