Analysis of Global Sharia Mutual Fund Performance and Benchmarking Using Dow Jones Islamic Market Index

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Abstract. This research aims to analyze the performance of Global Sharia Mutual Funds in Indonesia and analyze market performance projected with the Dow Jones Islamic Market Index as a benchmark. This type of research is descriptively quantitative. The data collection instrument is documentation. The data collected is data on the Net Asset Value of mutual funds, risk free rate and Dow Jones Islamic Market Index data. The data analysis methods used are sharpe, treynor, jensen alpha, M-square and treynor & treynor (TT). The results showed that the performance of all Global Sharia Mutual Funds in 2018 as measured by Sharpe and Treynor methods had negative performance, while when measured by the Jensen Alpha, M-Square and TT methods there was only one mutual fund that had a positive performance. By contrast, the performance of all Global Sharia Mutual Funds in 2019 as measured by Sharpe and Treynor methods had a positive performance, while when measured by the Jensen Alpha, M-Square and TT methods there were three mutual funds that had negative performance. The results of mutual fund performance measurement in 2019 are the same as performance in 2020, except measurements with the M-Square method show all positive performance. The results of this study also showed that the comparison of mutual fund returns with benchmarks in 2018–2020 there was one outperform mutual fund. While the comparison of mutual fund performance based on Sharpe, Treynor, Jensen Alpha, M-square (M2) and Treynor & Treynor (TT) methods with benchmarks shows that Schroder Global Sharia Equity Fund (USD) and Syariah BNP Paribas Cakra Syariah USD have a better performance compared to the performance of other Global Sharia Mutual Funds.

Keywords: Sharia mutual fund performance · Sharpe · Treynor · Jensen · M-square; TT · Dow jones Islamic market

1 Introduction

In the era of the Industrial Revolution 4.0 technology is growing in all fields including in finance. Evidence of this development is with the existence of fintech (financial technology) which encourages the ease of society in transacting, lending or investing. It is because of this ease that people are increasingly interested in investing. Investing

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itself is sacrificing an asset (property) owned today by transferring it to another asset that can generate income in the short and long term whose purpose is to increase wealthIn the era of the Industrial Revolution 4.0 technology is growing in all fields including in finance. Evidence of this development is with the existence of fintech (financial technology) which encourages the ease of society in transacting, lending or investing. It is because of this ease that people are increasingly interested in investing. Investing itself is sacrificing an asset (property) owned today by transferring it to other assets that can generate income in the short and long term whose purpose is to increase wealth.

In the perspective of Islamic finance, investment is permissible as long as it does not conflict with islamic teachings. As for the type of investment there are 2, namely investment in real assets and in financial assets. Examples of real asset investments are such as property, new ventures etc. while examples of financial investments are SBI, stocks, bonds, deposits etc. [1]. It is explained that people are often reluctant to invest because they do not understand investment products, are afraid of risk, need large capital, and are not sure about their halalness [2]. In this case, mutual funds are a very appropriate investment product for investors who are not very familiar with investment and risk, and require little capital. Regarding halal or not, investors do not need to worry because sharia mutual fund products are available.

Referring to the Capital Market Law No. 8 of 1995, article 1 paragraph (27) defines that Mutual Funds are containers used to collect funds from the financier community to be further invested in the securities portfolio by investment managers. So investors who are not very familiar with investments do not need to worry about risk and investment management because mutual funds themselves are portfolios so that investment risk can be diversified and will be managed by investment managers.

Based on the news on the website Bareksa.com mutual fund BNP Paribas Cakra Syariah USD managed to get a profit of 25.19% at the end of 2019. BNP Paribas Cakra Syariah USD Mutual Fund is a Global Sharia Mutual Fund. Based on OJK Regulation No. 33/POJK.04/2019 Global Sharia Mutual Fund or Sharia Mutual Fund Based on Overseas Sharia Securities is a mutual fund whose funds are managed at least 51% allocated to overseas Sharia securities or at most 49% allocated to domestic Sharia securities. This type of Global Sharia Mutual Fund is still small and relatively new because it was first launched in 2016 based on dream.co.id news [3].

The inspiration for this research is due to the lack of research that examines the performance of Global Sharia Mutual Funds, especially in Indonesia and the acquisition of high global Islamic Mutual Fund profits at the end of 2019 based on Bareksa.com news. This study intent to analyse the performance of Global Sharia Mutual Funds in 2018–2020 using sharpe, treynor, jensen alpha, M-square (M^2) and treynor & treynor (TT) methods to assess the portfolio performance of each Islamic mutual fund.

2 Library Review

2.1 Capital Market

Capital markets are a means of funding for companies and governments, as well as being a means of investment for investors. In the Capital Market Law (UUPM), namely Law No. 8 of 1995 Article 1 Number 13 explains that, Capital Market is an activity concerned

with public offering and securities trading, public companies related to the securities it issues, as well as institutions and professions related to securities.

Mukhlis defines the capital market as a means that brings together two interested parties, namely parties who have excess funds (investors) and parties who need funds (public companies/issuers). Investors invest in the hope that they will get a profit (return) while the company hopes that the funds can be used as a source of funding for the company's operations [4].

2.2 Sharia Mutual Fund

According to Fatwa National Sharia Council (DSN) number 20/DSNMUI/IV/2001 Mutual funds that operate according to the provisions and principles of Islamic sharia, both in the form of agreements between financiers and investment managers (deputy financiers), and between investment managers and investment users. It can be briefly stated that Islamic Mutual Funds are an investment container used to collect funds from the public (investors) especially with small capital to be further invested in a portfolio of securities by investment managers who operate in accordance with sharia principles.

According to OJK Regulation No. 33/POJK.04/2019 Global Sharia Mutual Fund or Sharia Mutual Fund Based on Overseas Sharia Securities or also called Sharia Securities-Based Mutual Fund Abroad is a mutual fund whose funds are managed at least 51% allocated to overseas Sharia securities or at most 49% allocated to domestic Sharia securities."

The types of Global Sharia Mutual Funds can be said to be still few and relatively new because they were first launched in 2016 based on dream.co.id news [5].

Measurement of the performance of Sharia Mutual Funds in general is often measured using the Sharpe, Treynor and Jensen Alpha methods, but in the study of Muhamad & Nawawi it is explained that Modigiliani and Modigiliani found that all three methods provided results that were difficult to interpret so they triggered the M-square method which is a development of the Sharpe method [6]. Therefore researchers also used the Treynor &Treynor method which is a development of the Treynor method to measure the performance of Global Sharia Mutual Funds in this study.

2.3 Return and Mutual Fund Risk

The main motivation of investors to invest is to get a profit or return on funds that have been invested or commonly called returns. According to Afriyeni it is natural that an investor expects a high return on the investment he does, but there is an important thing to consider, namely how much risk must be borne from the investment [7]. Investment risk is the possibility of loss from an investment. Return and risk have a positive relationship, so the greater the return, the greater the risk.

2.4 Benchmarking

Benchmarking (market performance) is a benchmark that is used as a benchmark in measuring a performance to be used as a means of benchmarking, monitoring and

improving performance. Benchmarks in mutual funds are intended to find out whether mutual funds are above market performance (outperform) or below market performance (underperform). The benchmark used in the study was the Dow Jones Islamic Market Index.

2.5 Sharpe Index

The index was developed by William Sharpe in 1966 and is often referred to as the reward to variability ratio. This index bases its calculations on the concept of capital market line as a guess, namely by dividing the portfolio risk premium by its standard deviation.

This method measures the ratio between excess return (the difference between portfolio return reduced by risk-free return) and the total risk of mutual fund portfolios described with standard deviation. Getting bigger Sharpe value, indicating the performance of mutual funds is getting better.

$$SR_d = \frac{\overline{R_d} - \overline{R_f}}{\sigma_d}$$

Description

$\underline{SR}_d$ = Sharpe Method
$\overline{R_d}$ = Average return on Mutual Fund
$\overline{R_f}$ = *Average return risk free rate*
σ_d = Standard mutual fund deviation.

2.6 Treynor Index

This method was developed by Jeck Treynor, called the reward-to volatility ratio (RVOL). Treynor and Sharpe's difference lies in the risks. Sharpe measures portfolio performance by portfolio risk (its standard deviation) while Treynor measures portfolio performance by its systematic risk, calculated by portfolio beta as an indicator. This method was developed by Jeck Treynor, called the reward-to volatility ratio (RVOL). Treynor and Sharpe's difference lies in the risks. Sharpe measures portfolio performance by portfolio risk (its standard deviation) while Treynor measures portfolio performance by its systematic risk, calculated by portfolio beta as an indicator.

This method measures the comparison between excess return (the difference between a reduced portfolio return and a risk-free return) with a systematic risk (market risk) described with beta. The greater the value of Treynor, indicating the better the performance of mutual funds.

$$TR_d = \frac{R_d - R_f}{\beta_d}$$

Description

TR_d = Treynor Method
$\underline{R_d}$ = *Average return on Mutual Fund*
$\overline{R_f}$ = *Average return risk free rate*
β = Beta.

2.7 Jensen Alpha

In kholidah research, that the Jensen Alpha method is the same as the Treynor method, Jensen uses the beta factor (ß) in measuring the investment performance of a portfolio based on the development of the Capital Asset Pricing Model [8].

This method takes into account the excess return earned by a portfolio exceeding the expected return. A portfolio with an excess of positive results will have a positive Alpha, while a portfolio that consistently gives an advantage of negative results will have a negative Alpha. The greater the value of Jensen Alpha signifies the performance of mutual funds the better.

$$\alpha = \overline{R_{\mathrm{d}}} - (\overline{R_{\mathrm{f}}} + \beta(\overline{R_{\mathrm{m}}} - \overline{R_{\mathrm{f}}})$$

Description

α = Jensen Alpha Method
$\overline{\mathrm{R_d}}$ = *Average return on Mutual Fund*
$\overline{\mathrm{R_f}}$ = *Average return risk free rate*
$\overline{\mathrm{R_m}}$ = Return market
β = Beta.

2.8 M-Square (M^2)

M^2 is an extension of the Sharpe method introduced by Franco Modigliani. M^2 uses an adjustment approach between market risk and portfolio risk. If the calculation results are positive, it can be said that the performance of the portfolio in outperform, vice versa, if the results of this calculation are negative it can be said that the performance of the portfolio is underperformed. M^2 is an extension of the Sharpe method by multiplying the results of Sharpe calculations by the standard market deviation. M^2 is formulated as follows:

$$M^2 = \left(R_d - R_f\right).\frac{\sigma m}{\sigma d} + R_f - R_m$$

Description

$\mathrm{M^2}$ = *M-square measure*
$\mathrm{R_d}$ = *Average return on Mutual Fund*
$\overline{\mathrm{R_f}}$ = *Average return risk free rate*
σm = market deviation standards
σd = Standard mutual fund deviation
$\overline{\mathrm{R_m}}$ = Average *return* market.

2.9 Treynor & Treynor (TT)

TT is another performance development of Treynor's method to make it easier to understand. In kholidah research, Hakim & Purwanto (2019) TT formulated as follows:

$$TT = \text{TRd} - (\overline{R_{\text{m}}} - \overline{R_{\text{f}}})$$

Description:

TR_{d} = Treynor Index mutual funds at t time
$\overline{\text{R}_{\text{m}}}$ = Averaga *Return* market
$\overline{\text{R}_{\text{f}}}$ = Average *return risk free* rate.

3 Research Methods

This type of research is quantitative research. According to Yusuf quantitative research is research that uses quantitative data or other types of data that can be quantized and processed using statistical techniques with the aim of measuring data and generalizing, forecasting, predicting, testing theories, establishing/describing facts, testing hypotheses, showing relationships between variables and finding theories [9].

A population is a whole group of people who have a certain characteristic and can be used to make conclusions. The population in this study is a Global Sharia Mutual Fund registered with OJK as many as 27 Global Sharia Mutual Funds. The sample is part of the number and characteristics that the population. The samples in this study were taken using the purposive sampling method, which is a sample determination technique with certain considerations.

The criteria for determining the sample in this study are as follows:

- Availability of Net Asset Value Data of Global Sharia Mutual Funds for the period 2018–2020.
- Global Sharia Mutual Funds that use the Dow Jones Islamic Index as a benchmark that can be seen from the fund sheet of each mutual fund.

Based on the sample criteria, here are the Global Sharia Mutual Funds that became the object of research in this study, among others:

Table 1. Global sharia mutual fund research sample

No	Mutual Fund	Benchmarks
1.	Syariah Schroder Global Sharia Equity Fund (USD)	DJIM
2.	Syariah BNP Paribas Cakra Syariah USD	DJIM
3.	Mandiri Global Sharia Equity Dollar	DJIM
4.	Syariah Eastspring Syariah Equity Islamic Asia PacificUSD Kelas A	DJIM

3.1 Data Analysis Techniques

The data analysis techniques in this study use quantitative descriptive techniques by collecting and processing secondary data obtained through, https://www.bi.go.id/id/Default.aspx https://www.spglobal.com/ and https://pasardana.id/ websites so that the data can be analyzed using Sharpe, Treynor, Jensen Alpha, M-Square and Treynor & Treynor methods. To achieve the objectives in this research, the analytical methods used through the following stages:

1. Collect secondary data both monthly Net Asset Value (NAV) data of each Global Sharia Mutual Fund that is the object of research, BI 7-Day Repo Rate data and Dow Jones Islamic Market Index data during the period 2018–2020.
2. After the three data are collected, then just calculate mutual fund return, return market, return risk free rate, standard deviation (both portfolio risk and market risk) and beta as follows:

   - Monthly return of each Global Sharia Mutual Fund with formula.

$$\textbf{\textit{Return}}\ \textbf{RD} = \frac{\textbf{NAB}_t - (\textbf{NAB}_{t-1})}{(\textbf{NAB}_{t-1})} \tag{1}$$

   - Return market with formula:

$$\mathbf{R_m} = \frac{\textbf{DJIM}_t - (\textbf{DJIM}_{t-1})}{(\textbf{DJIM}_{t-1})} \tag{2}$$

   - *Return risk free rate* with formula:

$$\mathbf{R}_f = \frac{\textbf{BI7} - \textbf{Day Repo Date}}{n} \tag{3}$$

   - Calculate risk using standard deviation with formula:

$$\sigma = \frac{\sum_{i=1}^{n} (X_i - X_i)^2}{n - 1} \tag{4}$$

     Or with excel formulas = STDEV (*number1; number2*).

   - Calculating beta with formula

$$ß = \frac{\sigma_{ij}}{\sigma_m}$$

     Or with excel formulas = *SLOPE(knowns_ys; known_xs).*

3. After the three data are collected, then just calculate mutual fund return, return market, return risk free rate, standard.
4. After obtaining results from the calculation of return and measurement of mutual fund performance through sharpe, treynor, jensen alpha, M-square and treynor & treynor methods, the performance of each Global Sharia mutual fund is compared to the benchmark performance of the Dow Jones Islamic Market Index so that it can be known which mutual funds outperform or underperform.

4 Result of Discussion

Here are the results of the calculation of global Sharia Mutual Fund returns, risk free rate and market return (Tables 2, 3 and 4).

From the data sources obtained then formulated into mutual fund performance measurement formulas, both by Sharpe, Treynor, Jensen Alpha, M-Square and treynor & treynor methods.

In short, here are the results of measurements of the performance of Global Sharia Mutual Funds.

4.1 Performance of Global Sharia Mutual Funds with Sharpe Method

Based on the results of measuring the performance of Global Sharia Mutual Funds using the Sharpe method in 2018, all four mutual funds have negative performance while in 2019 and 2020 all four mutual funds have positive performance. The Global Sharia Mutual Fund that has the highest performance is the Sharia mutual fund BNP Paribas Cakra Syariah USD in 2019 with a value of 0.508891 but decreased in 2020.While the

Table 2. Return global sharia mutual fund

Mutual Fund Name	Return		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.0093	0.0133	0.0125
Syariah BNP Paribas Cakra Syariah USD	−0.0049	0.0193	0.0142
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−0.0181	0.0129	0.0200
Syariah Mandiri Global Sharia Equity Dollar	−0.0099	0.0156	0.0255

Table 3. Risk free rate

Risk Free Rate		
2018	2019	2020
0.43%	0.47%	0.35%

Table 4. Return market

Return Market		
2018	2019	2020
−0.00646	0.02205	0.02207

Table 5. Global sharia mutual fund performance

Mutual Fund Name	Sharpe		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.365	0.254	0.171
Syariah BNP Paribas Cakra Syariah USD	−0.244	0.509	0.187
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−0.597	0.219	0.308
Syariah Mandiri Global Sharia Equity Dollar	−0.468	0.321	0.474
Mutual Fund Name	Treynor		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.016	0.010	0.012
Syariah BNP Paribas Cakra Syariah USD	−0.010	0.019	0.013
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−0.030	0.009	0.029
Syariah Mandiri Global Sharia Equity Dollar	−0.020	0.012	0.036
Mutual Fund Name	Jensen Alpha		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.43%	−0.67%	−0.45%
Syariah BNP Paribas Cakra Syariah USD	0.04%	0.15%	−0.43%
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−1.43%	−0.82%	0.60%
Syariah Mandiri Global Sharia Equity Dollar	−0.66%	−0.42%	1.07%
Nama Reksa Dana	M-Square		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.004	−0.008	−0.017
Syariah BNP Paribas Cakra Syariah USD	0.001	0.001	−0.017
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−0.014	−0.009	−0.016
Syariah Mandiri Global Sharia Equity Dollar	−0.008	−0.005	−0.015
Mutual Fund Name	Treynor & Treynor		
	2018	2019	2020
Schroder Global Sharia Equity Fund (USD)	−0.0049	−0.0076	−0.0063
Syariah BNP Paribas Cakra Syariah USD	0.0005	0.0019	−0.0053
Syariah Eastspring Syariah Equity Islamic Asia Pacific USD Kelas A	−0.0189	−0.0087	0.0106
Syariah Mandiri Global Sharia Equity Dollar	−0.0094	−0.0049	0.0176

Global Sharia Mutual Fund that has the lowest performance is the Shariah Eastspring Syariah Equity Islamic Asia Pacific USD Class A mutual fund in 2018 with a value of −0.59742.

4.2 Performance of Global Sharia Mutual Funds with Treynor Method

Based on the results of measuring the performance of Global Sharia Mutual Funds using the Treynor method in 2018, all four mutual funds have negative performance while in 2019 and 2020 all four mutual funds have positive performance. The Global Sharia Mutual Fund that has the highest performance is the Mandiri Global Sharia Equity Dollar Sharia Mutual Fund in 2020 with a value of 0.036062, while the Global Sharia Mutual Fund that has the lowest performance is the Eastspring Syariah Sharia Equity Islamic Asia Pacific USD Class A Mutual Fund in 2018 with a value of −0.02955.

4.3 Performance of Global Sharia Mutual Funds with Jensen Alpha Method

Based on the results of measuring the performance of Global Sharia Mutual Funds using the Jensen Alpha method in 2018 and 2019, there is only one mutual fund that has a positive performance while in 2020 there are two mutual funds that have a positive performance and two others have negative performance. The Global Sharia Mutual Fund that has the highest performance is The Syariah Mandiri Global Sharia Equity Dollar Mutual Fund in 2020 with a value of 0.01070, while the Global Sharia Mutual Fund that has the lowest performance is the Eastspring Syariah Sharia Equity Islamic Asia Pacific USD Class A Mutual Fund in 2018 with a value of 0.01425.

4.4 Performance of Global Sharia Mutual Funds with M-Square Method

Based on the results of measuring the performance of Global Sharia Mutual Funds using the M-square method in 2018 there is only one mutual fund that has a positive performance while in 2019 there are two mutual funds that have a positive performance and the other two have negative performance. Global Sharia Mutual Fund that has the highest performance is BNP Paribas Cakra Syariah USD Sharia Mutual Fund in 2019 with a value of 0.00149 and Global Sharia Mutual Fund which has the lowest performance is Schroder Global Sharia Equity Fund (USD) Mutual Fund in 2020 with a value of − 0.01705.

4.5 Performance of Global Sharia Mutual Funds with Treynor & Treynor Method

Based on the results of measuring the performance of Global Sharia Mutual Funds using the TT method in 2018 and 2019, there is only one mutual fund that has a positive performance while in 2020 there are two mutual funds that have positive performance and two others have negative performance. Global Sharia Mutual Funds that have the highest performance are Mandiri Global Sharia Equity Dollar Sharia Mutual Fund in 2020 with a value of 0.01758 and Global Sharia Mutual Fund that has the lowest performance is Sharia Mutual Fund Eastspring Syariah Equity Islamic Asia Pacific USD Class A in 2018 with a value of −0.01887.

4.6 Comparison of Return and Performance of Global Islamic Mutual Funds with Benchmark Dow Jones Islamic Market Index

From the results of the calculation in Table 1. Can be known the return of Global Sharia Mutual Funds that experience underperform or outperform by comparing mutual fund returns with market returns and can also find out which mutual funds continue to increase from year to year. There are two mutual funds whose returns continue to rise from 2018–2020, namely Eastspring Syariah Equity Islamic Asia Pacific USD Class A and Syariah Mandiri Global Sharia Equity Dollar.

From Table 5. It can be known the performance of Global Sharia Mutual Funds that experience outperform or underperform performance both measured by sharpe, treynor, jensen alpha, M-Square and Treynor & Treynor methods by comparing performance value with market return. Among them are mutual funds that experience more outperform based on differences in performance measurement methods are Schroder Global Sharia Equity Fund (USD) mutual funds and Syariah BNP Paribas Cakra Syariah USD 5 times during the period 2018–2020.

5 Conclusion

Based on the results of mutual fund analysis that often experienced an increase in return from 2018–2020 are Eastspring Syariah Equity Islamic Asia Pacific USD Class A and Syariah Mandiri Global Sharia Equity Dollar. While the comparison of mutual fund performance based on sharpe, treynor, jensen alpha, M-square (M2) and Treynor & Treynor (TT) with the dow jones islamic market index benchmark shows that schroder global sharia equity fund (USD) and Syariah BNP Paribas Cakra Syariah USD have better performance compared to the performance of other mutual funds. The recommendation of a Global Sharia Mutual Fund that is worthy of being selected by researchers is the Schroder Global Sharia Equity Fund (USD) Mutual Fund which is based on the results of historically calculated research analysis and also on the pasardana.id site accessed on July 31, 2021. Fluctuations in the return of schroder Global Sharia Equity Fund (USD) mutual fund performance are more stable compared to the performance of other mutual funds.

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