Analysis of Tin Stock Investment Projections during the Covid-19 Pandemic

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Abstract

Indonesia and other countries in the world are still experiencing the Covid-19 pandemic and continue to struggle for the country's health and economic recovery. The government along with all elements of society are tackling the impact of Covid-19 by implementing 3M (wearing masks, washing hands, maintaining distance), implementing health protocols, vaccination programs and implementing Large-Scale Social Restrictions (PSBB). The community collaborates on advances in smartphone technology with PSBB activities in their daily activities. With the advancement of technology platforms, it is very easy for people to transact in the stock investment mechanism and have an impact on people's lives.

99% of Indonesia's tin mineral potential is in the Bangka Belitung Archipelago Province, while the rest is in the Riau Islands, Riau and West Kalimantan. The economic condition of the Bangka Belitung Islands province is still supported by the mining and quarrying sector, especially tin mining and the tin processing industry, in line with Irawan's study. So the tin stock investment instrument is still one of the instrument models that can be used during the Covid 19 pandemic. In the world of stock investment, there are two types of analysis known, namely fundamental analysis and technical analysis. Technical analysis attempts to test historical data in predicting stock prices in order to buy or sell an investment instrument.

Keywords: Covid 19, Stocks, Tin, Investment

1.Introduction

Indonesia and other countries in the world are still experiencing the Covid-19 pandemic and continue to struggle for the country's health and economic recovery. The government along with all elements of society are tackling the impact of Covid-19 by implementing 3M (wearing masks, washing hands, maintaining distance), implementing health protocols, vaccination programs and implementing Large-Scale Social Restrictions (PSBB). The implementation of this PSBB has a new normal impact on the pattern of life in society. Communities are starting to reduce activities that gather in large numbers either for work or to make ends meet.

On the other hand, the industrial world has changed from the manual era to the digital era. The current digital era has entered the digital 4.0 era, where all data can be obtained at one time so that decisions can be made quickly. In this digital era, all sectors are starting to adjust their business or business activities using digital. In carrying out investment schemes, especially the capital market, it also adapts to digital-based technology system platforms. Today's society is also starting to adjust to technological advances and making financial investments, one of which is stock instruments. The community collaborates on advances in smartphone technology with PSBB activities in their daily activities. With the advancement of technology platforms,

Increasing mining investment still has future prospects and has a greater effect on the economy and other impacts it causes (Connolly & Orsmond, 2011). In fact, the condition of the Indonesian economy is influenced by the movement of fluctuations in the prices of petroleum commodities and tin (Hegerty, 2016). BPS data shows that the economic condition of the Bangka Belitung Islands province is still supported by the mining and quarrying sector, especially tin mining and the tin processing industry, in line with Irawan's study (2014). So tin stock investment instruments are still one of the instrument models that can be used during the COVID-19 pandemic, where

according to Francis, JC (1993) investing in stocks depends on fluctuations in stock prices on the stock exchange, interest rate volatility, market volatility, fundamental and financial performance. a company, government regulations, and other factors. One of the factors that can be used as an analysis of tin stock investment instruments is the movement of tin stock prices during the Covid 19 pandemic which is presented in Figure 1.

Source: Yahoo Finance, 2021

Figure 1. Movement of tin stock prices during the Covid 19 pandemic

Based on Figure 1, it can be seen that during the Covid 19 pandemic, the price movement of tin stocks graphically increased, this made tin stocks an attractive investment instrument for investors. In every stock trading transaction, investors make choices in buying, holding and selling shares. So it needs accurate analysis and can be used as a basis for making investment decisions.

Based on the empirical and theoretical background of tin share price movements, technical analysis, selected data characteristics (time series). then the ARIMA method will be used as an analytical tool to predict tin stock price movements in the future. So that in this study the authors will conduct research with the title "Tin Stock Investment Projection Analysis During the COVID-19 Pandemic".

2. Literature Review

The capital market or capital market currently has an important role for the economy of a country, the economic progress of a country cannot be separated from the role of the capital market. Fundamentally, the capital market is a means of bringing together the interests of two parties, namely those who need funds and those who have funds. The capital market is in principle similar to the market in general, what distinguishes it from other markets is the components traded. The capital market is referred to as an abstract market, because what is traded are long-term funds, namely funds that are bound for more than one year (Widoatmojo, 2015).

Financial instruments traded on the capital market are long-term instruments such as stocks, bonds, warrants, rights, mutual funds, and various other derivative instruments such as options, futures, and others (Siswosoemarto, 2012). The capital market is a very effective medium for channeling and investing funds that will provide benefits and have a productive impact on investors. Through capital market activities, companies can obtain long-term funding that can be used to finance operational activities and company expansion (Nurrohim, 2008).

Husnan (2005) describes in detail the factors that influence the success of the capital market, namely:

1) Securities Supply
   This factor means that many companies are willing to issue securities in the capital market. The question that needs to be answered is whether there are a sufficient number of companies in a country that need funds that can be invested profitably and whether they are willing to comply with the full disclosure requirements required by the capital market.
2) Security Demands
   This factor means that there must be members of the public who have a large enough amount of funds to be used to buy the securities being offered.
3) Political and Economic Conditions
   This factor will affect the supply and demand of securities. Conditions of political stability help economic growth which ultimately affects the supply and demand for securities.
4) Legal and Regulatory Issues
   Securities buyers basically rely on the information provided by companies that issue securities. Regulations that protect investors from incorrect and misleading information are absolutely necessary.
5) The existence of institutions that regulate and supervise the capital market and various institutions that enable transactions to be carried out efficiently.

According to Rode (1995) there is no single indicator that is used as a definite guideline for investing, because so far there is no indicator that is truly perfect. This makes analysts and investors always look for the latest indicators as a guide in investing. One of the new indicators that is widely used for forecasting is the Autoregressive Integrated Moving Average (ARIMA). ARIMA is a method that generates forecasts based on a synthesis of historical data patterns (Arsyad, 1995). In addition, there are several other prediction methods (GARCH, VAR, CAPM), where the ARIMA method with time series data has the characteristics that best match the characteristics of the movements of the stock market. Sri Mulyono (2000) regarding short-term forecasting (5 days) on JCI movement on the JSE with daily data and an estimation period of 3 months using the ARIMA method, indicating that this method is suitable for forecasting a large number of variables in a short time and with limited resources. where the ARIMA method with time series data has the characteristics that best match the characteristics of the movement of the stock market. Sri Mulyono (2000) regarding short-term forecasting (5 days) on JCI movement on the JSE with daily data and an estimation period of 3 months using the ARIMA method, indicating that this method is suitable for forecasting a large number of variables in a short time and with limited resources. where the ARIMA method with time series data has the characteristics that best match the characteristics of the movement of the stock market. Sri Mulyono (2000) regarding short-term forecasting (5 days) on JCI movement on the JSE with daily data and an estimation period of 3 months using the ARIMA method, indicating that this method is suitable for forecasting a large number of variables in a short time and with limited resources.

3. Method

The hypothesis has been made, the next step of research is to design research to be able to test the hypothesis. The research design is the plan of the research structure that directs the research process and results to be valid, objective, efficient and effective(Jogiyanto, 2016). The research design used can show the relationship between the variables to be studied. The type of research used in this study is a type of quantitative research.

According to Sugiyono (2018), quantitative research methods can be interpreted as research methods based on the philosophy of positivism, used to examine certain populations or samples, data collection using research instruments, data analysis is quantitative or statistical, with the aim of testing established hypotheses.

The population of this study is all official Tin Stock Price data since it was first introduced in 2006 on the Stock Exchange until now. Meanwhile, the sample from this study will use data on

the monthly closing price movement of tin shares from January 2020 to May 28, 2021. This data was obtained from PT Timah, the Stock Exchange and Yahoo Finance.

The data analysis method used in this study is using descriptive statistics from the results of the two different test average hypotheses. Descriptive analysis is a process of transforming research data in tabular form so that it is easy to understand and interpret (Sugiyono, 2018).

Data analysis was performed using the ARIMA method. Before calculating using the ARIMA method, a series of tests such as data stationarity, differentiation process and correlogram testing are carried out to determine the autoregression coefficient.

4. Results and discussion

Research activities on tin stock analysis using the ARIMA method during the pandemic were carried out by collecting monthly stock data and verifying interview discussions with stakeholders. After collecting all the data and the results of the interview discussion, a stock projection analysis is carried out with the following steps:

4.1. Identification of Time Series Models

The application of the ARIMA method for projecting the closing share price is applied to the stock closing data at PT. Timah Tbk as many as 17 data, namely from January 2020 to May 2021. The stock time series pattern is shown in Figure 3.
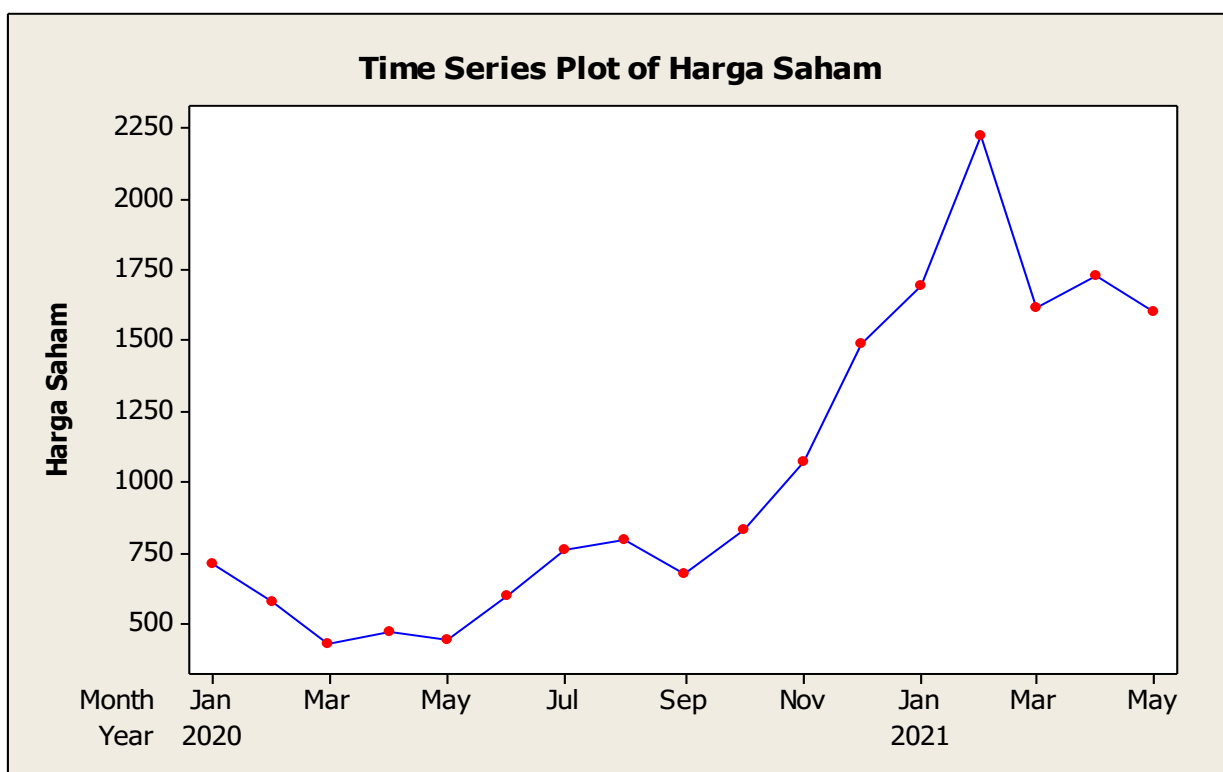

Figure 2. Plot of PT. Timah, Tbk January 2020 to May 2021

In Figure 2 it can be seen that the data*closed*PT shares Timah, Tbk is not yet stationary (there is still an element of trend), so it must be stationary. The data above shows that the passage of time is increasing so that it shows a trend pattern but fluctuates so that it is often called a stochastic trend. After knowing the pattern of the data, the next step is to check the data whether the data is stationary in terms of mean (average) and variance (data deviation from the mean) or not. If the data is not stationary in the mean, it is necessary to carry out the differencing process and if it is not stationary in the variance, it is necessary to carry out the transformation process. To see the stationarity in the variance can be seen through the Box-Cox transformation. If the rounded value or lambda (λ) is equal to 1, it can be said that the data is stationary in variance. However,
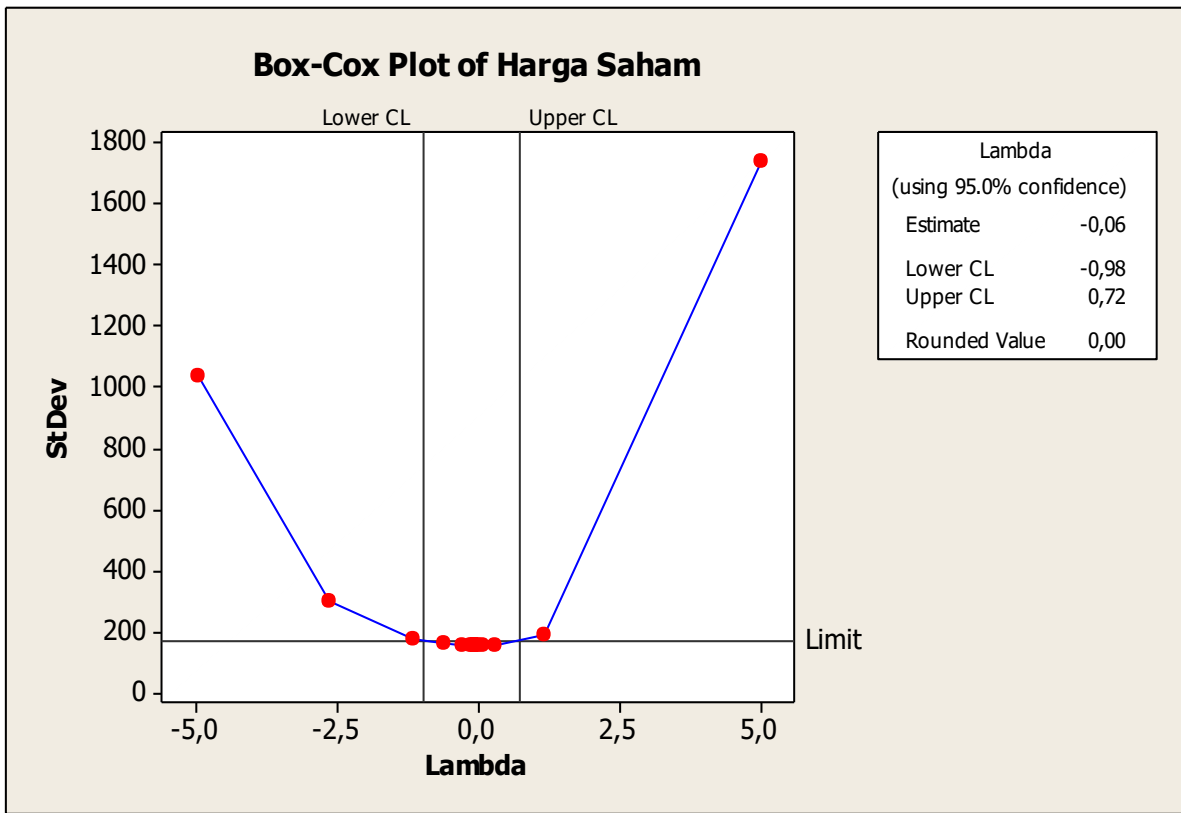
Figure 3. Box-Cox output of PT. Timah Tbk.

Figure 3 shows if the data is not stationary in variance. The data can be said to be stationary in terms of variance seen from the rounded value (lamda). From the Box-Cox output above, a rounded value of 0.00 is obtained. This data cannot be said to be stationary in the variant because if the data is stationary in the variant then the rounded value is 1, so data transformation must be carried out. Stationarity is carried out by stationarity on the variance and average and is obtained up to the 2nd transformation.
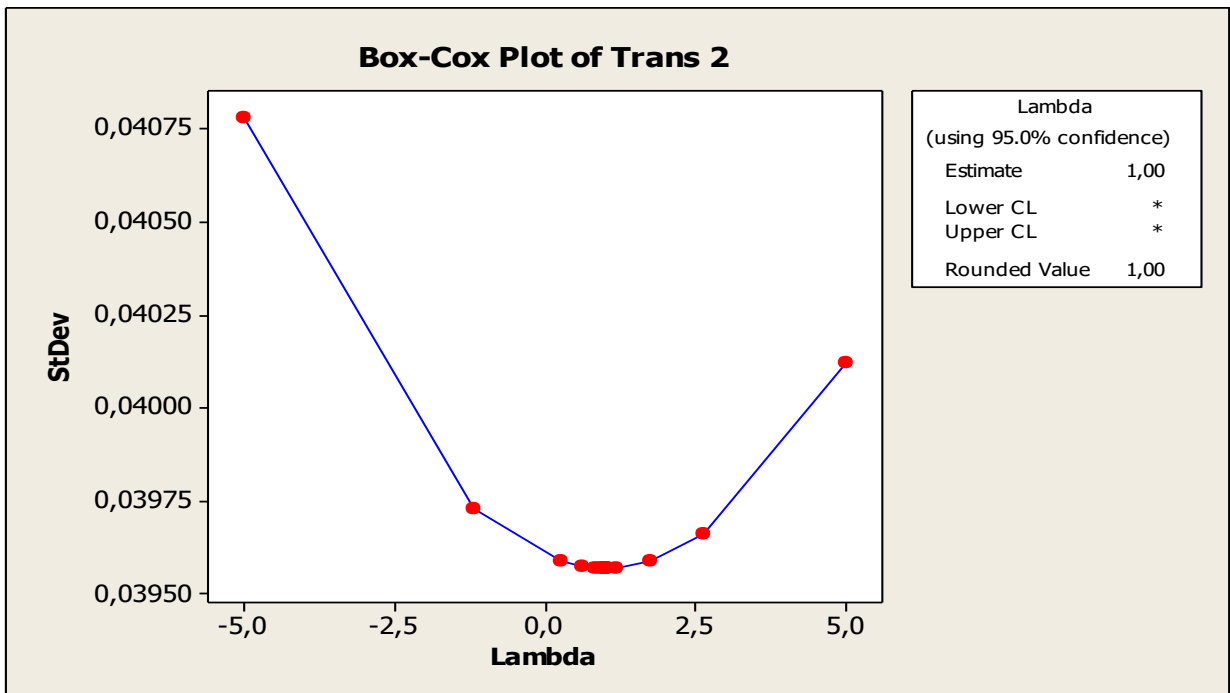

Figure 4. Box-Cox output of PT. Timah Tbk as a result of transformation 2.

Box-Cox transformation is carried out up to the second with the name Trans 2, in Figure 5 a rounded value of 1.00 is obtained. This shows that the stock close data is stationary in variance. Meanwhile, to see stationarity in averages (means) can be seen through time series plots or ACF plots. If in the time series plot there is no trend element in the data or in the ACF plot it drops to near zero quickly, generally after the second or third lag, then it can be said that the data is stationary on average.

Stock investment analysis in the form of fundamental and technical analysis. Fundamental analysis emphasizes the importance of the fair value of a stock which requires a variety of data and financial reports. Meanwhile, technical analysis requires price charts and past data. The basic philosophy of technical analysis is to be able to find patterns of stock price movements based on observations of stock price movements in the past, so that it can be stated as a study of market behavior analyzed from chart movements to predict future price trends. Technical analysis is widely used by investors in trading short-term securities and looking for short-term profits (Taswan & Soliha, 2002). According to Rode, Friedman, Parikh and Kane (1995) the basic theory of technical analysis is a trading technique that uses data over a certain period of time that can be used to make good investment decisions. So that the main objective of this technical analysis is to predict from a time series data with the calculation forecasting method.

Conclussion

The tin stock investment instrument is still one of the instrument models that can be used during the Covid 19 pandemic. In the world of stock investment, there are two types of analysis known, namely fundamental analysis and technical analysis. Technical analysis attempts to test historical data in predicting stock prices in order to buy or sell an investment instrument.

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