Differences of Performance Measurement in Mutual Funds and Their Impact on Investment Decisions

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Abstract

This study discusses the overall performance of mutual funds within the capital market, divided into conventional and sharia mutual funds. The study population is all mutual funds, both conventional and sharia, that are traded at the Bibit application platform, totaling of 77 conventional and 31 sharia mutual funds. From this, a sample of 17 conventional and 9 sharia mutual funds was selected. The observation period spans from 2021 to 2023. A quantitative approach was employed, utilizing the Risk-Adjusted Return method, consisting of the Sharpe, Treynor, and Jensen models. To test performance differences among conventional sharia mutual funds, the Mann-Whitney U test was used with SPSS 25. The findings indicated no significant performance difference among conventional and sharia mutual funds according to the Shape, Treynor, and Jensen models.

Keyword: mutual funds; investment decision; capital market; financial performance

1. Introduction

The rise of investors in 2023 is indicative of the development of Indonesia's capital market. A press release from PT Kustodian Sentral Efek Indonesia (2023) states that, based on single investor identification (SID), the overall number of capital market investors in Indonesia increased to 11.72 million by September 2023, up 13.76% from 10.31 million the year before. This significant growth in the number of investors indicates the emergence of new or novice investors (newbies) in 2023. Generally, novice investors in the capital market have limited knowledge and experience in analyzing both fundamental and technical aspects to make investment decisions (Simu, 2021).

According to Fitriasuri and Simanjuntak (2022), in order to make the best investment decisions that are in line with their objectives, investors must have sufficient information and comprehend the relevant concerns. Certain types of assets may demand large sums of money for investment, while some investors have limited funds and want to spread them over a number of different investments. The investment of certain types of assets may require large sums of money, whereas some investors have limited resources and want to spread them across multiple investments.

Hence, the concept of mutual funds emerges, pooling funds from investors for diversified management (Yerdian, 2023). For investors with capital but limited time for risk analysis, mutual funds can be a suitable alternative due to professional fund management (Adhi, Aji, & Winarni, 2021).

Adhianto (2020) outlines several benefits of mutual funds that make them an attractive investment alternative: (1) the role of professional fund managers who invest funds into a diversified portfolio in the capital market; (2) investment diversification, which reduces investment risk as funds are allocated across various types of securities, spreading the risk; (3) transparency of information regarding profits, costs, and risks, as fund managers are required to provide information that allows investors to monitor their investments; (4) and high liquidity, meaning that the funds can be easily converted to cash.

Sharia and conventional mutual funds are the two types available in Indonesia. Conventional mutual funds prioritize high returns and follow the guidelines set forth by the Financial Services Authority (Elmanizar & Aveliasari, 2023). On the other hand, sharia mutual funds operate according to Islamic principles, encompassing their contracts and operations. Additional distinctions involve the entirety of portfolio management, including screening and cleansing processes (Kholidah, Hakim, & Purwanto, 2019).

Investors can now buy and sell mutual funds online without visiting a custodian bank or meeting an investment manager, facilitated by electronic platforms like official websites and online applications. Digital platforms simplify access to mutual fund trading through fintech company selling agents. According to KSEI, as of October (2023), 78.10% (9.26 million) of the 11.88 million capital market investors had accounts with fintech mutual fund selling agents. This indicates the popularity of digital platforms for capital market investments. One popular fintech investment platform is the Bibit application, which has become the leading mutual fund selling agent with the most investors.

Before deciding to buy mutual funds, it is very important to assess their performance because investors tend to choose mutual funds with good performance, considering them safer. Mutual fund performance refers to the fund's ability to generate a particular return at a particular level of risk over a previous period. One way to measure mutual fund performance is by calculating ratios that compare the fund's return with its level of risk. Mutual fund performance is commonly measured using two approaches: its return and risk-adjusted return (Alfalisyado & Anggara, 2023).

The study compares the performance of conventional versus sharia mutual funds in financial market form by using risk-adjusted return methods. The methods used in this evaluation include Sharpe, Treynor, and Jensen. This study spans the period from 2021 to 2023.

2. Literature Review

2.1 Mutual Funds

Article 1 paragraph 27 of Undang-Undang Pasar Modal No. 8 of 1995 governs mutual funds in Indonesia. This rule presents mutual funds as a means of collecting investor funds by investment managers and allocating them across securities portfolios. This means that the funds used for investment are collected from investors, who afterwards provide their funds to investment managers to be placed in capital market securities portfolios (Kumalaputri, 2021).

Astutik (2020) identifies several types of mutual funds commonly traded by investment managers based on their investment portfolios: (1) Fixed-Income Mutual Funds, at least 80% of funds are allocated to debt securities or bond instruments, aiming for relatively stable returns. (2) Money Market Mutual Funds invest all their funds in short-term debt instruments like deposits and government securities, offering lower risk but limited returns. (3) Equity Mutual Funds invest a minimum of 80% in equity securities, potentially yielding higher returns but with higher market volatility. (4) Mixed Mutual Funds allocate 1-79% of their funds to a

mix of equity and debt instruments, providing returns typically higher than fixed-income funds while balancing risk.

Mutual funds are separated into two categories: conventional and sharia according on how they are operated.

a. Conventional mutual funds are governed by the Financial Services Authority (OJK). In managing their securities portfolios, conventional mutual funds are not restricted, allowing investment managers to allocate funds to both conventional and Sharia-compliant securities. Conventional mutual funds also do not have a cleansing mechanism for their securities portfolios, as they are generally open to investing in various sectors and issuers.
b. Sharia mutual funds are governed by Regulation No. 15/POJK.04/2015 issued by the Financial Services Authority (OJK) on the Implementation of Sharia Principles in the Capital Market. As an investment instrument, Sharia set different standards compared to conventional mutual funds. What makes a difference is that sharia criteria must be followed in the process of choosing investment instrument and making investments. This means funds cannot be invested in businesses involved in interest-based transactions, gambling, pornography, alcohol, pork, or entertainment activities contrary to Sharia principles (Rudiyanto, 2021). Moreover, Sharia mutual funds also implement a cleansing mechanism aimed at removing non-halal elements from the fund's assets (Harto, Yasni, & Wibowo, 2023). The cleansing process is essential as a precautionary measure against potential future scenarios where Sharia mutual funds may no longer meet Sharia standards.

2.2 Mutual Funds Performance Measurement

Investors aim for returns when investing, similar to other instruments, investing in mutual funds with high returns also entails high risks. Therefore, it is essential to evaluate mutual fund performance in the past before deciding which type aligns with investment goals. Mutual fund performance is used to measure the development of mutual fund products managed over a previous period. Although past performance does not guarantee future success, it can provide opportunities for good performance in the future (Handayani et al., 2019).

2.2.1 Rate of Return

Return, as defined by Adhi et al. (2021) is the profit obtained from investment activities. Investment returns stem from two main sources: yield and capital gain (loss). Yield represents the portion of returns indicating the gradual cash flow or income earned from

owning an investment. On the other hand, capital gain (loss) is another component of return resulting from changes in the price of an investment, leading to either profit or loss for the investor. An investor experiences a profit, also referred to as a capital gain, if the selling price of a securities exceeds the buying price. On the other hand, the investor experiences a loss known as a capital loss if the selling price is less than the purchasing price (Handini & Astawinetu, 2020).

a. Mutual Funds Return

Net Asset Value per Unit of Participation (NAV/UP) is used as a performance indicator to obtain the rate of return from each mutual fund product (Mumtazah & Permadhy, 2022). The formula used to calculate the return from NAV/unit participation includes:

$$R_p = \frac{NAVperunit_t - NAVperunit_{t-1}}{NAVperunit_{t-1}}$$

Where:

R_p	= Mutual fund return
$NAVperunit_t$	= NAV/UP at the end of the period
$NAVperunit_{t-1}$	= NAV/UP at the beginning of the period

a. Market Return

The amount of profit earned by the operation of both the conventional and sharia capital markets is referred to as the market return. The Composite Stock Price Index (JCI) is used in this study as the standard to gauge the degree of returns in the capital market.

$$Rm = \frac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$$

Where:

Rm	= Market return
$IHSG_t$	= Composite market price index at the ending of the period
$IHSG_{t-1}$	= Composite market price index at the beginning of the period

a. Risk-Free Rate of Investment

Profits from investment instruments with little risk are referred to as risk-free assets, or risk-free returns. Bank Indonesia sets this rate using the BI rate, often known as the monetary policy interest rate (Elmanizar & Aveliasari, 2023).

$$\bar{R}_f = \frac{Rf_i + Rf_i + Rf_i}{n}$$

Where:

$\bar{R}_f$ = Average risk-free rate during the observation period

Rf_i = BI Rate in period i

n = Number of observation periods

2.2.2 Risk

Risk in the context of investment refers to risk is the gap between projected and realised returns; the greater the difference, the higher the amount of risk associated with the investment (Astutik, 2020). The standard deviation method is the most often used technique as it gives an exact measurement of how much observed data deviate from predicted values (Elmanizar & Aveliasari, 2023).

$$\sigma = \sqrt{\frac{\sum (x-\mu)^2}{n-1}}$$

Where:

σ = Standard deviation

x = Return of the mutual fund sample

μ = Average return of mutual fund sample

n = Number of observation period

In investing, there are other factors outside the mutual fund portfolio that might cause risk. There is also systematic risk or market risk (symbolized by Beta), which can't be reduced through diversification. This type of risk is associated to overall market fluctuations. (Elmanizar & Aveliasari, 2023)

$$\beta_p = \frac{cov(R_i; R_m)}{var(R_m)}$$

Where:

β_p = Beta

$cov(R_i; R_m)$ = Return covariance of portfolio i and market m

$var(R_m)$ = Variance of market return m

2.2.3 Risk-Adjusted Return

Generally, portfolio performance assessment utilizes measurement methods that evaluate based on the return and risk of the mutual fund itself. The method often used in mutual fund performance measurement, according to Rudiyanto (2021), is Risk-Adjusted Return because this method incorporates both return and risk factors in the calculation. The Treynor Index, Jensen Index, and Sharpe Index are the three calculation models that may be utilised for evaluating mutual fund performance.

a. Sharpe Method

The Sharpe Index is a ratio between returns and total risk (symbolized by standard deviation). The Sharpe Index is used for evaluating portfolio performance comparisons; the higher the value of a portfolio compared to others, the better its performance (Handini & Astawinetu, 2020)

$$\hat{S}_p = \frac{\bar{R}_p - \bar{R}_f}{\sigma_{TR}}$$

Where:

$\hat{S}_p$ = Performance value with Sharpe index

$\bar{R}_p$ = Average mutual funds return across the observation period

$\bar{R}_f$ = Average risk-free rate across the observation period

σ_{TR} = Standard deviation

a. Treynor Method

The Treynor Index is similar to the Sharpe Index in that it relates the portfolio's return to its risk in measuring performance. However, the Treynor Index assumes that the portfolio is well-diversified, so it considers only systematic risk (measured by beta) as relevant. Therefore, in this index, the risk is not calculated using total risk but only using systematic risk (Adnyana, 2020).

$$T_p = \frac{\bar{R}_p - \bar{R}_f}{\beta_p}$$

Where:

T_p = Performance value with Treynor index

$\bar{R}_p$ = Average mutual funds return across the observation period

$\bar{R}_f$ = Average risk-free rate across the observation period

β_p = Beta

a. Jensen Method

The Jensen Index is used to assess how much a portfolio outperforms the market's performance. A positive Jensen Index value indicates that the portfolio has achieved a return higher than its expected return (above the security market line), which is favorable because it means the portfolio has outperformed its systematic risk level (Adnyana, 2020).

$$J_p = \overline{R}_p - [\overline{R}_f + \beta_p(\overline{R}_m - \overline{R}_f)]$$

Where

J_p = Performance value with Jensen index

$\overline{R}_p$ = Average mutual funds return across the observation period

$\overline{R}_f$ = Average risk-free rate across the observation period

β_p = Beta

$\overline{R}_m$ = Average market return across the observation period

3. Material and Method

This study uses three methods (Sharpe, Treynor, and Jensen) to evaluate the performance of conventional and sharia mutual funds using metrics based on risk-adjusted return. In order to explain and compare one group with another, a comparative descriptive method with a quantitative approach was employed in this study. The population in this study is all mutual funds that are traded on the Bibit application platform. The list of mutual fund products traded on Bibit consists of 77 conventional and 31 sharia mutual funds. The observation period of the research conducted is from 2021 to 2023. Purposive sampling was the method of sampling that was employed, and the criteria were money market mutual funds and active trading during the observation period. Obtained includes 17 conventional and 9 sharia money market mutual funds.

3.1 Design Study

To achieve the research objectives, data collection is necessary to obtain the required information. Quantitative data, which are expressed in a numerical form were employed in this study (Sugiyono, 2019). Time series documentation, sometimes referred to as secondary data, is a component of the data gathering process (sequential data over time). Secondary data is information obtained and collected by other parties as the primary source (Mumtazah & Permadhy, 2022).

The data collection method utilizes the technique of documentary study. Documentation in this research refers to obtaining supporting documentation of the required research data. Documents are records of past events and can take the form of writings, images, or historical works by individuals. Therefore, the data for this research is collected from literature and reputable websites, such as the OJK website for mutual funds, the official website of Bank Indonesia, Yahoo Finance for IHSG data, and other various websites as references.

3.2 Data Analysis

The performance measurement methods used include the Risk-Adjusted Return model, such as the Sharpe, Treynor, and Jensen indices. Furthermore, this research utilized tools for data processing using Microsoft Excel and IBM SPSS Statistics version 25. The sequence for analyzing the data includes:

1. Use the Sharpe, Treynor, and Jensen methodologies to analyze the mutual fund performance assessment of sharia and conventional money market funds.
2. Normality testing is utilized to determine whether the data is normally distributed or not, this is a requirement for the use of parametric or non-parametric analysis. In IBM SPSS statistical testing applications, normality testing can be performed using the Kolmogorov-Smirnov test to assess distribution differences in two different samples.
   a. Significance value >0.05, indicates the data is normally distributed.
   b. Significance value <0.05, indicates the data is not normally distributed.

3. Assuming a normal distribution, the Independent Sample T-test is utilized to compare the means of two independent groups. According to the Sharpe, Treynor, and Jensen methods, the independent sample t-test is utilized in this study to determine if the performance of conventional and sharia money market mutual funds differs significantly. The statistical tool for comparison analysis is IBM SPSS, with an alpha significance level of 5%.
   a. Acceptance of Ho (null hypothesis), states no performance difference among conventional and sharia money market mutual funds.
   b. Acceptance of H1 (alternative hypothesis), states there is a performance difference among conventional and sharia money market mutual funds.

   Decision criteria:
   a. Ho is rejected and H1 is accepted if the significant value <0.05
   b. Ho is accepted and H1 is rejected if the significant value >0.05

4. The Mann-Whitney U Test is a nonparametric test used to determine the median difference between two independent groups when data are not normally distributed. This test serves as an alternative to the independent sample t-test when the normality assumption cannot be met.

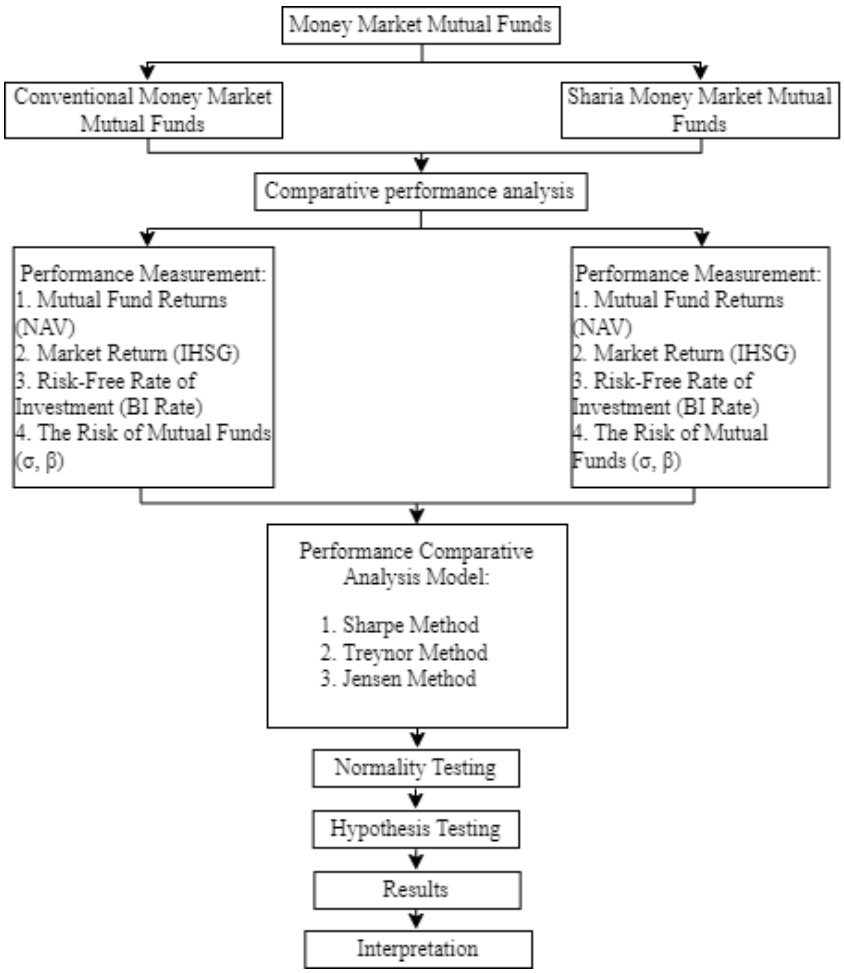

Figure 1. Research Model

4. Result

4.1 The Performance of Money Market Mutual Funds Using the Sharpe Method

The Sharpe Index quantifies the excess return or risk premium in relation to the standard deviation. It serves to evaluate risk premium per unit of risk in a portfolio. A higher Sharpe index value indicates better performance. Below are the calculated performance results of money market mutual funds using the Sharpe method:

Table 1. Performance of Conventional Mutual Funds Based on Sharpe Method

Conventional Money Market Mutual Funds	Sharpe Method

	2021	2022	2023
Avrist Ada Kas Mutiara	-0,1169	-0,3521	-0,4397
Bahana Dana Likuid	-0,2832	-1,1671	-1,8196
Bahana Likuid Plus	0,0470	-0,7203	-1,0145
Batavia Dana Kas Maxima	-0,4140	-2,1869	-1,6446
BNI-AM Dana Likuid	-0,0389	-0,5545	-1,2578
BNP Paribas Rupiah Plus	-2,5530	-1,7919	-2,3092
BRI Seruni Pasar Uang II Kelas A	-0,1910	-0,7472	-1,5710
BRI Seruni Pasar Uang III	0,1833	-0,4962	-0,9767
Danamas Rupiah Plus	0,5212	-0,3700	-1,3641
Eastpring Investments Cash Reserve Kelas A	-0,5419	-0,6530	-0,6471
Jarvis Money Market Fund	-0,4657	-1,2276	-1,2309
Majoris Pasar Uang Indonesia	0,0005	-0,0086	-1,3239
Manulife Dana Kas II Kelas A	-0,3090	-0,8405	-1,1498
Principal Cash Fund	0,0409	-0,5633	-0,5946
Schroder Dana Likuid	-0,7764	-0,5500	-0,8308
Sucorinvest Money Market Fund	1,0348	0,0498	-0,5507
TRIM Kas 2 Kelas A	0,3627	-0,2584	-1,4422
Rata-rata kinerja RDPU Konvensional	-0,2059	-0,7316	-1,1863

A positive Sharpe index indicates that the mutual fund portfolio performs better than a risk-free investment and provides a greater return for the risk taken. Conversely, a negative Sharpe index signifies that the mutual fund portfolio performs worse than a risk-free investment and incurs a greater total risk relative to the return obtained.

Based on the performance calculations across 17 samples of conventional money market mutual funds, in 2021, the best-performing conventional fund according to the Sharpe method was Sucorinvest Money Market Fund with a Sharpe index of 1.0348, while the lowest was BNP Paribas Rupiah Plus at -2.5530. Overall, seven funds showed positive performance in 2019. In 2022, only one conventional fund showed positive performance, Sucorinvest Money Market Fund with a Sharpe index of 0.0498, and the lowest was Batavia Dana Kas Maxima at -2.1869. Moving to 2023, no conventional funds were showing positive performance, with the highest Avrist Ada Kas Mutiara at -0.4397 and the lowest BNP Paribas Rupiah Plus at -2.3092.

Table 2. Performance of Sharia Mutual Funds based on Sharpe Method

Sharia Money Market Mutual Funds	Sharpe Method		
	2021	2022	2023
Avrist Ada Kas Mutiara	-0,1169	-0,3521	-0,4397
Bahana Dana Likuid	-0,2832	-1,1671	-1,8196
Bahana Likuid Plus	0,0470	-0,7203	-1,0145
Batavia Dana Kas Maxima	-0,4140	-2,1869	-1,6446
BNI-AM Dana Likuid	-0,0389	-0,5545	-1,2578
BNP Paribas Rupiah Plus	-2,5530	-1,7919	-2,3092
BRI Seruni Pasar Uang II Kelas A	-0,1910	-0,7472	-1,5710
BRI Seruni Pasar Uang III	0,1833	-0,4962	-0,9767
Danamas Rupiah Plus	0,5212	-0,3700	-1,3641
Eastpring Investments Cash Reserve Kelas A	-0,5419	-0,6530	-0,6471
Jarvis Money Market Fund	-0,4657	-1,2276	-1,2309
Majoris Pasar Uang Indonesia	0,0005	-0,0086	-1,3239
Manulife Dana Kas II Kelas A	-0,3090	-0,8405	-1,1498
Principal Cash Fund	0,0409	-0,5633	-0,5946
Schroder Dana Likuid	-0,7764	-0,5500	-0,8308
Sucorinvest Money Market Fund	1,0348	0,0498	-0,5507
TRIM Kas 2 Kelas A	0,3627	-0,2584	-1,4422
Rata-rata kinerja RDPU Konvensional	-0,2059	-0,7316	-1,1863

Based on the performance calculations of 9 samples of sharia money market mutual funds using the Sharpe method in 2021, two sharia funds showed positive performance. The highest performing fund was Sucorinvest Sharia Money Market Fund with index of 4.070, while the lowest was Eastspring Syariah Money Market Khazanah Kelas A at -4.0561. Moving to 2022, only one sharia fund showed positive performance, Majoris Pasar Uang Syariah Indonesia with a Sharpe index of 0.005, and the lowest was Eastspring Syariah Money Market Khazanah Kelas A at -1.7448. In the latest year, 2023, no sharia funds were showing positive performance, with the highest Majoris Pasar Uang Syariah Indonesia at -0.3662 and the lowest Eastspring Syariah Money Market Khazanah Kelas A at -1.0161.

4.2 The Performance of Money Market Mutual Funds Using the Treynor Method

The Treynor index, similar to the Sharpe index, assesses performance by comparing portfolio return to portfolio risk. However, the Treynor index assumes the portfolio is well-diversified, focusing solely on systematic risk (represented by beta). A positive Treynor index signifies that the excess return exceeds the portfolio's systematic risk. Below are the calculated results of money market mutual funds using the Treynor method:

Table 3. Performance of Conventional Mutual Funds based on Treynor Method

Conventional Money Market Mutual Funds	Treynor Method		
	2021	2022	2023
Avrist Ada Kas Mutiara	0,0303	0,0416	-0,0712
Bahana Dana Likuid	0,0726	0,4075	-5,3859
Bahana Likuid Plus	-0,0117	0,2349	-0,6563
Batavia Dana Kas Maxima	0,0989	0,6941	-8,5137
BNI-AM Dana Likuid	0,0118	-0,3661	0,3749
BNP Paribas Rupiah Plus	0,5144	0,3468	-0,7150
BRI Seruni Pasar Uang II Kelas A	0,0348	0,4248	-0,9835
BRI Seruni Pasar Uang III	-0,0482	0,0997	0,7251
Danamas Rupiah Plus	-0,1179	0,1652	-2,7534
Eastpring Investments Cash Reserve Kelas A	0,2579	-0,5613	-0,2241
Jarvis Money Market Fund	0,1036	-0,7380	0,2719
Majoris Pasar Uang Indonesia	0,0002	0,0032	0,2638
Manulife Dana Kas II Kelas A	0,0707	0,1713	-0,4899
Principal Cash Fund	-0,0170	0,7589	0,7134
Schroder Dana Likuid	0,3178	-1,9372	-0,4928
Sucorinvest Money Market Fund	-0,4481	0,0112	-0,1104
TRIM Kas 2 Kelas A	-0,0506	0,0468	5,6770
Rata-rata kinerja RDPU Konvensional	0,0482	-0,0116	-0,7277

The calculations of conventional money market mutual funds using the Treynor method show that in 2021, 11 out of 17 products had positive performance. The highest performance that year was by BNP Paribas Rupiah Plus with a Treynor index of 0.5144, while the lowest was Sucorinvest Money Market Fund with a value of -0.4481. In 2022, 13 mutual funds recorded a positive performance, with Principal Cash Fund having the highest at 0.7589 and Schroder Dana Likuid the lowest at -1.9372. In the final observation period of 2023, only

6 mutual funds had positive performance. TRIM Kas 2 Kelas A had the highest performance at 5.6770, while Batavia Dana Kas Maxima recorded the lowest at -8.5137.

Table 4. Performance of Sharia Mutual Funds based on Treynor Method

Sharia Money Market Mutual Funds	Indeks Treynor		
	2021	2022	2023
Bahana Likuid Syariah Kelas G	0,0662	0,1086	0,1884
BNI-Am Dana Lancar Syariah	0,0244	-0,8827	0,2075
Eastspring Syariah Money Market Khazanah Kelas A	0,5408	0,3163	0,3202
Majoris Pasar Uang Syariah Indonesia	-0,0173	0,0030	0,1444
Mandiri Pasar Uang Syariah Ekstra	0,1280	0,1275	0,3548
Manulife Dana Kas Syariah	0,1277	-0,9145	0,2212
Schroder Dana Likuid Syariah	0,1505	0,0963	0,3628
Sucorinvest Sharia Money Market Fund	0,2992	-0,0240	0,4065
Trimegah Kas Syariah	0,0373	0,0642	0,1606
Rata-rata kinerja RDPU Syariah	0,1507	-0,1228	0,2629

The calculations of sharia money market mutual funds using the Treynor method show that in 2021, 8 out of 9 sharia mutual funds had positive performance. The highest performance was achieved by Eastspring Syariah Money Market Khazanah Kelas A with a Treynor index of 0.5408, while the lowest was Majoris Pasar Uang Syariah Indonesia at -0.0173. In 2022, 6 funds had a positive performance, with Eastspring Syariah Money Market Khazanah Kelas A again having the highest at 0.3163 and Manulife Dana Kas Syariah the lowest at -0.9145. In 2023, all sharia mutual funds recorded positive performance, with Sucorinvest Sharia Money Market Fund having the highest at 0.4065 and Majoris Pasar Uang Syariah Indonesia the lowest at 0.1444.

4.3 The Performance of Money Market Mutual Funds Using the Jensen Method

The Jensen index measures a portfolio's ability to outperform the market. A positive Jensen index indicated that the portfolio's return is higher that the expected return. Below are the calculated performance results of money market mutual funds using the Jensen method:

Table 5. Performance of Conventional Mutual Funds based on Jensen Method

Conventional Money Market Mutual Funds	Jensen Method		
	2021	2022	2023

Avrist Ada Kas Mutiara	-0,0002	-0,0007	-0,0011
Bahana Dana Likuid	-0,0004	-0,0014	-0,0018
Bahana Likuid Plus	0,0001	-0,0009	-0,0012
Batavia Dana Kas Maxima	-0,0005	-0,0014	-0,0017
BNI-AM Dana Likuid	0,0000	-0,0013	-0,0018
BNP Paribas Rupiah Plus	-0,0017	-0,0022	-0,0026
BRI Seruni Pasar Uang II Kelas A	-0,0003	-0,0016	-0,0018
BRI Seruni Pasar Uang III	0,0005	-0,0012	-0,0015
Danamas Rupiah Plus	0,0011	-0,0003	-0,0014
Eastpring Investments Cash Reserve Kelas A	-0,0013	-0,0024	-0,0020
Jarvis Money Market Fund	-0,0004	-0,0013	-0,0021
Majoris Pasar Uang Indonesia	-0,0001	-0,0001	-0,0011
Manulife Dana Kas II Kelas A	-0,0004	-0,0014	-0,0018
Principal Cash Fund	0,0001	-0,0015	-0,0017
Schroder Dana Likuid	-0,0014	-0,0023	-0,0021
Sucorinvest Money Market Fund	0,0014	0,0001	-0,0018
TRIM Kas 2 Kelas A	0,0005	-0,0004	-0,0013
Rata-rata kinerja RDPU Konvensional	-0,0002	-0,0012	-0,0017

Based on calculations using the Jensen method in 2021, 7 out of 17 mutual funds showed positive performance. The highest value was achieved by Sucorinvest Money Market Fund at 0.0014, while the lowest was BNP Paribas Rupiah Plus at -0.0017. In 2022, only one mutual fund showed positive performance, Sucorinvest Money Market Fund with a value of 0.0001. The lowest value that year was recorded by Eastspring Investments Cash Reserve Kelas A at -0.0024. In 2023, no mutual funds showed positive performance. The highest value was achieved by Majoris Pasar Uang Indonesia at -0.0011, and the lowest was recorded by BNP Paribas Rupiah Plus at -0.0026.

Table 6. Performance of Sharia Mutual Funds based on Jensen Method

Sharia Money Market Mutual Funds	Jensen Method		
	2021	2022	2023
Bahana Likuid Syariah Kelas G	-0,0004	-0,0011	-0,0018
BNI-Am Dana Lancar Syariah	-0,0002	-0,0010	-0,0020
Eastspring Syariah Money Market Khazanah Kelas A	-0,0019	-0,0026	-0,0027

Majoris Pasar Uang Syariah Indonesia	0,0001	0,0006	-0,0015
Mandiri Pasar Uang Syariah Ekstra	-0,0008	-0,0018	-0,0023
Manulife Dana Kas Syariah	-0,0008	-0,0019	-0,0022
Schroder Dana Likuid Syariah	-0,0013	-0,0022	-0,0024
Sucorinvest Sharia Money Market Fund	0,0008	-0,0002	-0,0021
Trimegah Kas Syariah	-0,0001	-0,0005	-0,0016
Rata-rata kinerja RDPU Syariah	-0,0005	-0,0012	-0,0021

Based on the Jensen method in 2021, 2 out of 9 sharia mutual funds had a positive performance. The highest value was achieved by Sucorinvest Sharia Money Market Fund at 0.0008, while the lowest was Eastspring Syariah Money Market Khazanah Kelas A at -0.0019. In 2022, only one sharia mutual fund showed positive performance, Majoris Pasar Uang Syariah Indonesia with a value of 0.0006. The lowest value that year was recorded by Eastspring Syariah Money Market Khazanah Kelas A at -0.0026. In 2023, no sharia mutual funds showed positive performance. The highest value was achieved by Majoris Pasar Uang Syariah Indonesia at -0.0015, and the lowest was recorded by Eastspring Syariah Money Market Khazanah Kelas A at -0.0027.

4.4 Average Performance of Money Market Mutual Funds

The performance analysis of 17 conventional and 9 sharia money market mutual funds from 2021 to 2023 is according to the Sharpe, Treynor, and Jensen. To find the average, all performance figures are summed and the divided by the total number of observations. The maximum value represents the peak performance in data, while the minimum value represents the lowest performance. Below are the descriptive statistics for both conventional and sharia mutual funds:

Table 7. Average Performance of Mutual Funds

Mutual Fund Performance	Minimum		Maximum		Mean	
	Conven	Sharia	Conven	Sharia	Conven	Sharia
Sharpe	-2,5530	-4,0561	1,0348	4,0697	-0,7079	-0,6407
Treynor	-8,5137	-0,9145	5,6770	0,5408	-0,2303	0,0969
Jensen	-0,0026	-0,0027	0,0014	0,0008	-0,0010	-0,0012

Analyze mutual fund performance with the Sharpe reveals that the lowest value for conventional mutual funds is -2.5530, whereas for sharia mutual funds is -4.0561. This

indicates that the poorest performance, according to the Sharpe method, was seen in sharia mutual funds. The highest value for conventional mutual funds is 1.0348, compared to 4.0697 for sharia mutual funds, indicating that the best performance occurred in sharia mutual funds. The average Sharpe index for conventional mutual funds is -0.7079, which is lower than the -0.6407 average for sharia funds. This means that although both types of funds performed poorly, sharia funds performed better that conventional.

In terms of the Treynor method, conventional mutual funds have a minimum value of -8.5137, which is than the -0.9145 of sharia funds, showing that the lowest performance was in conventional mutual funds. The maximum value for conventional is 5.6770, surpassing the 0.5408 of sharia funds, indicating the best performance was achieved by conventional mutual funds. The average Treynor method value for conventional funds is -0.2303, while for sharia funds it is 0.0969. These figures suggest that sharia funds have better average performance, even showing positive results.

According to the Jensen method, the minimum value for conventional is -0.0026, and for sharia it is -0.0027. This shows that the both types of funds have returns lower than the risk-free rate, with minor differences. The highest value for conventional mutual funds is 0.0014, compared to 0.0008 for sharia funds, indicating the best performance was in conventional funds. The average Jensen value for conventional mutual funds is -0.0010, slightly higher than the 0.0012 for sharia funds. These results indicate that although both have poor performance, conventional mutual funds show slightly higher performance based on the Jensen method.

4.5 Normality Testing

To evaluate the performance differences among conventional and sharia money market funds, a significance test is conducted using IBM SPSS software. Initially, a normality test is performed using the Kolmogorov-Smirnov Test. The decision-making basis is that if the asymptotic significance value (α) is greater than 0.05, the data is considered normally distributed, and the Independent Sample T-test used for comparison. Conversely, if the significance value (α) is below 0.05, indicating non-normal distribution, the Mann-Whitney U-test is employed for comparison.

Table 8. Normality Testing Results

Mutual Funds	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.

Sharpe	Conventional	.100	51	.200
	Sharia	.172	27	.040
Treynor	Conventional	.286	51	.000
	Sharia	.282	27	.000
Jensen	Conventional	.149	51	.007
	Sharia	.152	27	.111

The normality test results with the Kolmogorov-Smirnov show that the performance data for conventional mutual funds based on the Sharpe method and sharia mutual funds based on the Jensen method are normally distributed, as their significance values exceed 0.05. For the other data, the significance values are below 0.05. Thus, further analysis will use the non-parametric Mann-Whitney U test to assess if there is a significant performance difference between conventional and sharia money market mutual funds.

4.6 Hypothesis Testing

The purpose of the study, which employs the Mann-Whitney U Test, is to find out if the performance of conventional and sharia money market funds differs significantly as measured by the Sharpe, Treynor, and Jensen methods. The decision-making criteria are as follows: if the Mann-Whitney test's significance value exceeds 0.05, the null hypothesis (Ho) is accepted. If the significance is below 0.05, the null hypothesis (Ho) is rejected. Acceptance of Ho implies no significant performance difference between conventional and sharia money market mutual funds. Rejection of Ho indicates a significant performance difference between these two types of funds.

Table 9. Hypothesis Testing Results

Test Statistics[a]

	Sharpe	Treynor	Jensen
Mann-Whitney U	559.000	521.000	574.500
Wilcoxon W	1885.000	1847.000	952.500
Z	-1.360	-1.760	-1.199
Asymp. Sig. (2-tailed)	.174	.078	.231

According to the table, the non-parametric Mann-Whitney test results show that for the Sharpe method, the asymptotic significance value is 0.174 > 0.05, thus Ho is accepted. Similarly, for the Treynor method (0.078) and the Jensen method (0.231), the asymptotic

significance values are greater than 0.05, which also means Ho is accepted. The acceptance of Ho indicates no significant performance difference between conventional and sharia money market mutual funds based on the methods used: Sharpe, Treynor, and Jensen.

5. Discussion

5.1 Comparison of Conventional and Sharia Money Market Mutual Fund Performance Based on Sharpe Method

Using the Sharpe method, it was found that Sharia Money Market Mutual Funds generally outperform Conventional on average. Both types of funds, however exhibit negative average performance values, which is due to the risk-free rate being higher than the performance values due to the risk-free rate surpassing the funds' performance. This higher risk-free rate suggest that investing in money market mutual funds is less advantageous than other investment options (Adhi et al., 2021). The Mann-Whitney test results show that null hypothesis (Ho), and the alternative hypothesis (H1) is rejected. Therefore, indicates no significant performance difference among conventional and sharia mutual funds according to the Sharpe method. This indicates that the comparison of the excess return or risk premium derived from the total risk (measured as standard deviation) of conventional and sharia mutual funds is similar, with no significant difference.

This finding aligns with research by Negoro W et al., (2021), which found no significant performance difference between of conventional and sharia equity mutual funds using the Sharpe method. The study concluded that the sample had similar return and risk levels. Additionally, Handayani et al. (2019) supported this by comparing conventional fixed-income and sharia fixed-income mutual funds, finding no significant difference in performance based on the Sharpe method. Their study also noted that sharia fixed-income demonstrated more stable performance due to lower risk, while returns remained comparable to conventional mutual funds.

5.2 Comparison of Conventional and Sharia Money Market Mutual Fund Performance Based on Treynor Method

According to the Treynor technique, Sharia money market mutual funds perform on average better than conventional. While conventional mutual funds have negative performance values, sharia have positive three-year average performance. This indicates that when it comes to mitigating market risk, sharia mutual funds outperform conventional. The Mann-Whitney difference test results also indicate that the null hypothesis (Ho) is accepted, and the alternative hypothesis (H2) is rejected, signifying no significant performance difference among

conventional and sharia mutual funds. This suggests that the comparison of the excess returns and the systematic risk (market risk) represented by the portfolio beta of both conventional and sharia mutual funds is similar, showing no significant difference.

These results are in line with the study conducted by Handayani et al. (2019), which found no significant difference in the performance of conventional and sharia mutual funds for either equity mutual funds or fixed-income mutual funds. Adhi et al. (2021) also revealed that sharia equity mutual funds performs better than conventional when using the Treynor method. However, this research did not find a significant difference between the performance of conventional and sharia equity mutual funds.

These contradict the findings of Elmanizar dan Aveliasari (2023), which proved a significant difference in the performance of conventional equity mutual funds and sharia equity mutual funds, with sharia equity mutual funds performing better according to the Treynor method.

5.1 Comparison of Conventional and Sharia Money Market Mutual Fund Performance Based on Jensen Method

According to the Jensen method, the performance values for mutual funds indicate that both conventional and sharia money market mutual funds have negative average performances (-0.0010 and -0.0012), with conventional funds having a slight better. The Mann-Whitney difference test results show that the null hypothesis is accepted and H3 is rejected, indicating no significant performance difference between conventional and sharia money market mutual funds. This might occur due to the similar average performance of both fund types compared to their market performance (IDX Composite).

Research by Negoro W et al., (2021) also found no significant performance difference between conventional and sharia equity mutual funds using on the Jensen method, suggesting both have comparable risk and return levels. Similarly, a study by Adhi et al. (2021) did not find any significant difference in the performance of conventional and sharia equity mutual funds using the same method.

Conversely, research by Handayani et al. (2019) identified a performance difference between sharia and conventional equity mutual funds based on the Jensen method. Additionally, Elmanizar dan Aveliasari (2023) also found a significant difference, with sharia equity mutual funds outperforming conventional ones according to the Jensen calculation method.

6. Conclusion, Implication, and Recommendation

a. Conclusion

1. The Sharpe method, analyzed through the Mann-Whitney statistical test of money market mutual funds, reveals no significant performance difference between conventional and sharia mutual funds. This indicates that the sampled conventional and sharia money market funds exhibit similar levels of risk and return.
2. The Treynor method, analyzed through the Mann-Whitney statistical test of money market mutual funds, reveals no significant performance difference between conventional and sharia mutual funds. This indicates that the sampled conventional and sharia money market funds exhibit similar levels of risk and return.
3. The Jensen method, analyzed through the Mann-Whitney statistical test of money market mutual funds, reveals no significant performance difference between conventional and sharia mutual funds. This indicates that the sampled conventional and sharia money market funds exhibit similar levels of risk and return.

b. Implication

The study implies that based on various performance measurements (Sharpe, Treynor, and Jensen) showed no significant difference between the performance of conventional and sharia money market mutual funds, particularly those traded on the Bibit application platform. This suggests that both types of mutual funds, when evaluated using the Sharpe, Treynor, and Jensen methods, show similar levels of risk and return. Therefore, investors using the Bibit application can expect comparable outcomes regardless of whether they choose conventional or sharia money market mutual funds.

c. Recommendation

Further researchers might consider assesing mutual funds performance using alternative methods such as information ratio, omega, sortino, and by conducting longer study periods. Moreover, it is recommended that subsequent research expands beyond money market mutual funds to include equity mutual funds, fixed-income mutual funds, mixed mutual funds, and protected mutual funds.

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