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# The Influences of Interest Rate, Inflation and Market Risk on the Performance of Stock Mutual Funds Through to the Variables Moderating of Stock Index LQ45 Registered on IDX 2016-2019

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## Abstract

This study aims to determine the effect of interest rates, inflation and market risk on the performance of stock mutual funds with a stock index of lq45 as the moderating variable. The independent variable in this case is the interest rate (x1), inflation (x2), market risk (x3) and the dependent variable is the performance of stock mutual funds (y) and the stock index lq45 as the intervening variable (m). The type of research used is associative research, with a quantitative approach. This study takes all time series data that converts interest rates, inflation and market risk, stock index lq45 and the performance of stock mutual fund for the period 2016 to 2019. The number of research samples using saturated sampling techniques obtained is 40 samples. Data analysis used multiple regression analysis and moderated regression analysis using spss23. The results of the F test show that the lq45 index is able to moderate the independent variable interest rate, inflation, market risk together on the performance of stock mutual funds. The t test results show that the stock index lq45 is able to moderate the relationship between the variable interest rate and market risk on the performance of stock mutual funds, while the inflation variable cannot be moderated by the stock index lq45 on the performance of stock mutual funds.

**Keywords:** Performance of Stock Mutual Funds, Interest Rates, Inflation, Market Risk and Stock Index LQ45

## 1. Introduction

Stock mutual funds are an investment alternative for the public, especially small investors and investors who do not have much time and expertise to calculate risk on investment. Stock mutual funds are designed as a means to raise funds from people who have capital, have the desire to invest, but only have limited time and knowledge.

According to Tandelilin (2010), mutual funds are a container that contains a group of securities that are managed by investment company and purchased by investor.

Inflation is an economic indicator that causes an increase in the prices of goods and services in a given period. The existence of high inflation will cause an increase in production costs. Brigham and Houston (2010) suggest that inflation is the amount of price increases over time, while the level of inflation is the percentage of the price increase.

The interest rate in the financial sector, which is commonly used as an investor's guide, is also known as the risk-free interest rate, which includes the central interest rate and the deposit interest rate. In Indonesia, the central bank interest rate is represented by the interest rate for Indonesian Bank Certificates or SBI's (Husnan, 2003).

Market risk is one of the macroeconomics that affects the performance of mutual funds. According to Bareksa (2017) Market risk in investing in mutual funds, it is not only the profits that need to be considered by investors, but also the risks. One of the risks that always arise is market risk, this market risk is the risk of fluctuation or fluctuation in Net Asset Value (NAV) caused by changes in financial market sentiment (such as stocks and bonds) which are assets in mutual fund portfolio management. This risk also called systematic risk, which means the risk that cannot be avoided.

The LQ45 index consists of 45 stocks with high levels of liquidity which are selected based on certain criteria. The shares included in the calculation of the LQ45 stock index are regularly monitored for their performance development.

The objectives of this study are as follows. (1) To determine the direct effect of interest rates on stock mutual funds performance (2) To determine the direct effect of inflation on stock mutual funds performance (3) To determine the direct effect of market risk on stock mutual funds performance (4) To determine the lq45 index is able to moderate the relationship of Interest rates to stock mutual funds performance (5) To determine the lq45 index is able to moderate the relationship of inflation to stock mutual fund performance (6) To determine the lq45 index is able to moderate market risk on the performance of stock mutual funds.

## 2. METHOD

Theoretically that the ratio of interest rates, inflation and market risk affects the performance of mutual funds. The sample used in this study is stock mutual funds listed on the Indonesia Stock Exchange during the period 2016 - 2019 and uses secondary data published by Bareksa.com. Based on the theoretical basis that has been described regarding the influence of interest rates, market risk, inflation and market risk on the performance of equity funds with shares index lq45 as the moderating variable.

The type of data used in this research is quantitative data. The quantitative data is data on mutual funds on the Indonesia Stock Exchange and the Financial Services Authority for the 2016-2019 period. The data source used is secondary data. Secondary data is data that is not directly obtained from the company, but the data is obtained from [www.idx.co.id](http://www.idx.co.id) and [www.ojk.go.id](http://www.ojk.go.id).

Assessment of the performance of mutual funds is very important to determine the ability of mutual funds to generate profits and compete with other types of mutual funds. Mutual fund returns are known as net asset value (NAV), which is a tool to assess mutual funds performance. In this study are using Treynor ratio methods. The Treynor method is a comparison between excess return and risk from mutual funds, the risk that is compared is only from systematic risk (market risk) which is reflected in the beta value. The higher the Treynor ratio value also illustrates the better performance of a mutual fund.

Population is a set of data that has the same or similar characteristics. The population used in this study are all stock mutual funds listed on the Indonesian stock exchange during the 2016-2019 period. The sample used in the study was 10 stock mutual funds with the best year to date (YTD) for five consecutive years according to Bareksa.

The sampling technique was carried out by purposive sampling with the aim of obtaining samples that match the specified criteria.

The data analysis method in this study uses Moderated Regression Analysis (MRA) because in this study there is a moderating variable which aims to determine the magnitude of the influence of the independent variable on the dependent variable with the influence of the moderating variable.

The classical assumption test is a test to determine the accuracy of the model used in this study. The following are some tests that can be done to determine whether the classical assumptions are fulfilled or not, namely the normality test, multicollinearity test, collinearity test and heteroscedasticity test.

### 3. RESULTS AND FINDINGS

Descriptive analysis is to find out an overview of the sample. The sample description is in the form of minimum value, maximum value, measurement value, average with standard deviation.

Based on the result, the sample data is consist to 40 data, taken from 10 equity mutual fund companies within 4 years with Treynor ratio method, the results of the statistical description output of Stock Mutual Fund Performance show that the lowest value of -0.1990 happened to the Simas Syariah Unggulan stock mutual funds in 2019 and the highest value of 0.4558 occurred in the Simas Syariah Unggulan stock mutual fund in 2018. The results of the statistical description output of the Interest Rate show that it has the lowest value of 0.0425 or 4.25% in 2017 and the highest value of 0.0600 or 6.00% occurred in 2018. The results of the statistical description output of inflation show the lowest value of 0.0361 or 3.61% in 2017 and the lowest value is 0.0272 or 2.72% in 2019. The results of the statistical description output of Market Risk (beta) show the lowest value of 0.36 occurred in 2018, while the highest value is 1.33 happened to the Sucorinvest Maxi Fund mutual funds in 2017 and The results of statistical output from the LQ45 Stock Index show that it has the lowest value of 884.62 occurred in 2016, while the highest value was 1079.39 in 2017.

Testing for normality uses the Kolmogorov Smirnov test sig values are above or greater than 0.05 ( $\text{sig} > 0.05$ ) so the normality assumption is fulfilled. The complete multicollinearity assumption test results, the tolerance value for the entire model is above 0.10 ( $> 0.10$ ), these results indicate that the model is free from multicollinearity. The heteroscedasticity test that the dots spread randomly both above and below the number 0 on the Y axis. It can be concluded that there is no heteroscedasticity in the regression model. To determine whether there is autocorrelation in a model, the Durbin-Watson value from the regression model is 2.226, the value of  $dU = 1.6589$ ,  $4 - dU = 4 - 1.6589 = 2.3411$ , the Durbin Watson value  $> 1.6589 < 2.3411$ , then the autocorrelation test is fulfilled.

Based on research conducted on Equity Mutual Fund companies listed on the Indonesia Stock Exchange for the period 2016-2019 it can be concluded as follows:

The results of the F test show that the lq45 index is able to moderate the independent variable interest rate, inflation, market risk together on the performance of stock mutual funds

The results of the T test-direct effect, with a Sig.t value of 0.557, 0.113 and 0.118 where the Sig.  $t > 0.05$  indicated that the interest rate, inflation and market risk does not directly affect to the performance of mutual funds.

The results of the T test-indirect effect (stock index lq45 as a moderating variable) indicated that with a Sig.t value of 0.002 and 0.001  $< 0.05$  that stock index only be able to moderate interest rate and market risk to the performance of equity funds while for inflation the result indicated that stock index lq45 is not be able to moderate to the performance of mutual funds as the result for Sig.t value is 0.203  $> 0.05$

### 4. Conclusion

There is a significant positive effect that stock index lq45 is able to moderate interest rate and market risk on mutual fund performance but not be able to moderate of inflation, this means that the fluctuation of interest rate

movements which is tends to increase will affect the movement of the real sector which is reflected by the movements of stock returns. The increase in stock prices that increase the amount of investor returns in the form of capital gains is quite attractive to investor to invest in mutual fund.

Market risk / systematic risk cannot be eliminated by forming a portfolio in an investment. Therefore, for an investor this risk becomes relevant to be considered in choosing a combination of stocks in the portfolio he forms. So that in order to determine the level of profit required or expected on a share that can be associated with systematic risk. This is in accordance with the concept of Markowitz which says that every risk will affect stock returns so that companies need to carry out a stock portfolio by minimizing the level of risk and maximizing the level of profit.

Fundamental analysis theory states that an increase in inflation is a relatively negative signal for investors in the capital market because it will increase company income and costs (Tandelilin, 2010). The company's production costs have also increased and will make investors think twice about investing in stocks, thus reducing the purchasing power of investors to invest in stocks. The decline in purchasing power causes demand for stocks to decline, so that there is a tendency for share prices to decline.

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