EVALUATION OF EQUITY MUTUAL FUNDS PORTFOLIO PERFORMANCE IN INDONESIA USING SHARPE, TREYNOR AND JENSEN METHODS

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Besides investing in stocks, bonds, or gold, investors can also opt to invest in mutual funds. Mutual funds can be an alternative investment solution for beginner or risk-averse investor that doesn't have much knowledge in analyzing portfolio performance or know how to make a proper portfolio. There are four types of mutual funds, equity mutual funds, fixed income mutual funds, money market mutual funds, and balanced mutual funds. Equity mutual funds themselves are a type of mutual funds that invest at least 80% in stocks; therefore, the risk is quite higher than other types of mutual funds. The purpose of this study is to evaluate the performance of equity mutual funds available in Indonesia by using the Sharpe Index, Treynor Ratio, and Jensen Index from 2018 to 2020. The writer chooses to use the population of 7 equity mutual funds and Composite Stock Price Index of Indonesia data for the market return. Out of 7 chosen equity mutual funds, it can be concluded that Sucorinvest Equity was the best-performing equity fund during the study period.

Keywords: equity; mutual funds; IHSG, portfolio performance; Sharpe ratio

Introduction

The vast majority of Indonesian Millennials and Generation Z populations have become more interested in investing but lack the necessary financial literacy. According to the OJK Financial Services Authority (2017) in Rahman & Risman (2021), financial literacy

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is knowledge, skills, and beliefs that influence attitudes and behavior to improve the quality of decision-making and financial management to achieve prosperity. Understanding financial literacy may be helpful for an investor in financial management since it directly concerns the ability to manage finances properly and responsibly (Rahman & Risman, 2021)

Warren Buffet, one of the richest men in the world gained his wealth by investing in mutual funds. Mutual funds can be defined as a tool where people give out their money to investment managers to be invested on their behalf. Investors nowadays are faced with many options for investment such as stocks, bonds, cryptocurrency, and other financial instruments. Investors that lack the knowledge or skills to manage or build an optimal portfolio may face high risk and loss that is why mutual funds can be an alternative choice of investment for these investors (Baker et al., 2016).

Baker et al (2016) stated there are various types of mutual funds, such as Money Market Mutual Funds, Bond Mutual Funds, Stock Mutual Funds. Each type of mutual funds is unique and has their own characteristic, therefore will cause differences in their performance. According to Indonesia Stock Exchange (2021), equity mutual fund is a mutual fund that invests at least 80% of its assets in equities. Because it invests in stocks, it has higher risks than other types of Mutual Fund. However, it gives a higher rate of return.

Mutual funds portfolio performance can be measured by using Sharpe Index, Treynor Ratio, and Jensen Index. Out of those 3 measuring instruments, the Sharpe index is the most commonly used and become the standard for industry because of how easily it can be implemented (Pangestuti et al., 2017).

In Indonesia, mutual funds portfolio performance has been evaluated by Pangestuti et al (2017). They conducted a study on equity mutual funds portfolio performance by using the Sharpe Index, Treynor Ratio, Jensen Index, Adjusted Sharpe Index, Adjusted Jensen Index, and Sortino Ratio.

This study aims to evaluate the performance of equity mutual funds in Indonesia by using Sharpe Index, Treynor Ratio, and Jensen Index. The writer hopes the results of this study could suggest equity mutual funds as an investment option to investors.

Literature review

Investment

Napoletano & Curry (2021) stated that investing is the process of buying assets that increase in value over time and provide returns in the form of income payments or capital gain. Another theory from Reilly et al. (2019) investment is the commitment of money for a period of time in order to gain future payments that compensate the investor for the funds, inflation, and uncertainty.

There are four main asset classes that people can invest in with the hopes of gaining profits: stocks, bonds, commodities, and real estate. Companies sell stock to raise money to fund their business operations. Buying shares of stock gives you partial ownership of a company and lets you participate in its gains (and the losses).

Some stocks also pay dividends, which are small regular payments of companies' profits (Napoletano & Curry, 2021).

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Mutual Funds

Besides investing in stocks, bonds, and other financial instruments, mutual funds can be an alternative investment for investors. Mutual funds arise because, some investors experience difficulties to make their portfolio investments (Zakarias & Tumewu, 2015). Those difficulties are usually because investors have to analyst and monitor the market, which can be very time-consuming. According to Zakarias &Tumewu (2015), mutual funds are managed by two parties, the Investment Manager and Custodian Bank. Investment manager (IM) is a company that manages its client's securities portfolio and is responsible for the investment activities. On the other hand, Custodian Bank is a part of the business activities of a bank in the field of safeguarding assets (Zakarias & Tumewu, 2015).

Return and Risk

There are three basic considerations for investment decisions consisting of: (1) Rate of return, (2) rate of risk, and (3) availability of funds. Risk and return have a unidirectional and linear relationship. According to Risman et al. (2017), each type of investment has a risk-return relationship that reflects the principle that safer investments tend to offerlower returns, whereas riskier investments tend to offer a higher return.

Return can be explained as the level of profit from the funds invested by investors. Return can be divided into 2 types, namely expected return and actual return. On the other hand, the risk is the possibility of the actual return that is different from the expected return. Markowitz's (1968) theory as written in Risman et al. (2017) explains the optimal portfolio as an investment that provides maximum results at a certain level of risk or a certain return on the minimal risk.

Portfolio

An efficient portfolio can be defined as combined investable assets in a way that produces the best possible expected level of return for their level of risk or the lowest risk for a target return. The line that connects all these efficient portfolios is known as the efficient frontier. The efficient frontier represents those portfolios that have the maximum rate of return for every given level of risk (Chen, 2021).

As stated in Partono et al. (2019) an optimal portfolio is a portfolio that gives a combination of stocks with high return and low risk. Investors can determine the optimal portfolio with single index model or the Markowitz model.

Capital Asset Pricing Model (CAPM)

Al-Afeef (2017) defined Capital Assets Pricing Model as a market return model based on the portfolio theory developed by Harry Markowitz. The portfolio model requires a critical condition on the weights of assets in medium-efficient portfolios. CAPM is based on a testable forecast on the relationship between risk and required return by choosing a portfolio that should be effective if the asset prices are clear to the market for all assets.

Sharpe and Black developed the CAPM model, which became a reliable model to measure the required return that can reflect the cost of equity financing. CAPM measures the risk of securities by calculating the sensitivity of return to the change in the market's return, the market's risk is measured by Beta Coefficient (Al-Afeef, 2017).

According to Tlemsani et al. (2020), security market line (SML) is the relationship between expected return and security risk Beta. The risk can be divided into 2 types,

systematic and unsystematic risk. The capital market line (CML) shows the relationship between expected return and standard deviation, it also describes how investors react. The most notable difference between CML and SML is how they measure risk differently. SML measures the risk as beta that calculates systematic risk, whereas CML measures the risk as a standard deviation that calculates the total systematic and unsystematic risk (Tlemsani et al, 2020).

Sharpe Index

Pangestuti et al (2017) stated that various methods of measuring portfolio performance that currently exists are mostly based on the theory developed by Markowitz. Among many methods of portfolio performance measurements, there is the Sharpe Index developed by Sharpe, which was originally created to measure the performance of mutual funds in the United States. Sharpe index is the most common measuring instrument used and becomes the standard for industry because of its popularity. Sharpe index can be described as a measure that employs calculations of unit return minus the risk-free rate of return compared to the total risk, commonly referred to as reward to variability. In other words, Sharpe Index emphasizes the portfolio performance measurement based on non-systematic risks (Pangestuti et al, 2017).

Sharpe index can be presented as:

$$s_p = \frac{r_p - r_f}{\sigma_p} \quad \text{(Zakarias \& Tumewu, 2015)}$$

Where:

r_p = portfolio rate of return
r_f = risk free rate of return
σ_p = standard deviation
s_p = Sharpe index

Treynor Method

Based on Qur'anitasari et al. (2019), the Treynor method is a measurement of portfolio performance developed by Jack Treynor. This index is often referred to as the reward to volatility ratio. Like the Sharpe index, portfolio performance on the Treynor Index is measured by calculating portfolio return with the magnitude of the portfolio risk.

The assumption used by Treynor is that the portfolio is well diversified so the risk that is considered relevant is systematic (Qur'anitasari et al, 2019).

Treynor index can be presented as:

$$T_p = \frac{r_p - r_f}{\beta_p} \quad \text{(Zakarias \& Tumewu, 2015)}$$

Where:

r_p = portfolio rate of return
r_f = risk free rate of return
β_p = beta or systematic risk of portfolio
T_p = Treynor index

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Jensen Method

According to Qur'anitasari et al (2019), the Jensen Method is an index that shows the difference between the actual rate of return obtained by the portfolio and the expected rate of return if the portfolio is on the capital market line. The Jensen index is the excess return above or below the security market line, it can be easily be defined as a measurement of how much a portfolio "beats the market" (Qur'anitasari et al, 2019).

Jensen Alpha can be calculated by the following formula:

$$\alpha = \left(R_{i,t} - RFR_t\right) - \beta\left(R_{m,t} - RFR_t\right) \quad \text{(Zakarias \& Tumewu, 2015)}$$

Where:

$R_{i,t}$ = portfolio rate of return
RFR_t = risk free rate of return
$R_{m,t}$ = return of market
α = Jensen alpha

Methodology

This study is a descriptive study with a quantitative approach that illustrates mutual funds portfolio performance with data that is processed using Sharpe, Treynor, and Jensen method. The object of this study is samples of equity mutual funds from 7 investment managers in Indonesia, the Composite Stock Price Index of Indonesia, and the BI rate. The criteria for sample include: (1) Conventional mutual funds product, (2) Active during period 2018-2020, and (3) Have the complete monthly Net Asset Value available from 2018-2020.

Results and Discussions

The results of this study discussed the portfolio performance of 7 chosen equity mutual funds in Indonesia that are active during the 2018-2020 period. The 7 equity mutual funds consist of: Schroder Dana Prestasi, Schroder Dana Prestasi Plus, BNP Paribas Pesona, Rencana Cerdas, Dana Pratama Ekuitas, Sucorinvest Equity, and Sam Indonesian Equity (Tab. 1). To compare the portfolio performance with market return, the writer used the Composite Stock Price Index of Indonesia.

Table 1 - Equity Mutual Funds Expected Return and Standard Deviation
(made by co-authors)

Mutual Funds	Expected Return	Standard Deviation
Schroder Dana Prestasi	0.005346746	0.055974253
Schroder Dana Prestasi Plus	-0.02074249	0.052037254
BNP Paribas Pesona	-0.00814119	0.066384161
Rencana Cerdas	0.021038025	0.065823922
Dana Pratama Ekuitas	-0.02792266	0.085624961
Sucorinvest Equity	0.107300061	0.067378908
SAM Indonesian Equity	0.019502535	0.087295643

Based on Tab. 1, there are 3 out of 7 mutual funds that have negative expected return, those mutual funds are Schroder Dana Prestasi Plus, BNP Paribas Pesona, and Dana Pratama Ekuitas. Sucorinvest Equity has the highest expected return during the period of 2018-2020 with a rate of risk of 6.74%. Schroder Dana Prestasi gives out the lowest expected return with 0,53%.

Table 2. Comparison of Sharpe, Treynor and Jensen Index
(made by co-authors)

Mutual Funds	Sharpe	Treynor	Jensen
Schroder Dana Prestasi	-0.78658	-0.04502	-0.00799
Schroder Dana Prestasi Plus	-1.34745	-0.07813	-0.03705
BNP Paribas Pesona	-0.86641	-0.04994	-0.01508
Rencana Cerdas	-0.43050	-0.02478	0.01380
Dana Pratama Ekuitas	-0.90275	-0.05375	-0.02430
Sucorinvest Equity	0.85969	0.05043	0.10025
SAM Indonesian Equity	-0.34220	-0.01996	0.02528

If the index calculation results are positive and the greater, the portfolio performance is the better. From Tab. 2, almost every mutual fund has negative results except Sucorinvest Equity by using Sharpe and Treynor Index. On the other hand, the Jensen Index shows that there are 3 mutual funds that could be profitable. Those 3 mutual funds are Rencana Cerdas, Sucorinvest Equity, and Sam Indonesian Equity.

By using Sharpe, Treynor, and Jensen Index, it shows that Schroder Dana Prestasi Plus is the worst-performing mutual fund compared to the other 6 mutual funds. Sucorinvest Equity is consistently the best performing mutual fund as shown in table 2.

Conclusion

The results show that not all samples of equity mutual funds used for this study are able to produce a profitable investment. Sucorinvest Equity managed to be consistently given out good performance during the period with the highest score of Sharpe Index, Treynor Index, and Jensen Index.

Therefore, every investor that is interested to invest in an equity mutual fund may choose Sucorinvest Equity. The investment manager with bad and worst-performing mutual funds should reformulate their strategy to improve performance.

Another option is that it is better for investors to create their own portfolios instead of investing in equity mutual funds or perhaps investing in lower-risk mutual funds.

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