

## Performance Analysis of Stock Mutual Funds and Fixed Income Mutual Funds Before and During the Covid-19 Pandemic

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### Abstract

*This study aims to determine the performance of Equity Mutual Funds and Fixed Income Mutual Funds before and during the Covid-19 pandemic, in the period 2018-2020. Using the method of measuring the performance of mutual funds, namely Sharpe, Treynor and Jensen. Then the results of the calculations of the three methods were tested using a non-parametric test, namely the Wilcoxon test using SPSS Software (Statistical Package for the Social Sciences) to find out whether there were differences between stock mutual funds and fixed income mutual funds before and during the covid-19 pandemic. The results obtained from a sample of 54 conventional stock mutual funds and 27 conventional fixed income mutual funds. The results obtained from a sample of 54 conventional stock mutual funds and 27 conventional fixed income mutual funds. Only conventional stock mutual funds with the Jensen method obtained optimal values before and during the Covid-19 pandemic. Then only conventional stock mutual funds with the result value of the Jensen method have different performance from before and during the Covid-19 pandemic. For conventional income mutual funds, there is no difference in performance from before and during the Covid-19 pandemic.*

### Keywords

equity mutual fund  
performance; fixed income  
mutual fund performance;  
sharpe; treynor and jensen



### I. Introduction

The Covid-19 pandemic is a viral outbreak that spreads very quickly throughout the country. The Corona Covid-19 virus was first detected in Wuhan, China and confirmed by the world health organization, namely the World Health Organization (WHO) on December 31, 2019 (Arnani, 2020). The Corona virus was declared a pandemic by the world health organization, the World Health Organization (WHO) on March 11, 2020 (Kompas.Com, 2020). The Covid-19 virus was first discovered in Indonesia, namely on March 2, 2020. This patient who was infected with the Covid-19 virus had contact with foreign nationals who came to Indonesia. The outbreak of this virus has an impact of a nation and Globally (Ningrum et al, 2020). The presence of Covid-19 as a pandemic certainly has an economic, social and psychological impact on society (Saleh and Mujahiddin, 2020). Covid 19 pandemic caused all efforts not to be as maximal as expected (Sihombing and Nasib, 2020).

There is a policy of limiting outdoor activities which makes most people just stay at home. This causes commodity prices to fall sharply, there is a tightening in the financial market, the domestic economy is disrupted, the reversal of capital flows, export demand decreases and ultimately disrupts the stability of the trade balance (Ahidin, 2020). The COVID-19 pandemic period has made people prefer to save or save their money in banks

(Cnbcindonesia.com, 2021). Thus, most people choose to withhold spending as a way to anticipate an increasingly unfavorable situation in the future.

Investors in Indonesia are growing very rapidly. This can be seen from the Indonesia Stock Exchange (IDX) data report which recorded the number of investors in 2019 was 2.48 million. This figure has increased from 2018 by 53% with the number of investors in 2018 as many as 1.6 million investors. Referring to data from the Indonesia Stock Exchange, by the end of 2020 the number of capital market investors increased by 56% to 3.88 million investors by the end of 2020 (Cnbcindonesia.com, 2021). the number of mutual fund investors increased by 78.25% from 2018 to 2019, then continued to increase to 78.95% from 2019 to 2020 and a 62.68% increase in the number of investors between 2020 and 2021 (Bisnisindonesia.id).

Mutual funds become an alternative to invest for investors or people who have small capital, have limited time and knowledge in making an investment. Mutual funds are an investment choice for investors, because mutual funds accommodate investment funds provided by capital owners for further placement of investment funds in accordance with the contract between the capital owner and the investment manager. Mutual funds provide flexibility and good liquidity, so that mutual funds can be an investment choice for investors who do not have much time to analyze investment instruments.

During the Covid-19 outbreak, equity mutual funds were one of the affected by experiencing a decline from the pressure of the Covid-19 Virus (Bareksa, 2020). The Composite Stock Price Index decreased when it was confirmed that the Corona virus had entered Indonesia. Companies listed on the IDX have also been affected by the COVID-19 pandemic. This also has an impact on investors' interest in investing their funds into equity mutual fund products. This is in line with data on the total Net Asset Value (NAV) of equity funds. Net Asset Value is a number of assets after deducting existing liabilities, and for Net Asset Value per unit is the total value of net assets divided by the number of units of participation in a certain period (Miha & Laila, 2017).

Income mutual funds remain a mutual fund product that can be said to have low risk, because the placement of investment funds from mutual fund products is still placed in bonds or sukuk instruments that provide fixed income. Before and during the Covid-19 pandemic in all countries, there was a difference in habits in society. The benchmark interest rate has changed according to several monetary factors and Indonesian economic conditions. The largest benchmark interest rate in the period 2018 to 2020 is at the end of 2018 to the beginning of 2019. The returns provided by mutual funds are based on the performance of each mutual fund product with their respective functions and characteristics.

Performance is a result created from a process that refers to and is measured over a certain period of time based on pre-determined provisions or agreements. Performance is a reflection of abilities and skills in a particular job that will have an impact on rewards or success based on previously set goals. Edison (2016), There are several investment products in the capital market such as stock instruments and mutual funds. The investment performance of the mutual fund portfolio management is reflected in the Net Asset Value (NAV), and whether or not the investment performance of the portfolio managed by the investment manager is influenced by the investment policies and strategies carried out by the investment manager concerned (Lestari & Hendrawati, 2016).

Net Asset Value is a reference for investors to see the performance of mutual funds, the greater the Net Asset Value of mutual funds, the higher the performance of these types of mutual funds than other types of mutual funds and makes investors more confident to place their funds in mutual funds that have High Net Asset Value. To measure the

performance of an investment instrument is to compare it with the reference price or reference interest. Mutual fund performance can be calculated by the difference between the mutual fund price or NAV at the end and the beginning of the period. The performance of a mutual fund occurs from the movement of asset values in certain types of mutual funds. Mutual fund performance can be seen from the reference data according to the type of mutual fund.

## **II. Review of Literature**

### **2.1 Investment**

Investments are made by the owners of the funds in the hope of getting a return on their investment. Investment is a commitment to a number of funds or resources carried out at this time, with the aim of obtaining and hoping to get a number of benefits in the future (Tandelilin, 2017). Every investor who invests his funds in investment instruments certainly has a goal. The purpose of the investment itself is to get a profit from the value or money that has been invested by the investor. According to Prasetyo (2018). Investing can be done in the Indonesian capital market.

### **2.2 Capital market**

According to Mahendra et al., (2017), the capital market in general is a place where various parties, especially companies that sell shares and bonds with the aim that the proceeds from these sales will be used as additional funds or to strengthen the company's capital.

### **2.3 Mutual funds**

According to Rudiyanto (2016), mutual funds are a company product that is included in the capital market category which is supervised by the OJK so that they can carry out fundraising activities from the investor community. The performance of mutual funds seen by investors when investing in mutual fund products.

### **2.4 Mutual fund performance**

According to Hamid & Cahyadi (2020), mutual fund performance is the ability of a mutual fund to provide a certain return according to a certain level of risk.

### **2.5 Equity Funds**

According to Sari (2019), equity mutual funds are mutual funds that have the highest return and risk and experience the highest fluctuations compared to other types of mutual funds.

### **2.6 Fixed income mutual funds**

And according to Rahmawati & Nuris (2018), fixed income mutual funds are a type of mutual fund whose capital investment is invested at least 80% of its portfolio in debt securities.

### **2.7 Sharpe Indeks Index**

According to Nurlaeli & Artati (2020) the Sharpe Index is an assessment carried out by comparing the portfolio risk premium which is the difference between the average portfolio profit rate and the risk-free interest rate compared to the portfolio risk expressed by the standard deviation or total risk.

## 2.8 Treynor Index

Meanwhile, according to Darmayanti et al., (2018), the Treynor index compares the portfolio risk premium with portfolio risk expressed by beta.

## 2.9 Jensen Index

The Jensen Index measurement is the difference between the average portfolio return and the value according to the CAPM. The Jensen Index was introduced by Michael C. Jensen in 1968 which is the development of the CAPM (Nurlaeli & Artati, 2020).

## 2.10 Research Hypothesis

According to Sekaran & Bougie (2016) a hypothesis is a tentative statement, but it can be tested to predict what researchers expect to find in empirical data. Hypothesis is a statement that is temporarily accepted as a truth, when the phenomenon is known and is the basis of work and guidance in terms of verification (Anshori & Iswati, 2018). If viewed from the background explanation in this study, the hypothesis for this research can be made as follows.

"There is a significant difference in the performance of equity and fixed income mutual funds before and during the Covid-19 pandemic based on the Sharpe, Treynor, and Jensen method in 2018 to 2020".

## III. Research Method

The research method in this research is descriptive quantitative based on comparative purposes. In this study, the time series implementation method was used based on a ratio scale. This study has operational variables as follows.

**Table 1.** Operational Variables

| Variable                                 | Definition                                                                                                                                                                                                                                            | Indicator                                                                                                                                                                                                       | Scale |
|------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|
| Performance of Equity Mutual Funds       | The performance of Equity Funds is seen from the expected return generated by the risk-free return received by per unit of investment risk using the Sharpe and Treynor method and calculating abnormal returns using the Jensen method.              | 1. $\hat{S}_p = \frac{\bar{R}_p - \bar{R}_f}{\sigma_{TR}}$<br>2. $\hat{T}_p = \frac{\bar{R}_p - \bar{R}_f}{\hat{\beta}_p}$<br>3. $\hat{J}_p = \bar{R}_p - (\bar{R}_f + (\bar{R}_m - \bar{R}_f) + \hat{\beta}_p$ | Ratio |
| Performance of Fixed Income Mutual Funds | The performance of fixed income mutual funds is seen from the expected return generated by the risk-free return received by per unit of investment risk using the Sharpe and Treynor method and calculating abnormal returns using the Jensen method. | 1. $\hat{S}_p = \frac{\bar{R}_p - \bar{R}_f}{\sigma_{TR}}$<br>2. $\hat{T}_p = \frac{\bar{R}_p - \bar{R}_f}{\hat{\beta}_p}$<br>3. $\hat{J}_p = \bar{R}_p - (\bar{R}_f + (\bar{R}_m - \bar{R}_f) + \hat{\beta}_p$ | Ratio |

The population in this study is a stock mutual fund product and a fixed income mutual fund registered with the *Otoritas Jasa Keuangan* (OJK) in the period 2018-2020. The sampling technique in this study used the purposive sampling method, using several criteria in selecting samples for conventional equity mutual funds and conventional fixed income mutual funds. From the sampling, there are 54 samples of conventional stock mutual funds and 27 samples of conventional fixed income mutual funds. The criteria for selecting a sample of conventional equity mutual funds and conventional fixed income mutual funds are as follows.

1. Equity and fixed income mutual funds are still active in the 2018-2020 period and are registered with the OJK.
2. Shares and Fixed Income Mutual Funds contained in the Bareksa Website.
3. Has a net asset value published on the Bareksa website.

## IV. Result and Discussion

### 4.1 Mutual Fund NAB calculation

Divide the value of the total NAV with the unit of participation. For example, the Aurora Dana Equity mutual fund in February 2018 which has a total NAV of Rp. 271,032,784,153.75 and investment units of 256,703,788.40 units. Then the calculation is carried out to get the NAV per unit obtained from the following equation calculation.

$$\frac{NAB\ Total}{Unit\ Penyertaan} = \frac{271.032.784.153,75}{256703788,40} = 990,08$$

The results from the calculation of NAV per unit on the Aurora Dana Equity mutual fund in February amounted to Rp. 990.08 means that the net asset value per unit of the Aurora Dana Equity mutual fund in February is Rp. 990.08.

### 4.2 Mutual Fund Performance Calculation

Calculation of mutual fund performance can be done using the formula below. As an example, you can see the February return in 2019 for the BNP Paribas Ekuitas mutual fund product. In January 2019 Rp. 20,961.24 and in February 2019 it was Rp.20,846.67. Then the calculation can be done as follows.

$$Rd_1 = \frac{20.846,67 - 20.961,24}{20.961,24} = -0,55\%$$

The calculation results from the performance of the Paribas Ekuitas mutual fund in January 2019 yielded a figure of -0.55%, meaning that the performance of the Paribas Ekuitas mutual fund in January 2019 was at a negative number which illustrates the non-optimal performance of the mutual fund.

### 4.3 Calculation of Market Returns

To see the calculation of market returns from the JCI and bonds can be seen in Table 2. Calculations to determine the return from the market with the following formula. For example, for the IHSG return in March 2019 as follows:

$$R10_t = \frac{6455,35 - 6468,75}{6468,75} = -0,21\%$$

The performance of the IHSG in March 2019 was -0.21%, meaning that the performance of the IHSG market in March 2019 showed a negative number which means that the performance of the market declined when compared to the previous month, namely February 2019.

#### 4.4 Calculation of Risk-Free Rate

Risk Free in this study uses the interest rate of Bank Indonesia Certificates obtained from historical data on the 7-day BI Rate. The historical 7-day BI Rate interest data is released by Bank Indonesia. The average risk-free interest rate per year can be seen in Table 2 below.

**Table 2.** *Return Risk free Per tahun*

| Year | SBI   |
|------|-------|
| 2018 | 5.08% |
| 2019 | 5.63% |
| 2020 | 4.25% |

#### 4.5 Risk Calculation (Standard Deviation)

The risk of an investment can be measured by the standard deviation as a measure of risk. The larger the standard deviation, the greater the risk of the investment. The standard deviation can be calculated using equation this. For example, the BNP Paribas Solaris mutual fund in 2018 is as follows.

$$\sigma = \sqrt{\frac{\sum (Rp - \bar{R} p)^2}{(n-1)}}$$

$$\begin{aligned} \sum (Rp - \bar{R} p)^2 &= 0,356\% + 0,004\% + 0,413\% + 0,00001\% + 0,037\% + 0,069\% + \\ &0,036\% + 0,014\% + 0,027\% + 0,200\% + 0,199\% + 0,024\% + 1,4\% \\ &= 0,13\% \end{aligned}$$

After obtaining a value of 1.38%, then it is entered into the standard deviation formula to determine the standard error value of an investment.

$$\begin{aligned} \sigma &= \sqrt{\frac{0,0138}{11}} \\ &= 3,54\% \end{aligned} \tag{5}$$

The standard deviation value is 3.54%, meaning that the standard error of investment in BNP Paribas Solaris mutual fund products is 3.54%.

#### 4.6 Calculation of Risk to the Market ( $\beta$ )

Beta risk reflects the rate of return to market changes. Beta in this study was obtained from the calculation of IHSG returns and bonds. To determine beta risk can use the equation below.

$$\beta_i = \frac{0,005532}{0,001154} = 4,8\%$$



The beta value is 4.8%, meaning that the risk value of the mutual fund portfolio is 4.8%.

#### 4.7 Sharpe Perhitungan Calculation

The calculation to get the sharpe ratio value is based on the average mutual fund performance and the average risk-free investment performance. To calculate the sharpe value can use the equation below. For example, the calculation of the sample mutual fund from Cipta Bond in 2020 is as follows.

$$\hat{S}_p = \frac{0,0122 - 0,0425}{0,0233} = -1,303$$

The results of Sharpe's calculation of the Cipta Bond mutual fund product in 2020 were -1.303, meaning that the value of the Copyright Bond mutual fund in 2020 decreased based on the results of Sharpe's calculation by showing a negative number. The Sharpe value is obtained based on the risk premium, which is the difference between the average risk-free performance, with the higher the Sharpe value, the better the performance of a mutual fund.

#### 4.8 Treynor's Calculations

The measurement of Treynor's value is based on market beta as the risk of the market. To calculate the Treynor value can use the equation below. For example, on the Strategic Plus Tram in 2019 as follows.

$$\hat{T}_p = \frac{0,0081 - 0,0563}{0,577} = -0,041$$

The Treynor value for the Tram Strategic Plus mutual fund is -0.041, meaning that the figure shows a negative result, so the mutual fund is still unable to overcome market risk. The value of the Treynor method is obtained from mutual fund NAV returns, risk-free returns and market returns as measured by beta. The higher the Treynor value, the better the performance of the mutual fund than the market return.

#### 4.9 Jensen's Calculations

The measurement of the Jensen Ratio is to assess how much the investment manager can produce above market performance according to the risk it carries. To calculate the Jensen value, you can use the equation below, for example in the Prospera Bonds mutual fund in 2018 as follows.

$$\alpha = (0,50\% - 5,08\%) - 5,129((-0,05\%) - 5,08\%) = 0,217$$

The Jensen value of the Prospera Bonds mutual fund product in 2018 was 0.217, meaning that the mutual fund had a better performance than the market.

#### 4.10 Wilcoxon Test

**Table 3.** Wilcoxon Test Results Sharpe Method Conventional Equity Mutual Funds

| Test Statistics <sup>a</sup> |                                              |
|------------------------------|----------------------------------------------|
|                              | <i>Sharpe_2020_Saham - Sharpe_2019_Saham</i> |
| Z                            | -6.376 <sup>b</sup>                          |
| Asymp. Sig. (2-tailed)       | .000                                         |
| a Wilcoxon Signed Ranks Test |                                              |
| b Based on negative ranks.   |                                              |

Based on the basis of decision making at Wilcoxon for the paired sample t test. The results of the Wilcoxon Test calculation for the results of the Sharpe method of conventional stock mutual fund products before and during the COVID-19 pandemic using SPSS Software obtained a significance value of 0.000. by looking at the basis for the decision from the wilcoxon test, the results of equity funds are below 0.05. Therefore, the result of  $0.000 < 0.05$ , then  $H_0$  is rejected. This means that there is no difference in the value of the results of conventional stock mutual funds before and during COVID-19 based on the Sharpe method.

#### V. Conclusion

1. The performance of equity and fixed income mutual funds based on the calculation of the Sharpe method in the 2018-2020 period has a non-optimal performance.
2. The performance of equity and fixed income mutual funds based on the calculation of the Treynor method in the period 2018-2020 has not optimal performance.
3. The performance of equity and fixed income mutual funds based on the calculation of the Jensen method in the period 2018-2020 has optimal performance.
4. There is no difference in the performance of conventional equity mutual funds and fixed income mutual funds based on the value of the Sharpe and Treynor method. There is a difference in the performance of conventional equity mutual funds based on the value of the Jensen method and there is no difference from the performance of conventional fixed income mutual funds based on the value of the Jensen method.

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