THE IMPACT OF COVID-19 ON TRADE VOLUME AND STOCK PRICE MOVEMENTS OF SOES IN THE CONSTRUCTION SECTOR
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Abstract
The condition of Indonesia, which is currently being hit by the Covid-19 pandemic, is affecting the stock market and economic growth. One of the events that allegedly caused changes in prices and trading volume in 2020 was the Covid-19 pandemic, which not only hit the global stock market but also in Indonesia. The economic turmoil caused by the Covid-19 pandemic has hit Indonesia with the least impact in various sectors. A possible risk that investors and capital market analysts worry about is a recession and an economic crisis due to an economic slowdown. The Composite Stock Price Index (IHSG) experienced a decline, especially in the construction sector. The research method used in this research is quantitative research. Data collected in the form of secondary data from the IDX. This method uses a different test analysis model test t-test. The sample in this study consisted of 4 stocks, namely BUMN shares which were included in the construction stock sector, namely: Adhi Karya (Persero) Tbk, PP (Persero) Tbk, Wijaya Karya (Persero) Tbk, and Waskita Karya (Persero) Tbk. The variable used is the volume of stock prices before and after Covid-19. The Covid-19 pandemic in Indonesia affected the capital market and caused changes in trading times on the Indonesia Stock Exchange.

Keywords: Covid-19, share price, trading volume, construction shares.

INTRODUCTION
The stock market is an important source of funding for a company. Companies that have gone public can add sources of funds through the sale of company ownership in the capital market. The funds obtained are a source of long-term funding so that the company can optimize these sources of funds to improve performance. What the company has to do then is to maintain and increase investor confidence by providing the best performance. This is important so that a lot of research has been carried out, both in Indonesia and even in the world related to the stock market (Bose and Mukherjee, 2005). In addition, the development of the stock market will also make a positive contribution to economic growth (Sulistyowati and Rahmawati, 2020). In other studies, it is stated that there is a positive relationship between an efficient stock market and economic growth, both in the short and long term, and there is an indirect transmission mechanism between the influence of stock market developments on investment (Masoud, 2013).
Investors tend to choose to invest in countries that have low unemployment rates, relatively low social and income inequality, low crime rates, and relatively stable security and political conditions (Samsul, 2018). Thus, the more stable the economic and political conditions of a country, the better and more stable the stock market will be.

Stock market panic occurred in Indonesia in 1997-1998 during the economic crisis. At that time economic conditions were unstable and had an effect on the stock price on the exchange (Utami and Rahayu, 2003). The subprime mortgage crisis of 2008 that originated in the United States and then spread to other countries also caused industrial sectors to decline and ultimately also lower stock prices (Peicuti, 2013). Crisis or disaster conditions can affect stock market conditions, at the time of the flood disaster in DKI Jakarta in 2013 caused an abnormal return but at that time the trading volume was no different significantly because the disaster conditions were quickly overcome by the government (Yuwono, 2013).

One of the events that are suspected to cause changes in prices and trading volumes in 2020 is the Covid-19 pandemic, which has not only hit global stock markets but also in Indonesia. The economic turmoil caused by the Covid-19 pandemic has hit Indonesia, which has had the least impact in various sectors. The possible risks that investors and capital market analysts are worried about are recessions and economic crises due to an economic slowdown. Various businesses in the real sector have been hit by the Covid-19 pandemic, so many business and production activities have been disrupted and some have even decided to stop. The impact of this, of course, is that many employees are forced to be laid off, thereby reducing purchasing power in the community. The economic turmoil due to Covid-19 became one of the historic moments because it had an impact on the management of state finances until the State Budget (APBN) was changed twice and there were various government efforts to restore the national economy. To prove whether these events have more impact on the conditions of the Indonesian capital market, a test of the information content of these events will be carried out using an event study.

Currently, the Covid-19 pandemic is spreading all over the world. At first this did not affect the stock market, but with more confirmed victims the stock market reacted negatively (Khan et al., 2020). This also caused prices in the stock market to decline, especially after WHO declared that Covid-19 was a pandemic (Alali, 2020) and caused negative abnormal returns (Liu et al., 2020).

The Covid-19 pandemic in Indonesia affected the capital market and caused a change in trading times on the Indonesia Stock Exchange and this is a negative signal (bad news) that causes investors to be more interested in selling share ownership (Kusnandar and Bintari, 2020). The COVID-19 pandemic conditions also affected stock market dynamics (He et al., 2020; Junaedi and Salistia, 2020; Liu et al., 2020), caused stock markets around the world to decline (Collins, 2020), and increased inefficiency in stock market (Lalwani and Meshram, 2020). In Indonesia, this also has
a negative impact on the capital market and affects investors in making investment decisions (Pitaloka et al., 2020).

Several studies have been conducted regarding the effect of Covid-19 on the stock market, but there are no recommendations that must be made by the parties involved in the stock market, so the author will describe how the impact of Covid-19 on the volume and stock price of SOEs in the construction sector in Indonesia. what are the recommendations for the government, and what solutions are offered for companies (issuers) and investors?

**Formulation Problem**

1. What is the impact of covid-19 on the trading volume of BUMN shares in the construction sector?
2. What is the impact of Covid-19 on the stock price movements of BUMN in the construction sector?

**Research Purpose**

1. To test the impact of covid-19 on the trading volume of BUMN shares in the construction sector.
2. To test the impact of covid-19 on the stock price movement of BUMN the construction sector.

**LITERATURE REVIEW**

**Efficient market theory**

Markowitz (1952) shows the relationship between investor confidence and choice in the context of choosing a portfolio that has a smaller or minimum risk expectation or expectation. Fama (1970, 1998) defines an efficient market as a market that provides perfect stock price information for investors. From this explanation, it can be concluded that an efficient capital market explains the phenomenon of the COVID-19 pandemic, where stock returns are positively correlated with systematic risk. This means that the less information the company provides to investors regarding its stock returns, the less interested investors will be to invest their capital in the company. The existence of the COVID-19 pandemic further strengthens the existence of systematic risk, so that investors will be risk averse (Budiarso et al., 2020).

The capital market is said to be efficient if the stock price reflects the overall information available in the market. All information must be available to investors, to know everything about the company and the company's stock. The concept of the Efficient Market Hypothesis (EMH) was first put forward by Fama (1970) in Rahman and Ervina (2017) which essentially states that in an efficient market, securities in the form of convertible bonds will always be traded at their fair value so that no one also able to obtain abnormal returns, after adjusting for risk, using existing trading strategies. In other words, the price formed in the market is the result of a reflection of all available information. Fama (1970) Rahman and Ervina (2017) made adjustments to the EMH
concept supported by empirical evidence and grouped market efficiency into three forms, namely:

**The Weak Efficient Market Hypothesis**
Market efficiency is said to be weak (weak form) because in the decision-making process of buying and selling shares, investors use past price and volume data. Based on that past price and volume various technical analysis models are used to determine the direction of the price whether it will go up or down. The assumption in this hypothesis is that market prices have reflected past financials and data in the form of prices and trading volumes in the past, should not be related to future finances. So, investors cannot get a little profit by using trading rules based on past information contained in the capital market.

**The Semistrong Efficient Market Hypothesis**
Market efficiency is said to be half strong (semistrong-form) in the process making decisions for buying and selling investors’ shares using price data past, past volumes, and all published information such as financial reports, annual reports, stock exchange announcements, information international finance, laws and regulations, political events, legal events, social events, and others that can affect national economy. The assumption in this hypothesis is that when investors make decisions after new information is published should be do not earn abnormal profits because the stock price has reflected all published information. Stock price will react quickly and accurately to adjust to the desired price level only when public information is announced.

**The Strong Efficient Market Hypothesis**
Efficiency is said to be strong (strong form) because investors use data more complete information, namely past prices, past volumes, published, and private information that is not published publicly general. Conditions where stock prices do not only reflect information published only, but also reflects information that is not published which is known as insider information because possessing this information are parties within the company. So that there are no investors who get abnormal because between investors and companies have the same information.

Price changes in a competitive market are determined by the size of demand and supply. When new information enters the market relating to an asset, this information will be used to analyze and interpret the value of the asset in question. The price is a reflection of the information obtained by market participants as a whole, so that if the price contains information, it can be said that the price formed fully reflects the information system. The essence of the EMH theory is that if information is not blocked and reflected in stock prices in the market, tomorrow's stock prices will reflect tomorrow's information and news and are not related (independently) with today's stock prices.

The implication of the EMH theory is that no investor can obtain abnormal returns unless there is a gap between available information and efficiency in the stock market.
In the end, if a market is not efficient, the existing price mechanism cannot guarantee an efficient allocation of capital in the economy which can have a negative impact on the economy in aggregate (Hamid and Akash, 2010 in Rahman and Ervina (2017)).

**Signaling theory**

According to Fahmi (2012: 100), signaling theory is a theory that discusses the ups and downs of prices in the market so that it will have an influence on investor decisions so that information that occurs from the condition of a company's shares always has an effect on investor decisions as the party who catches the signal. This signal is in the form of information about what management has done to realize the owner's wishes. Signals can be in the form of promotions or other information stating that the company is better than other companies. Signaling theory is a theory that explains to external parties that can be used to reduce information asymmetry. For an investor, information is an important thing that must be known before making investment decisions. Complete, relevant, accurate and timely information is needed by investors in the capital market as an analytical tool to make decisions. Signaling theory states that good quality companies will intentionally give signals to the market, thus the market can be expected to distinguish good quality and poor-quality companies. In order for the signal to be good, it must be captured by the market with a good perception and not easily imitated by companies that have poor quality. Information published as an announcement will provide a signal for investors in making investment decisions. If the announcement will contain a positive value, it is expected that the market will react when the announcement is received by the market (Choriliyah et al., 2016). Signals from circulating information can influence the actions taken by investors. Investor reactions are reflected in stock prices and trading volumes surrounding the release of the information. To find out whether there is an investor reaction related to information signals from the company, an event study can be used.

Signaling theory or signal theory developed by Ros in 1997, states that company executives who have better information about their company will be encouraged to convey this information to potential investors so that the company's stock price increases. The positive thing in signaling theory is that companies that provide good information will distinguish them from companies that do not have good news. By informing the market about their condition, signals about good future performance given by companies whose past financial performance was not good will not be trusted by the market.

According to Jogiyanto (2013), signaling theory emphasizes the importance of information issued by the company on the investment decisions of parties outside the company. Information is an important element for investors and businesspeople because information essentially presents information, notes or descriptions for past, current and future conditions for the survival of a company and how the securities market will be. Complete, relevant, accurate and timely information is needed by investors in the capital market as an analytical tool to make investment decisions.
Jogiyanto (2013), states that information published as an announcement will provide a signal for investors in making investment decisions. If the announcement contains a positive value, it is expected that the market will react when the announcement is received by the market. When the information is announced and all market participants have received the information, market participants first interpret and analyze the information as a good signal (good news) or a bad signal (bad news). If the announcement of the information is a good signal for investors, there will be a change in the volume of stock trading.

The relationship between signaling theory and company value is that a good company value can be a positive signal and vice versa, a bad company value can be a negative signal. This is because the motivation of investors to invest is to make a profit, so that companies with bad value tend to be avoided by investors. In other words, investors will not invest their funds in companies that have bad value. Activity trading volume

Trading activity
According to Akbar et al. (2019), stock trading volume (trading volume activity) is an indicator used to measure the liquidity of a stock. If statistically trading stocks a few days after the event there is an increase compared to a few days before the event, then it can be said that there is an increase in liquidity of stock trading after the occurrence of an event.

1. Stock
Stocks are one of the most widely used capital market instruments attractive to investors, because it is able to provide a high rate of return interesting. Shares are papers that clearly state the nominal value, name, company, and followed by the rights and obligations that have been explained to each holder, Fahmi (2012:81). Meanwhile, according to Darmadji and Fakhruddin (2012:5) "Share (stock) is a sign of participation or ownership of someone or entity in a company or limited liability company. Shares in the form of a sheet a paper that explains that the owner of the paper is the owner of the company who issued the securities. Based on the understanding of the experts above it can be concluded that shares are proof of ownership of a company in which the nominal value, company name, and follow-up are listed with the rights and obligations explained to each holder.

2. Stock Price
The stock price is the closing price of the stock market during the observation period for each type of stock sampled and its movement is always observed by investors. One of the basic concepts in financial management is that the goal of financial management is to maximize the value of the company. For companies that have gone public, this goal can be achieved by maximizing the market value of the share price in question. Thus, decision making is always based on considerations of maximizing the wealth of shareholders.

Sartono (2011: 192) states that stock prices are formed through the mechanism of supply and demand in the capital market. If a stock is in excess of demand, the stock
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Price tends to rise. On the other hand, if there is an excess supply, the stock price tends to fall. According to Hartono 14 (2013:157) the notion of share price is "The price of a share that occurs in the stock market at a certain time determined by market participants and determined by the demand and supply of the shares concerned in the capital market".

According to Brigham and Houston (2011:231) stock prices are "The stock price determines the wealth of shareholders. Maximizing shareholder wealth translates into maximizing the company's share price. The price of the stock at any given time will depend on the cash flows expected to be received in the future by the “average” investor if the investor buys the stock. Based on the understanding of the experts above, it can be concluded that the stock price is the price formed according to demand and supply in the stock trading market and is usually the closing price.

RESEARCH METHODS

This research is a quantitative study where the object of research on the shares of state-owned enterprises in the consumption sector with the announcement of the first case of Covid-19 on February 4, 2020. This research was conducted with the aim of testing and analyzing the impact of Covid-19 on stock prices and trading volume. The number of samples in this study amounted to 4 shares, namely SoE shares that are included in the construction stock sector, namely:

1. Adhi Karya (Persero) Tbk
2. PP (Persero) Tbk.
3. Wijaya Karya (Persero) Tbk.
4. Waskita Karya (Persero) Tbk.

The window period used is 60 days, which is 30 days before the announcement of the first case of Covid-19 patients in Indonesia (t-30) and 30 days after the announcement of the first case of Covid-19 patients in Indonesia (t +30). The determination of this window period is expected to be the market to react fully to the events that occur and can be seen the speed of market reaction to those events.

Saham BUMN sector konstruksi dengan kode saham sbb:

1. ADHI.
2. PTPP
3. WIKA
4. WSKT

The data analysis method used is the t-test analysis model. An explanation of the testing stages is presented as follows:

1. Descriptive analysis test.
2. Hypothesis testing where in this study the t-test was used to analyze differences in price movements and trading volume activity before and after the announcement of
the first case of Covid-19 in Indonesia. Figure 1. shows the research model that presents the variables studied.

![Figure 1](image)

**Volume Stock price**  
**Before & After**  
**Volume Stock price**

**Figure 1**  
Frame of mind

**RESULT AND DISCUSSION**

**Trading volume**
On the movement of the volume of shares of state-owned enterprises in the construction sector, on the t-test test as follows:

<table>
<thead>
<tr>
<th></th>
<th>Saham BUMN Konstruksi before covid</th>
<th>Saham BUMN Konstruksi after covid</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mean</strong></td>
<td>18,491,497.50</td>
<td>25,615,327.50</td>
</tr>
<tr>
<td><strong>Variance</strong></td>
<td>6.02974E+13</td>
<td>1.76056E+14</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>30</td>
<td>30</td>
</tr>
<tr>
<td><strong>Pearson Correlation</strong></td>
<td>-0.114141178</td>
<td></td>
</tr>
<tr>
<td><strong>Hypothesized Mean Difference</strong></td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Df</strong></td>
<td>29</td>
<td></td>
</tr>
<tr>
<td><strong>t Stat</strong></td>
<td>-2.420430718</td>
<td></td>
</tr>
<tr>
<td><strong>P(T&lt;=t) one-tail</strong></td>
<td>0.010997145</td>
<td></td>
</tr>
<tr>
<td><strong>t Critical one-tail</strong></td>
<td>1.699127027</td>
<td></td>
</tr>
<tr>
<td><strong>P(T&lt;=t) two-tail</strong></td>
<td>0.021994289</td>
<td></td>
</tr>
<tr>
<td><strong>t Critical two-tail</strong></td>
<td>2.045229642</td>
<td></td>
</tr>
</tbody>
</table>
The data in Table 1 illustrates that there was an increase in the volume of stock transactions in the construction sector BUMN before and after the COVID-19 pandemic occurred. The increase in trading volume in shares of SOEs in the construction sector was caused by selling actions by investors. Investors generally take action to sell due to the implementation of large-scale social restrictions PSBB throughout Indonesia.

The construction company was terminated due to the PSBB policy and there were no ongoing operational processes due to the implementation of WFH (work from home) for employees. This is what causes the trading volume of BUMN shares in the construction sector to increase.

Based on Table 1 data, it shows a t-test of -2.420430718 which supports the hypothesis that the COVID-19 pandemic has had a major impact on stock price movements in the construction sector SOEs.

**Stock price**

**Table 2**

**The results of the analysis of state-owned stock prices in the construction sector**

<table>
<thead>
<tr>
<th>Saham BUMN Konstruksi before covid</th>
<th>Saham BUMN Konstruksi after covid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>1,538.83</td>
</tr>
<tr>
<td>Variance</td>
<td>7121.652299</td>
</tr>
<tr>
<td>Observations</td>
<td>30</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.874306841</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
</tr>
<tr>
<td>Df</td>
<td>29</td>
</tr>
<tr>
<td>t Stat</td>
<td>11.61152603</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>1.00338E-12</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.699127027</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>2.00677E-12</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.045229642</td>
</tr>
</tbody>
</table>

Based on Table 2, it shows a decrease in the mean as indicated by before the COVID-19 pandemic 1,538.83 decreased to 1,207.38. This is due to the selling action taken by investors on the implementation of PSBB and WFH (work from home).
CONCLUSIONS AND SUGGESTIONS

Conclusion
The shares of state-owned enterprises in the construction sector, based on the analytical data used, show that trading volume and stock prices have a significant effect due to the COVID-19 pandemic.

Implication
So that the government immediately runs the SWF (sovereign wealth fund) program so that it can help fund the gap between the APBN and the budget needed for infrastructure development. This is an advantage for construction issuers, especially SOEs because project funding is predicted to be easier SWF will help attract foreign investors in infrastructure project development through the acquisition of projects that are already operational or participate in consortiums to help fund new projects and help lift pressure on the balance sheet of contractors. SOEs that are already quite strict through divestment of toll road assets or capital and the construction of new projects in the future and can increase the price and trading volume of BUMN shares in the construction sector.

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