

Analysis of Stock Mutual Fund Performance Measurement and Comparison with LQ 45 Index

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Abstract

The purpose of the research was evaluation of performance is one of the important things that must be considered when choosing the type of mutual fund for investment purposes. Performance measurement is needed to help investors determine their mutual fund choices according to the return and risk of each instrument. Mutual fund performance measurement is not only measured by Net Asset Value (NAV) or returns, but also by comparison with market performance against certain benchmarks. The use of benchmarks in measuring mutual funds is intended to compare whether mutual fund performance can beat the market or lose to the market. This research compares the performance of 32 active stock mutual funds determined using a purposive sampling method with the performance of the LQ-45 index. The measurement method used is the Sharpe and Treynor method. The research hypothesis was tested using the Mann – Whitney Test with the SPSS version 16 program. The research results showed that the 32 stock mutual funds studied had better performance than the LQ-45 index performance measured using both the Sharpe method and the Treynor method. The stock mutual fund that has the highest Sharpe value is the Simas Stock Featured Mutual Fund with a Sharpe index of 0.2148, while the lowest is the Schroder Dana Achievement Plus Mutual Fund with an index value of -1.3655. The stock mutual fund that has the highest Treynor value is the Mandiri Investa Smart Bangsa Mutual Fund with a Treynor index of 0.0653, and the lowest is the Dana Ekuitas Prima Mutual Fund with a Treynor index of -0.6655

Keywords: performance of stock mutual funds, Sharpe method, Treynor method, LQ-45 Index

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1. Introduction

Humans have known needs since birth. Initially, human needs were limited to food, clothing and shelter, and later developed into education and health. Over time, human needs grow to be unlimited, although the ability of humans to fulfil their needs is very limited. Human needs that are increasing every moment make people think about how to fulfil their needs in the future. The thing that can be done to prepare for future life is to set aside some of the income either by saving or by investing.

Three main things underlie the need to invest, namely the existence of future needs or current needs that have not been able to be met at this time, the desire to increase the value of assets already owned, and inflation. (Andi, et al, 2021)

Investment is the postponement of current consumption to be used in efficient production over a period of time to increase total satisfaction. Investment can take the form of real assets such as houses, land, property, and others that are tangible. Or it can also take the form of financial assets such as securities traded in the capital market, the aim is to increase satisfaction in the form of financial well-being (Fadila & Nuswandari, 2022)

In general, investment can be divided into two, namely real investment (in visible assets) and financial investment (in invisible assets). Real investment can be interpreted as investment activities in tangible or visible assets such as gold, land or property. Meanwhile, financial investment is an investment activity in securities in the form of shares or securities and securities. Financial investment consists of 2 parts, namely: First, investment in the money market, which is a market for various short-term financial instruments with high liquidity, low risk and minimal funds. Examples of money market investments are Government Securities (SUN) and Bank Indonesia Certificates (SBI). Secondly, investment in the capital market is a market for various long-term financial instruments with low liquidity

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due to the relatively longer investment period. Examples of capital market investments are stocks, bonds, warrants and rights. (Caturini, 2023)

Of the various types of investment, investment in the capital market is the most popular because it is considered to have promising long-term prospects. The Capital Market according to Law No. 8 of 1995 Article 1 paragraph 13 is an activity related to the public offering and trading of securities, public companies related to the securities they issue, as well as institutions and professions related to securities. The Capital Market was formed to provide facilities in the transfer of funds from parties with excess funds (lenders) to parties who lack funds (borrowers). This economic function is also performed by other financial institutions such as banks. The only difference is that in the Capital Market, the funds traded are long-term funds and are done directly, without financial intermediaries.

People who carry out investment activities in the capital market are often faced with problems related to investment instruments. Investors want an instrument with a certain rate of return. In the Capital Market there are various investment instruments that can be selected, including stocks, bonds, options, rights issues, and warrants. However, this choice is not enough to be used as an alternative choice for the investor community. This is due to investors' lack of understanding of investment management, investors' lack of experience in investing in portfolios and the limited time investors have to analyse and monitor investments in the capital market (Caturini, 2023). In addition, for investors with limited funds, direct investment requires large transaction costs to achieve the level of investment diversification where investment diversification can only be done on a limited portfolio variety (Khairunida, 2017).

In choosing an investment, investors are faced with 2 factors that affect investment, namely risk and return. According to Lubis & Harahap (2022) return is the result obtained from investment. This return can be divided into two, namely the return that has occurred (realized return) which is calculated based on historical data, and the expected return that will be obtained by investors in the future. Meanwhile, risk is the amount of deviation between the expected return and the actual return. The greater the deviation, the greater the level of risk (Latifah, 2020). Risk can also be defined as the potential for error in making predictions about the price or value of securities in the future (Caturini, 2023).

Many investors are risk-averse but many are risk-takers. There are many ways to optimise returns and minimise risk, one of which is by diversifying funds and paying attention to the investment horizon. Portfolio diversification is defined as the formation of a portfolio in such a way as to reduce portfolio risk without sacrificing the returns generated. Portfolio diversification can be done by entering various assets from all existing asset groups, such as investing in shares in various companies.

From the various problems above, there is currently an easy investment alternative offered to the investor community, with a measurable level of risk, and provides a fairly high level of return with limited capital. This alternative is known as Mutual Fund. Mutual funds are one of the easiest and cheapest forms of portfolio diversification. The purpose of offering mutual funds in the Capital Market is to provide opportunities for investors who are inexperienced, do not have sufficient time to conduct investment analysis and for investors who have limited capital. Mutual funds are capital market instruments that are currently in demand by all investors in the world and also in Indonesia, especially small investors. In Indonesia itself, mutual funds began to be recognised when PT BDNI Reksa Dana issued a mutual fund in the form of a company in 1995 along with the enactment of Law Number 8 of 1995 concerning Capital Markets.

The presence of mutual funds in the capital market according to Nusair & Olson (2022) is quite attractive to investors because there are several advantages that can be provided, namely, investment diversification and broad risk distribution, low costs, prices on shares and participation units are not affected by the stock exchange, can be monitored regularly, guaranteed liquidity, and portfolio management is carried out professionally by investment managers.

In Indonesia, the number of mutual funds that appear from year to year is increasing, and the Net Asset Value (NAV) and the number of participation units are increasing. The development of mutual funds from 2017 to 2022 can be seen in Table 1.

Judging from the development of mutual funds in the last six years in Table 1, mutual funds are experiencing rapid development, and it is very likely that they will grow even more in the following year so that mutual funds can be chosen as a profitable investment alternative.

Mutual funds in Indonesia according to Bapepam regulations are generally divided into 4 types of categories, namely money market mutual funds, fixed income mutual funds, equity mutual funds, and mixed mutual funds (Martalena & Melinda, 2011). Besides the general types of mutual funds, as the mutual fund industry develops, more and more

mutual fund variants can be found in the market. For example, structured mutual funds, index mutual funds, sharia mutual funds, forex mutual funds, sectoral mutual funds, social mutual funds, ETF mutual funds, and mutual funds through insurance (unit link).

Table 1. Mutual Fund Development in Indonesia 2017-2022

Year	Number of Mutual Funds	NAV (in billion rupiah)	Units in circulation
2017	616	114.694	82.079.764.510,89
2018	671	167.232	98.982.071.474,41
2019	754	187.592	113.714.293.833,48
2020	794	192.545	120.886.854.956,50
2021	1091	241.571	142.728.464.114,04
2022	1193	271.969	182.980.302.630,53

Source: ojk.go.id, data processed

Evaluation of performance is one of the important things that must be considered in choosing the type of mutual fund that is the investment objective. Therefore, before choosing to invest in mutual funds, investors should assess their performance (Caturini, 2023) Performance measurement is needed to help investors determine their mutual fund choices according to the return and risk of each instrument. The Investment Company Institute in America conducted research on investor behaviour on what is the basis for consideration of the American people before finally making a choice to a particular mutual fund, the result is 75% due to performance factors (Handini & Astawinetu, 2020).

There are various ways of measuring investment performance, especially mutual funds, namely the Sharpe Index, Treynor Index, Jensen Model, and also the Henriksson and Merton Model. (Caturini, 2023) Measurement of mutual fund performance is not only measured by the NAV or return, but also its comparison with market performance with certain benchmarks. The use of benchmarks in mutual fund measurement is intended to compare whether mutual fund performance can beat the market or even lose to the market (Eduardus, 2017).

According to Nusair & Olson, 2022, on a developing exchange, and the liquidity of each type or high investment instrument there will be a market index for each type of instrument. This market index is a performance indicator for a particular type of instrument or portfolio. To be compared to a benchmark, there are three things that need to be considered, namely the type of instrument, taxation, and the same period. Each type of investment instrument will have a different benchmark. Equity funds are benchmarked against a stock index, bonds are benchmarked against a bond index, and money market funds use interest rates as their benchmark,

Each country has its own market index. For example, the Dow Jones Index in America, the Straits Times Index (STI) in Singapore, the Kuala Lumpur Stock Exchange (KLSE) in Malaysia, the Stock Exchange of Thailand (SETI) in Thailand, the Korea Composite Stock Price Index (KOSPI) in South Korea, the Hang Seng Index (HIS) in Hong Kong, the Nikkei Index in Japan, the Taiwan Stock Exchange (TWSE) in Taiwan, The Financial Times Stock Exchange (FTSE) in the UK, the Australian Stock Exchange (ASE) in Australia, and the Shanghai Stock Exchange Composite Index (SHCOMP) in China. In Indonesia in particular, the recognised stock market index is the JCI (Composite Stock Price Index).

The use of the JCI as a proxy for calculating market returns is perceived to have a weakness, as the JCI uses a weighting based on the capitalisation of all stocks. The capital market in Indonesia is classified as a thin market, i.e. a capital market where some of the securities are not actively traded, so the JCI which includes all listed stocks cannot be used as a capital market indicator. Therefore, on 13 July 1994, another alternative index was introduced, the LQ 45. This index was formed from 45 actively traded stocks, so the JCI which includes all listed stocks cannot be used as a capital market indicator. (Caturini, 2023)

The LQ-45 index is selected based on the average stock transactions and the average market capitalisation value in the order of the 60 largest in the regular market for the last 12 months (Jogiyanto, 2010: 106). In addition to the JCI and LQ 45 Index, there are other indices such as the Jakarta Islamic Index (JII), Main Board Index (MBX) and Development Board Index (DBX), and the Kompas 100 Index.

Research on mutual fund performance has often been done but has different results and there is still confusion and errors in calculating or measuring performance. Ranking the performance of mutual funds made from an incorrect calculation can actually provide misleading information for investors and harm mutual fund managers (Pratomo & Nugraha, 2009: 185). The results of the calculation of the performance of stock mutual funds that outperformed the

benchmark were also obtained by research conducted by Ratna Dewi (2011) which examined 9 stock mutual funds in the period 2005 - 2009 using the Sharpe and Jensen methods, which resulted in all stock mutual funds having better performance than the JCI. Historically, it is very difficult to find mutual funds that are able to beat performance consistently every year. However, a mutual fund is considered to perform if it is able to show better performance than its benchmark.

2. Research Method and Materials

This research uses a comparative quantitative approach. This research was conducted at mutual fund companies registered with Bapepam and actively traded on the Indonesia Stock Exchange (IDX) in the research period from January 2017 to December 2022. The research object in this study is an equity mutual fund listed on the Indonesia Stock Exchange and still active in the research period, namely from January 2017 to December 2022. In this study, the dependent variable is performance. In this study, the independent variables are stock mutual funds and the LQ - 45 index. The population in this study were all stock mutual funds registered with Bapepam in the period 1 January 2017 to 31 December 2022. This study uses purposive sampling method, namely determining the sample based on certain considerations based on research objectives (Sugiyono, 2008: 122). The data collection method used to obtain the data needed in connection with this research is the non-participant observation method. The data analysis technique used is performance appraisal analysis and hypothesis testing..

3. Results and Discussion

The normality test is carried out to determine whether the data from the sample fulfils a normal distribution or not. Table 3 shows the results of the normality test.

Table 2. Kolmogorov-Smirnov Normality Test Results

		SHARPE	TREYNOR
N		33	33
Normal Parameters ^{a,b}	Mean	-.619700	-.303909
	Std. Deviation	.4871454	1.1159692
Most Extreme Differences	Absolute	.101	.443
	Positive	.097	.370
	Negative	-.101	-.443
Test Statistic		.101	.443
Asymp. Sig. (2-tailed)		.200 ^{c,d}	.000 ^c

Source: processed data, 2024

The significance value shown by the Kolmogorov Smirnov normality test results for the Treynor ratio is $0.000 < \alpha$ ($\alpha = 0.05$) so it can be concluded that the performance data measured by this method is not normally distributed. Because one of the data groups is not normally distributed, the difference test used is the Mann-Whitney Test non-parametric statistical test.

Table 3 shows the test results with the Mann-Whitney Test, the performance of stock mutual funds measured by the Sharpe method has an average value (mean) of 16.50 while the performance of the LQ 45 index has an average of 33.00. This shows that the performance of stock mutual funds has a higher average value than the performance of the LQ 45 index because the ranking is arranged downward from the largest value to the smallest value. The value of Asymp. Sig. (2-tailed) of $0.041 < 0.05$ means that H1 is accepted. This means that the performance of stock mutual funds is better than the performance of the LQ 45 index measured using the Sharpe method.

Table 4 shows the test results with the Mann-Whitney Test, the performance of stock mutual funds measured by the Treynor method has an average (mean) value of 16.50 while the performance of the LQ 45 index has an average of 33.00. This shows that the performance of stock mutual funds has a higher average value than the performance of the LQ 45 index. Sig. (2-tailed) of $0.041 < 0.05$ which means that H2 is accepted. This means that the performance of stock mutual funds is better than the performance of the LQ 45 index measured using the Sharpe method.

Table 3. Mann-Whitney Test Sharpe Ratio

Ranks				
	RD	N	Mean Rank	Sum of Ranks
RANK_SHARPE	RDS	32	16.50	528.00
	LQ45	1	33.00	33.00
	Total	33		

Test Statistics^a

	RANK_SHARPE
Mann-Whitney U	.000
Wilcoxon W	528.000
Z	-1.680
Asymp. Sig. (2-tailed)	.093
Exact Sig. [2*(1-tailed Sig.)]	.041 ^b

a. Grouping Variable: RD

b. Not corrected for ties.

The results showed that the performance of equity mutual funds is better than the performance of LQ45. The investment managers have been able to beat the market with an active investment strategy through the selection of stocks that perform well so as to produce returns that exceed the market. Whereas the LQ45 itself is compiled not based on the selection of the best performing stocks, but rather on stocks with high liquidity and are heavily traded. This results in stocks that perform poorly in the LQ45 but have high liquidity. As a result, the performance of the LQ45 itself is dragged down by these underperforming stocks and the overall performance of the LQ45 is not maximised.

Table 4. Mann-Whitney Test Treynor Ratio

Ranks				
	RD	N	Mean Rank	Sum of Ranks
RANK_TREYNOR	RDS	32	16.50	528.00
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Test Statistics^a

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a. Grouping Variable: RD

b. Not corrected for ties.

4. Conclusion

Based on the results of data analysis and discussion of research results, the following conclusions can be drawn: The performance of stock mutual funds measured using the Sharpe and Treynor methods gets higher results than the performance of the LQ 45 index, so it can be said that the performance of stock mutual funds is better than the performance of the LQ-45 Index in the measurement period January 2017 - December 2022. In terms of return, the LQ 45 index has an average return for 3 years of 9%, while the average return of stock mutual funds. the largest is owned by Mandiri Investa Cerdas Bangsa Mutual Fund for 3 years of 0.1408 or 14.08%, and the smallest return is owned by BNP Paribas Solaris mutual fund with a return of -1.5676. Of the 32 stock mutual funds above, there are 8 stock mutual funds whose average return for 3 years exceeds the average return of LQ 45, and there are 6 mutual funds with negative returns. Calculation of the performance of stock mutual funds individually carried out using the

Sharpe method found that all stock mutual funds used as the object of research Sharpe Ratio is higher than the Sharpe Ratio of the LQ 45 Index which is -1.3732. The stock mutual fund that has the highest Sharpe value is Simas Saham Unggulan Mutual Fund with a Sharpe index of 0.2148 while the lowest is Schroder Dana Prestasi Plus Mutual Fund with an index value of -1.3655. Of the 32 stock mutual funds, only 4 have a positive Sharpe Ratio. Calculation of the performance of stock mutual funds individually using the Treynor method found that all stock mutual funds used as research objects have a higher Treynor Ratio compared to the LQ 45 Index which is -6.4783. The stock mutual fund that has the highest Treynor value is Mandiri Investa Cerdas Bangsa Mutual Fund with Treynor index of 0.0653 while the lowest is Prima Equity Fund Mutual Fund with Treynor index of -0.6655. Of the 32 stock mutual funds, only 3 have a positive Treynor ratio. The results of the calculation of stock mutual fund performance using both the Sharpe and Treynor methods consistently show that all stock mutual fund products have higher Sharpe and Treynor values than the LQ 45 index value. The difference in results between the comparison of stock mutual fund performance with the performance of the LQ 45 Index using the Sharpe and Treynor methods is because the Sharpe method uses total risk as a divisor, while the Treynor method uses systematic risk.

Based on the conclusions and limitations in the implementation of research, suggestions that can be proposed as follows: Investors and potential investors who want to invest in stock mutual fund instruments need to know the performance of the mutual fund they want to buy to match the expected return and risk. It is necessary to conduct an in-depth study to assess stocks that are worthy of being included in the portfolio by investment managers whose stock mutual funds have negative performance. Regarding future research, we recommend extending the observation period, including dividend distribution, determining the criteria for comparison variables, and using other performance measurement methods besides the Sharpe and Treynor methods.

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