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Analysis of Volatility and Factors Influence LQ45 Index and its Impact to Economic Growth in Indonesia

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Abstract:- The results of the tests conducted, it is known that the LQ45 index data is long, the research period from 1999 to 2021 all data has data which is stationary, and high volatility. Inflation did not have a direct effect on the LQ45 index during the period research from 1999 to 2021. The exchange rate does not directly affect the LQ45 index during the period research from 1999 to 2021. The Fed Rate has a direct effect on the LQ45 index during the period research from 1999 to 2021. The DJIA index has a direct effect on the LQ45 index during the period research from 1999 to 2021. The LQ45 index has a direct effect on economic growth during research period from 1999 to 2021. Inflation has a direct effect on economic growth m and not influence indirectly through the LQ45 Index during the study period from 1999 to 2021. The exchange rate has a direct effect on economic growth and not influence indirectly through the LQ45 Index during the study period from 1999 to 2021. The Fed Rate has no direct effect on economic growth and influence indirectly through the LQ45 Index during the study period from 1999 to 2021.The DJIA index has a direct and indirect effect on growth economy through the LQ45 Index during the study period from 1999 to with 2021.

Keywords:- *Volatility; Factors Influence; Economic Growth.*

I. INTRODUCTION

Investment is one of the main sources for growth economy. Activities in investing will result in investment that will continue to increase the capital stock. Increase in capital stock will affect the level of productivity and can encourage economic growth and availability of jobs and employment. According to Dumairy, (1999) investment can be regarded as a form of financing which is the first step in production activities. Activity productive production can spur economic growth as well is the first step of economic development activities.

Economic growth is not only supported by consumption activities however also supported by investment. Growth supported by investment is considered will be able to increase productivity thereby helping to increase a country's economic growth. Based on historical data in 2008 a company engaged in the field of investment banking and private banking Lehman Brothers Holdings Inc. under the ticker symbol LEHLQ announced bankruptcy. LEHLQ is the fourth largest investment bank in America United after Goldman Sachs, Morgan Stanley, and Merrill Lynch are currently The occurrence of bankruptcy resulted in a financial crisis in the United States to impact on the global financial crisis including Indonesia. The financial crisis that occurred in the United States not only destroyed the foundations of the financial sector but also had an impact on Indonesia's real domestic sector. Table 1.1 can be seen Indonesia's economic growth in 2008 was 6.01%, down to 4.63% in 2009. Economic growth in Indonesia has continued to decline since 2010, even in 2015 it fell to 4.88% before returning increased in 2016 until 2019 experienced this fluctuation provides an indication that planning that is still weak needs to be encouraged policies that can boost economic growth. On the other hand, index numbers LQ45 for the last 12 years has continued to increase. According to (Dynan et al.,2006) the financial sector (capital market) plays a positive role in reducing volatility macroeconomic variables.

Year	LQ45 Index	Economic Growth (%)
2008	10.950	6,01
2009	9.400	4,63
2010	8.991	6,22
2011	9.068	6,17
2012	9.670	6,03
2013	12.189	5,56
2014	12.440	5,01
2015	13.795	4,88
2016	13.436	5,03
2017	13.548	5,07
2018	14.481	5,17
2019	13.901	5,02
2020	14.105	2,97
2021	14.269	3,69

Table 1: LQ45 Index and Economic Growth in Indonesia in 2010 – 2021

Source: Indonesia Stock Exchange & BPS Indonesia, 2022

In Harrod's and Domar's theory there is influence between investment activities on a country's economic growth. Investment activity has 2 simultaneous influence on the economy. First, investment has a relationship positive with state income. Therefore, as investment increases, the higher the income generated by the state. Second, investment can increase the production capacity of the economy by increasing the stock of capital. This capital formation is considered as expenditure that will increase demand for the needs of the whole society. According to (Jhingan, 2003) theory economic growth Harrod and Domar provide a key role to investment in the process of economic growth. First create income as a result of demand, and increase the production capacity of the economy by increasing the stock of capital as a result of supply. Therefore, as long as investment persists, real income and output will inevitably increase.

Stock trading activities on the Indonesia Stock Exchange (IDX) have an impact on the economy in Indonesia. According to (Todaro & Smith, 2012) the development of the stock market can play an important role, namely a very constructive role in driving economic growth. Greater past stock market developments can predict faster subsequent economic growth. In fact, the fall in the stock market led to a decline in purchasing power, shrinking investment, industrial sector shocks, and widespread unemployment. In development economics theory it is known that the level of economic growth and investment has a positive reciprocal relationship, the higher a country's economic growth means the greater the share of income that can be saved so that the investment created will be even greater. According to (Michael A. Bernstein, 1989) investment is a function of economic growth. The greater the investment of a country, the greater the level of economic growth that can be achieved. A stock market crash will almost certainly have a severe negative impact on economic activity in general, by increasing income uncertainty which reduces spending on consumer goods (Cecchetti, 1992). Macroeconomic variables that are often associated with economic growth through the capital market are inflation, exchange rates, fed rates, and the Dow Jones Index.

The number of investors in the financial sector (capital market) continues to increase sharp every year. Based on capital market statistics issued by KSEI as a Depository and Settlement Institution in Indonesia from 2018 until 2021 the number of capital market investors will increase. in 2018 1,619,372 accounts while in 2021 there will be 7,489,337 accounts experienced an increase of 92.99% from 2020 which was only as much 3,880,753 accounts. This means that the development of the capital market in Indonesia shows progress every year. Indonesia is one of the countries that open stock exchanges for foreign investors from around the world. According to (Lestari, 2010) the flow of foreign capital in capital market will reduce the cost of capital of developing countries so that increase investment and output. Information is also increasingly open and reduced asymmetric information so that the market is more transparent and effective and increases investor confidence. Increasing the number of domestic investors and foreign investors has a positive effect on the economy in Indonesia, apart from the inflation variable, value exchange rates, fed rates, and dow jones, high levels of volatility will have a negative impact on future capital market developments.

II. METHODS

In this study the authors used a quantitative approach that partially measured and analyzed the volatility of the LQ45 Index and the influence of inflation, exchange rate, Fed Rate and on Indonesia's economic growth through the LQ45 Index in an annual period, namely 1999 to 2021.

Research that uses time series data, especially in the field of capital markets, usually has a high level of volatility, meaning that the data fluctuates or increases and decreases which alternate continuously over time. The condition of high data volatility in the time series data is caused by the stochastic effects contained in the time series data causing the variance of the residuals to be not constant. Conditions like this are referred to as symptoms of heteroscedasticity. Thus a model is needed that can work on the possibility of heteroscedasticity and volatility dependence, such as the ARCH-GARCH model.

This study uses secondary data in the form of annual time series data for the LQ45 Index from 1999 to 2021 and annual data for inflation, exchange rates, fed rates, DJIA, LQ45, and economic growth data. This study uses the ARCH-GARCH analysis tool to see the volatility of the LQ45 Index. To see the effect of macroeconomic variables through LQ45 on economic growth, path analysis is used to test complex hypotheses which are useful for analyzing the direct and indirect effects of the independent variables on the dependent variable.

The analytical tools used to support this research are Stata/MP 17 Software and Microsoft Excel 2016.

III. RESULT

The effect of the DJIA index on the LQ45 index is shown by the path coefficient value of 1,442 or 14.42% with a significance of 0.001>0.05 and is declared significant. This means that the DJIA has a positive and significant effect on the LQ45 index during the study period, namely 1999 to 2021. The effect of the LQ45 index on economic growth is 1.429 or 14.29% with a significance of 0.000 <0.05 and is stated to be significant, this means that the LQ45 index has a positive and significant effect on economic growth. The increase in the LQ45 Index is believed to be able to contribute to economic growth. This can be seen from the results of research that shows the number of investors in the capital market which continues to grow every year has had a good impact on increasing economic growth. This is because the source of state revenue has also increased. Any taxes imposed in transactions on the capital market enter the state treasury and are recorded as income. Based on data for 2021, 5,096,450,000 shares were traded with a value of IDR 3,302 T transactions in the stock index on the Indonesian stock exchange.

The direct effect of inflation on economic growth is -0.114 with a p-value of 0.013<0.05. This means that the inflation variable has a negative and significant effect on Indonesia's economic growth during the 1999 – 2021 research period. High inflation conditions have a direct negative impact on economic conditions. The indirect effect of inflation on economic growth is -.0261 with a p-value of 0.483. This means that the inflation variable does not have a significant indirect effect on economic growth through the LQ45 index during the 1999-2021 study period. The direct effect of exchange rates on economic growth is 4,475 with a p-value of 0.001> 0.05. This means that the Exchange Rate variable has a positive and significant effect on Indonesia's economic growth.

The indirect effect of the exchange rate on economic growth through the LQ45 index is -1,130 with a p-value of 0.114> 0.05, which means that the effect is not significant. This means that the exchange rate variable does not have a significant indirect effect on economic growth through the LQ45 index during the 1999-2021 observation period. The direct effect of the Fed Rate on Economic Growth is 0.210 with a p-value of 0.784> 0.05. This means that the Fed Rate variable does not have a significant effect on Indonesia's economic growth directly during the research period 1999 – 2021. The direct effect of the DJIA Index on Economic Growth is -4,688 with a p-value of 0.007> 0.05 while the indirect effect of the DJIA Index on Growth The economy through the LQ45 Index is 2,062 with a p-value of 0.010> 0.05. This means that the DJIA Index variable directly and indirectly has a significant effect on Indonesia's economic growth during the 1999 – 2021 study period.

IV. DISCUSSION

The Dow Jones Index is one of the oldest indexes of the 3 main indexes in the United States. The other indexes are the Nasdaq Composite and Standard & Poor's 500. The Dow Jones index can describe how the American economy is performing. As a country with Indonesia's largest export destination, the economic growth of the United States is able to influence Indonesia's economic growth through export activities or through capital flows, both direct investment activities and through the Indonesian capital market. So that changes that occur in the United States will be reflected in the Dow Jones Index and will affect the Indonesian economy through the JCI.

V. CONCLUSION

Based on the data processed and analyzed, it can be concluded:

- From the results of tests conducted, it is known that the LQ45 Index data during the research period from 1999 to 2021 all data has stationary data, and high volatility.
- Inflation has no direct effect on the LQ45 index during the study period from 1999 to 2021
- Exchange rates do not directly affect the LQ45 index during the study period from 1999 to 2021
- The Fed Rate has a direct effect on the LQ45 index during the research period from 1999 to 2021
- The DJIA index has a direct effect on the LQ45 index during the study period from 1999 to 2021
- The LQ45 index has a direct effect on economic growth during the research period from 1999 to 2021.
- Inflation has a direct effect on economic growth m and does not have an indirect effect through the LQ45 Index during the study period from 1999 to 2021.
- The exchange rate has a direct effect on economic growth and does not have an indirect effect through the LQ45 Index during the study period from 1999 to 2021.
- The Fed Rate has no direct effect on economic growth and has an indirect effect through the LQ45 Index during the study period from 1999 to 2021.
- The DJIA Index has a direct and indirect effect on economic growth through the LQ45 Index during the research period from 1999 to 2021.

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