STOCK MUTUAL FUND PERFORMANCE ASSESSMENT ANALYSIS

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Abstract– This study aims to find out the performance of stock mutual funds using sharpe, Jensen and treynor methods. The samples used in this study consisted of 10 companies with the highest NAV as of December 2019 namely PT Batavia Prosperindo Asset Manajemen, PT Mandiri Manajemen Investasi, PT Bahana TCW Investment Manajemen, PT Schroder Investment Manajemen Indonesia, PT Manulife Asset Manajemen, PT Sinarmas Asset Manajemen, PT BNI Asset Manajemen, PT Danareksa Investment Manajemen, PT Syailendra Capital and PT Eastpring Investment Indonesia.

The results showed that The Performance of Stock Mutual Funds Using Sharpe Method from 10 companies in 2015-2019 resulted in Undervalue results. The performance of stock mutual funds using treynor method from 10 companies in 2015-2019 resulted in Undervalue results. The results of the Performance of Stock Mutual Funds Using the Jensen Method from 10 companies in 2015-2019 resulted in undervalue results.

Keywords: *Sharpe, Treynor, Jensen, Beta, Standard Deviation*

I. Introduction

Capital Market is a market of various types of long-term financial instruments. The role of the capital market is very large in the economy because it performs two functions, namely economic function and financial function. The function of the capital market economy is to provide facilities that bring together the over-funding parties (investors) and those who need funds (issuers). While the capital market is also referred to as a market where tfour meetings between parties who have funds with parties who need funds by trading securities that generally have a lifespan of more than one year and where the sale and purchase of securities is called the Stock Exchange(Tandelilin, 2017:25).

Instruments traded in the capital market there are 4 types, namely stocks, bonds, derivatives and mutual funds. A stock is an asset or securities issued by a publicly traded company on the stock exchange and as a proof of ownership of the company for the investor who owns the securities (Tandelilin, 2017:31).

Mutual fund products are alternative products for potential investors who have limited funds but want to invest in the capital market, because funds invested into mutual funds will be combined with funds from other investors to create a purchasing power that is much greater than making their own investments.

One of the advantages of mutual funds is that it is easy for prospective novice investors who do not have a lot of time and knowledge to manage their funds directly. Because mutual funds are managed directly by investment managers and also supervised by the OJK (financial services authority), mutual funds are also long-term so do not care too much about the ups and downs of the index.

Mutual fund performance is a stage that must be watched by investors before investing their capital. Because one of the indicators to analyze the performance of mutual funds is the success of the investment manager's strategy in managing his mutual fund portfolio as reflected in the Net Asset

Value (NAV).

Mutual fund valuation based on Jensen, Share and Treynor methods required data such as average return, beta, minimum rate and risk free rate. In writing this thesis, researchers will discuss about the valuation of stock mutual funds only, and mutual funds and a that will be researched are the top 10 investment manager companies with stock mutual funds with the highest NAV. And researchers take stock mutual funds because so far researchers have learned a lot about stock theory, and with the conditions that are not described above.

II. LITERATURE REVIEW
2.1   Research Review

Data from previous research that the author of the analysis serves to be used as a reference and take positive values from research that has been done before. In addition, the research will be one of the comparisons of the research to be done, as well as complete the limitations on the previous research. Although overall the authors could not find the exact same research title as the title of the study to be done, but applied to the equations on the methods and variables used.

Previous International research conducted by Pilbeam and Preston (2019) explained about the performance of mutual funds in Japan. This study aims to assess the performance of 355 equity mutual funds in Japan that were actively managed between April 2011 and April 2016.

Previous International research conducted by Maronrong and Ramaditya (2018) explained about the analysis of mutual fund stock performance. This study aims to find out the influence of risk of fund raising, to know the beta value of mutual funds and to find out the difference in mutual fund performance. The method used in this study was to use Sharpe, Treynor and Jensen methods. The results in this study showthat the risk has a significant effect on return, the beta value of mutual funds is greater than the unit.

Previous international research conducted by Rico, Campus and Juan (2018) explained about empirical studies of regional mutual funds, the value of diversivism. This research aims to assess the diversification of mutual fund portfolios. The method used in this research is to use Sharpe method. The results in this study show that the Asia Pacific sample has a high portfolio, but does not provide diversified value to fund shareholders.

Further research conducted by Rustendi (2017) This research aims to find out the differentiation of performance of fixed income mutual funds, stock mutual funds, and reksa mixed funds from the real return aspects of some asset management, namely BNP paribas maxi bonds, Mandiri investa syariah funds, Manulife flagship bonds, Manulife stock funds, Panin maxsima funds, Trim syariah stocks, Cipta syariah balance, Cipta balance, Reksa dana prima. The results of the analysis showed that the performance of stock mutual funds recorded positive and relatively higher results than mixed mutual funds, while fixed income mutual funds recorded negative results but were slightly adrift of the other two mutual funds. Statistically at a confidence level of 95% the performance of fixed income mutual funds, stock mutual funds, and mixed mutual funds from aspects of real returns does not differ significantly.

Further research conducted by Bella and Permadhy (2016) This research aims to find out the comparison of stock mutual fund performance using sharpe method and treynor method from several asset management namely Treasure fund super maxxi, Sucorinvest equity fund, Axa citradinamis and Danareksa mawar. As a result of his research,   the object used is a stock mutual fund listed on the Indonesia Stock Exchange (IDX) from 2013-2016. The choice of stock mutual   funds as the object of   research because this type of stock mutual fund has the highest return among other types of mutual funds, hal this is because80% of the assets in this mutual fund are in the form of stocks in Indonesia.

Furthermore, the research conducted by Puspita (2016) This study aims to analyze the comparison of stock mutual fund performance with the most advanced mutual funds in Indonesia based on sharpe, treynor, jensen and Treynor and Black's methods and to find out the comparison of stock mutual fund performance with benchmark performance in the period. The result of analysis of stock mutual fund performance comparison data with protected mutual funds obtained various results from Sharpe, Treynor, Jensen, and Treynor and Black methods with different ratings. Based on the comparison   of the performance of stock mutual funds and protected mutual funds with benchmarks in   2013   there were 16 reksa stock funds have outperform performance   and 39 stock

mutual funds have underperform performance and 37 protected mutual funds have outperform performance and 9 protected mutual funds have underperform performance.

Further research conducted by Rumintang and Azhari (2015) This research aims to find out the performance of stock mutual funds and to know the performance of conventional or sharia mutual funds that have better performance based on Sharpe method, Treynor method and Jensen method. The results of the study using Sharpe, and Treynor analysis tools showed the performance of conventional and sharia stock mutual funds have a performance above the performance of risk-free investments (in this study SBI and SBIS). By using the Jensen index method, there is only one mutual fund that is in sharia type that has negative performance. This indicates that only those investment managers are under under performing.

Further research conducted by Aprillia, Wijaya and Indriati (2018) This research aims to analyze how portfolio performance owned by equity mutual funds with the largest assets under management when stock market conditions tend to be bearish. The results showedthat the use of all measurements, the performance of mutual funds with the largest AUM outperformed the market, but different results were obtained for diversification measurement and Jensen's Alpha.

Furthermore, the research conducted by Marantika (2015) researchers has the aim to explain the relationship between research variables through hypotheses based on data, such as rotation stage and risk stage related to mutual fund performance stock. The results showed that by using various existing insurance disbursement tools, SAM Indonesian Equity stock mutual fund is the best performing stock mutual fund during the research period. Furthermore, it was also found that most of the stock mutual funds under review have diversified well.

2.2   Capital Market

The capital market is also referred to as a market where the meeting place between the parties who have funds and the parties who need funds by trading securities that generally have a lifespan of more than one year and where the sale and purchase of such securities is called the Stock Exchange (Tandelilin, 2017:25).

Indonesia's capital market has a series of stages in its trading mechanism and it is already included in the prevailing laws and regulations. According to Mohamad Samsul (2015:61) the capital market is categorized into four markets, namely:

1. First Market (Prime Market)
   Pasar Perdana is a means for corporate agencies that offer shares or bonds to the public. This initial market is commonly referred to as initial public offering (IPO). With this initial offer, the company changed its previously closed form to a public company (Tbk).

2. Second Market (Secondary Market)
   Secondary market is a means for investors to buy and sell securities and prices are formed by investors through a sell and buy offer (order driven market). The trading mechanism in the secondary market is integrated with the central clearing system, namely The Clearing of Indonesian Securities Guarantee (KPEI) and the central custodian of the Indonesian Central Securities Depository (KSEI) which is a trading system on the Indonesia Stock Exchange.

3. Third Market
   This third market is also called OTC Market (over the counter market) is a means for investors and securities traders in conducting securities trading transactions price formed by members of the exchange (market maker). In the third market there will be competition between market makers in offering prices because investors can choose which market maker has the price in accordance with the wishes of investors.

4. Fourth Market
   The fourth market is a means for buying and selling transactions between investors without going through securities intermediaries. This transaction is done directly through electronic communication network (ECN), this fourth market is usually only done by large investors with the aim of saving transaction costs compared to when doing transactions in the second market (secondary market).

2.3   Investment

Investment is a delay in current consumption to be put into productive assets during a certain

period of time yang in the future (Jogiyanto, 2015:5). Meanwhile, according to Tandelilin (2017:2) Investment is a commitment to a number of funds or other resources carried out at this time, with the aim of obtaining a number of profits in the future mas a.

Based on some of the above understandings, it can be interpreted that an investment is a placement of funds in an asset at the expense of consumption for a certain period of time with the aim of obtaining future profits. Investment has 4 types namely:

1. Shares are a certificate that shows proof of ownership of a company, if an investor owns 1 million shares of a company out of a total of 100 million shares then the investor owns 1% of the company. Therefore, based on the above definition, it can be interpreted that a stock is an asset or securities issued by a public company traded on the stock exchange and as a proof of ownership of the company for investors who own the securities (Tandelilin (2017:31).

2. Bonds are a debt recognition letter issued by a company or government or other institution as a debtor, which has a certain nominal value and the ability to be able to pay interest periodically on the basis of a certain fixed percentage. (Yuliana et al. (2011).

3. Derivatives are bilateral contracts or payment exchange agreements whose value is derived or derived from products that become "principal reference" or also called "underlying products" rather than trading or exchanging physical assets, market participants make an agreement to exchange uang, assets or a   value in the future by referring to the asset that is the main reference.

4. By Law No. 8, 1995 article   1 paragraph 27 on the capital market. Mutual funds are containers used to raise funds from the investor community to be further invested in securities portfolios by investment managers. Mutual funds are present as a means to raise funds from people who have capital and have a desire to make investments, but only have limited time and knowledge.

2.4   Stock

According to Tandelilin (2017:31) shares are a certificate that shows proof of ownership of a company, if an investor owns i 1 million shares of a company out of a total of 100 million shares then the investor owns 1% of the company.

Therefore, based on the above definition, it can be interpreted that a stock is a securities issued by a public company that is traded on the stock exchange and as a proof of ownership of the company for investors who own the securities.

According to Samsul (2015:59) shares have two types, namely:

1. Common Stock
   Common Stock is a type of stock that will receive profit after the preferred share profit is paid. And stock price index calculations are based on ordinary stock prices.

2. Preffered Stock
   Preferred stock is a type of stock that has the right first to receive profit and has cumulative profit rights. Cumulative rights are intended that the right to profit is not obtained in a year that suffers losses, but will be paid in the year that the profit, so that the preferred shares will receive a profit twice. This privilege is given to preferred shareholders because it is they who supply funds when the company is experiencing financial difficulties.

2.5   CAPM

CAPM was first introduced by Sharpe, Lintner, and Mossin in the mid-1960s. CAPM is a model that links the   expected return   level of a risky asset with the risk of the asset to a balanced market contingency. CAPM is based on portfolio theory put forward by Markowitz. Based on Markowitz's model, each investor is assumed to be crediting his portfolio and choosing an optimal portfolio on the basis of his preference for return and risk. Select portfolios are portfolio points located along the efficient portfolio line. In addition to that assumption, there are several other assumptions in CAPM that are made to simplify existing realities, as follows:

1. All investors have an identical   probability   distribution of future   returns, as they have the same expectations or expectations.

2. All investors have the same time period, e.g. one year.

3. All investors can borrow or lend money at a risk-free rate of return.
4. There are no transaction fees.
5. No income tax.
6. There is no inflation.
7. There are a lot of investors, and not a single investor can influence the price of a security. All investors are price-takers.
8. The market is in a balanced state(equilibrium).

2.6   Mutual Funds

Mutual fund is a forum and pattern of fund management or capital for prospective investors to invest in instruments and investments available in the Capital Market by purchasing mutual fund participation units (UP). These funds are then managed by the Investment Manager into an investment portfolio, whether in the form of stocks, bonds, derivatives, money markets or others. Mutual funds are also one of the investment alternatives for the investor community, especially small investors and investors who   do not have a lot of time and expertise to calculate the risk of their investment.

Referring to The Capital Market Law No. 8 year 1995, article 1 paragraph 27 is defined that mutual funds are containers used to raise funds from the investor community to be further invested in securities portfolios by investment managers. There are three   things related to the definition mentioned, First, the existence of funds from the investor community. Second, the fund is invested in a securities portfolio, and Third, the fund is managed by the investment manager. Thus, the funds in the mutual fund are   funds with investors, while the investment manager is the trusted party to manage the funds.

III. RESEARCH METHODS

The research strategy used by the author is a descriptive research strategy that   examines an event or phenomenon. Descriptive research is a study that aims to provide or describe a current state or phenomenon by using scientific procedures to answer the problem in real time. The approach used in this research is quantitative approach because it uses number data. As well as reviewing and researching based on the data obtained.

The data used in this research is quantitative data. In this study the authors used a quantitative descriptive approach because in this study researchers sought to find the performance characteristics of stock mutual funds in the top 10 investment manager companies with the highest NAB stock mutual funds which were then compared with the Jensen, Treynor and Sharpe methods.

The population in this study is a stock mutual fund in the top 10 investment manager companies with the highest NAV stock mutual funds recorded still active in the OJK.

The sample is part of the total and characteristics   possessed by the population that was the subject of the study. Sampling techniques in this study using   purposive sampling is sampling in accordance with   certain criteria. The sample criteria set out in this study include:
1. The sample taken is a stock mutual fund product in the top 10 investment manager companies with the highest NAV recorded still assets at OJK.
2. The information used comes from the publication of an active mutual fund list report posted on the OJK website in the period 2015 – 2019.

Table 3.1
The top 10 companies with the highest NAV recorded are still assets at the OJK as of December 31, 2019.

No	Company Name	NAB
1.	Pt. Batavia Prosperindo Asset Management	47.147.177.379.791,61
2.	Pt. Independent Investment Management	44.982.441.566.175,86
3.	Pt. Bahana Investment Management	40.965.788.870.506,69

4.	PT. Schroder Investment Management	40.720.413.509.698,75
5.	Pt. Manulife Asset Management Indonesia	29.697.291.779.991,44
6.	Pt. Sinarmas Asset Management	22.493.279.435.600,46
7.	Pt. BNI Asset Management	20.289.887.722.264,58
8.	Pt. Danareksa Investment Management	22.688.619.829.839,66
9.	Pt. Syailendra Capital	20.718.764.519.179,56
10.	PT. Eastpring Investment Indonesia	20.617.934.793.233,38

Source : *www.ojk.co.id* (Processed Data).

The availability of data will greatly determine how the processing and analysis is carried out so that the data obtained must meet the criteria correctly, accurately and can be scientifically accounted for. The data used in this study is secondary data namely NAB, IHSG and Beta.

The method to obtain data is by studying documents and literature. Data collection is done through:
1. This www.ojk.co.id to get the sample and the theories that support this research.
2. Website www.bi.go.id to get information about monthly SBI rate during the period 2015 December 2019
3. The www.bapepam.go.id for Mutual Fund Net Asset Value (NAV) data to be taken as a sample of this writing is monthly data for the relevant year.

3.1. Variable Operationalization

Operational Variables are required to measure the variables used in the research. The operational variables of the research that have been determined have the following definitions:

Table 3.2
Operationalization of Research Variables

No	Research Variables	Variable	Formula	Measurement Scale
1.	Sharpe Ratio	Sp = Sharpe Ratio Value Portfolio $\overline{rp}$ = Avandragand randturn Portfolio $r\,\overline{f}$ = Average Risk free Rate σP = Standard deviation return portfolio as a benchmark Risk	$Sp = \dfrac{r\,\overline{p}-r\,\overline{f}}{sp}$	Ratio
2.	Jensen Ratio	α = Jensen Alpha $\bar{R}p$ = Average return Portfolio $\bar{R}f$ = Average risk free, interest rate $\bar{R}m$ = Average market return βp = Beta portofolio	$a = \bar{R}p\,[\,\bar{R}f + bp\,(\bar{R}m - \bar{R}f)\,]$	Ratio

No.				
3.	Treynor Ratio	Tp = Portfolio Treynor Ratio Value $\bar{r}p$ = Average return portofolio $\bar{rf}$ = Average Risk free Rate βp = Beta portfolio as a risk benchmark	$Tp = \dfrac{\bar{r}p - \bar{rf}}{bp}$	Ratio
4.	Mutual Fund Return	RRD = Return of Stock Mutual Funds NABt = NAB current period t NABt-1 = NAB previous period t-1	$RRD = \dfrac{NAB_t - NAB_{t-1}}{NAB_{t-1}}$	Ratio
5.	Return of JCI	RM = IHSGt Market Return = IHSG Value period now t IHSGt-1 = IHSG value of the previous period t-1	$RM = \dfrac{IHSG_t - IHSG_{t-1}}{IHSG_{t-1}}$	Ratio
6.	Standard Deviation	p = Standar Deviasi x = Value of data in sample x = Average Calculate n = Number of data	$p = \sqrt{\dfrac{\sum_{1}^{n}(x-x)_3}{No.1}}$	Ratio
7.	Beta	βi = Beta Mutual Fund σim = Covariance return Mutual Funds and market returns σm2 = Variance return market	$\beta i = \dfrac{sim}{sm2}$	Ratio
8.	Risk Free Rate	Rf = risk free return Σ BI = number of BI rates in a given period n = number of calculation periods Certain.	$RRF = \dfrac{\sum BI\ Rate}{\sum n}$	Ratio

3.2. Data Analysis Methods

To calculate the performance of stock mutual funds using the sharpe method, the Jensen method
and treynor method, then the steps to be done are as follows:

1. Determine the return rate of each stock mutual fund.
2. Specifies return level of JCI as a comparison.
3. Determine the level value of the risk free rate.
4. Determine the risk level of each stock mutual fund and JCI as a comparison.
5. Determine the level of market risk using Beta.
6. Determine the performance of stock mutual funds using the sharpe method.
7. Determine the performance of mutual funds saham using the treynor method.
8. Determine the performance of stock mutual funds using the Jensen method.

a. Mutual Fund Return Calculation

Return of Stock Mutual Fund Return of stock mutual fund is the level of profit indicated by the change in the asset value of the stock mutual fund (Hartono,2014: 705). The return of stock mutual funds can be calculated by the following formula:

$$RRD = \frac{NABt - NABt^{-1}}{NAB_{t-1}} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (3.1)$$

Description:

RRD = Return of NaBt Stock
Mutual Fund = NAB current
period t
NABt-1 = NAB previous period t-1

b. Ihsg Return Calculation

Return of JCI is a measure of market performance ability as a comparison, in showing a performance that has been achieved in a certain period taken into account from the value of JCI, which can be calculated by the following formula:

$$RM = \frac{IHSGt - IHSGt^{-1}}{IHSG_{t-1}} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (3.2)$$

Description:

RM = Market Return
IHSGt = IHSG value of the current period t
IHSGt-1 = IHSG value of the previous period t-1

c. Standard Deviation Calculation

The standard deviation indicates deviations that occur from the average performance of the resulting stock mutual fund (Wardah,2012). Standard deviation is calculated using the following formula:

$$\sigma = \sqrt{\frac{\sum_{1}^{n}(x - \bar{x})^3}{No.1}} \quad \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots (3.3)$$

Description:

p = Standar Deviasi
x = Value of data in sample
x = Average
Calculate n = Number
of data
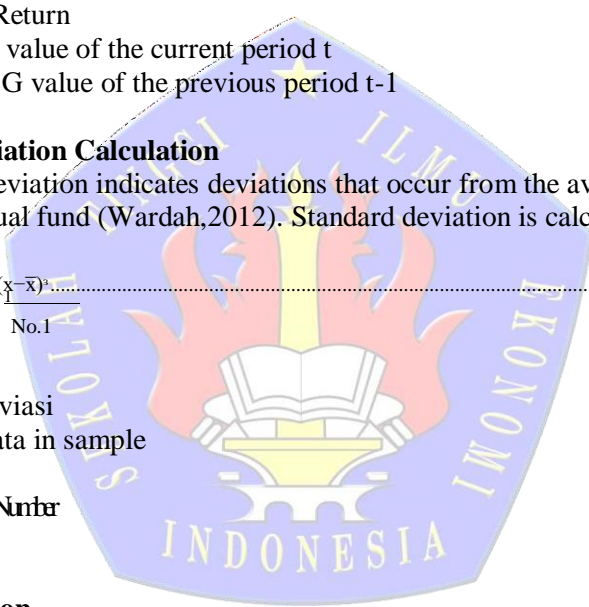
d. Beta Calculation

Beta is measured by dividing covariance between market returns and mutual fund returns by variance benchmarks, which can be calculated by the following formula:

$$I = \frac{'im(\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots}{sm2} \quad 3.4)$$

Description:

βi = Beta Mutual Fund
σim = Covariance of Mutual Fund return and market return
σm2 = Variance return market

e. Calculation of Risk Free Rate

Risk Free Rate Of risk-free investment assumed by the average interest rate of Bank Indonesia Certificate (SBI) in a certain period (Wardah, 2012) can be calculated by the following formula:

$$\mathrm{Rf} = \frac{\sum BI\ Rate}{\sum n} \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \textbf{(3.5)}$$

Description
:

      Rf = risk free return
      Σ BI = number of BI rates in a given period
      n = number of calculation periods

f. Sharpe Method Calculation

Sharpe method can be aimed at measuring mutual fund performance. The method is a premium risk based on the difference between the average performance generated by mutual funds and the average performance of risk-free investments. Risk free or risk-free investments are assumed to be like the average Bunga rate of the SBI. The sharpe method formula is: (Bodie, Kane, Marcus, 2014:562)

$$Sp = \frac{\bar{r}_p - \bar{r}}{\sigma_{ep}} \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \textbf{(3.6)}$$

Description:

    Sp   = Portfolio Sharpe Ratio Value
    t   = Average return on portfolio
    h   = Average Risk free Rate
    ep

    σP   = Standard deviation of portfolio return as a risk benchmark

g. Jensen Method Calculation

Measurement by jensen method is an assessment of the performance of investment managers based on how competent the investment manager is able to perform above market performance in accordance with the risks it has. The formula presented by Jensen is: (Bodie,Kane, Marcus,2014:563). The formula of Jensen Method is:

$$\alpha = \bar{R}p\ [\ \bar{R}f + (\bar{R}m - \bar{R}f)\ \beta p\ ] \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \textbf{(3.7)}$$

Description:
    α   = Jensen Alpha
    $\bar{R}p$ = average portfolio return
    $\bar{R}f$ = Average risk free, interest rate
    $\bar{R}m$ = Average market return
    βp   = Beta portfolio

h. Treynor Method Calculation

Treynor method has similarities with Sharpe method which also has premium risk base, treynor method difference in this case dividing using beta(β)which is the risk of fluctuation relative to market risk. (Bodie, Kane, Marcus, 2014:563). The formula of Treynor Method is:

$$Tp = (r - r)/\beta p \cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots\cdots \textbf{(3.8)}$$

Description :

    Tp   = Portfolio Treynor Ratio Value
    r   = Average return portofolio
    r   = Average Risk free Rate
    βp   = Beta portfolio as a risk benchmark

IV. RESULTS AND DISCUSSIONS
4.1   Stock Fund Performance in 2015 Using Sharpe Method

Table 4.1

The best performing stock mutual fund in 2015 with sharpe method.

No	Name of Stock Mutual Fund	Sharpe 2015
1.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	73,50%
2.	Reksadana Simas Danamas Saham	28,94%
3.	Schroder Fund Achievement Fund	-54,73%
4.	Reksadana Syailendra Equity Opportunity Fund	-96,52%
5.	Batavia Stock Fund	-99,78%
6.	Manulife Stock Fund Mutual Funds	-176,09%
7.	Bahana Trailblazer Fund Mutual Fund	-185,42%
8.	Danareksa Mawar Mutual Fund	-190,30%
9.	Reksadana Mandiri Investa Equity Movement	-195,18%
10.	Reksadana Eastpring Investments Value Discovery A	-215,34%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2015 using the Sharpe method, 8 stock mutual funds showed negative performance and 2 stock mutual funds showed positive performance. This indicates that 2 stock mutual funds based on Sharpe method are worthy to be used as investment places. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the yield, the more optimal the performance of a mutual fund and a. Here are 10 stock mutual funds with the best performance based on sharpe method in 2015. The highest performing stock mutual fund is the BNI-AM Stock Fund Inspiring Equity Fund from the Investment Manager of PT BNI Asset Management with a Sharpe value of 73.50% .

4.2   Stock Fund Performance in 2016 Using Sharpe Method

Table 4.2

The best performing stock mutual fund in 2016 with sharpe method.

No	Name of Stock Mutual Fund	Sharpe 2016
1.	Batavia Stock Fund	13,84%
2.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	6,44%
3.	Reksadana Eastpring Investments Value Discovery A	-49,79%
4.	Schroder Fund Achievement Fund	-68,96%
5.	Bahana Trailblazer Fund Mutual Fund	-102,28%
6.	Reksadana Mandiri Investa Equity Movement	-119,52%
7.	Reksadana Syailendra Equity Opportunity Fund	-147,83%
8.	Danareksa Mawar Mutual Fund	-172,73%
9.	Reksadana Simas Danamas Saham	-173,10%
10.	Manulife Stock Fund Mutual Funds	-180,32%

Source : Processed Data (2020)

Based on the calculation of stock mutual fund performance in 2016 using Sharpe method, 8 stock mutual funds showed negative performance and 2 stock mutual funds showed positive performance. This indicates that 2 stock mutual funds based on Sharpe method are worthy to be used as investment places. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the   result,   the   more   optimal   the

performance of a mutual fund anda.. Here are the 10 best performing stock mutual funds based on sharpe method in 2016. The highest performing stock mutual fund is Batavia Dana Saham from Investment Manager PT Batavia Prosperindo Indonesia with a Sharpe value of 13.84%.

4.3 Stock Fund Performance in 2017 Using Sharpe Method

Table 4.3
The best performing stock mutual fund in 2017 with sharpe method.

No	Name of Stock Mutual Fund	Sharpe 2017
1.	Manulife Stock Fund Mutual Funds	-6,75%
2.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-30,76%
3.	Batavia Stock Fund	-46,22%
4.	Bahana Trailblazer Fund Mutual Fund	-75,45%
5.	Reksadana Simas Danamas Saham	-127,45%
6.	Reksadana Syailendra Equity Opportunity Fund	-130,29%
7.	Reksadana Eastspring Investments Value Discovery A	-145,36%
8.	Reksadana Mandiri Investa Equity Movement	-158,73%
9.	Schroder Fund Achievement Fund	-159,54%
10.	Danareksa Mawar Mutual Fund	-174,38%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2017 using the Sharpe method, 10 stock mutual funds showed a negative performance. This indicates that 10 stock mutual funds based on Sharpe method are not worthy to be used as tempat investment. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the yield obtained, the more optimal the performance of a mutual fund.. Here are the 10 stock mutual funds with the best kinerja based on sharpe method in 2017. The highest performing stock mutual fund is Manulife Dana Saham Mutual Fund from Investment Manager PT Manulife Asset Manajemen with Sharpe value of -6.75%.

4.4 Stock Mutual Fund Performance in 2018 Using Sharpe Method

Table 4.4
The best performing stock mutual fund in 2018 with sharpe method.

No	Name of Stock Mutual Fund	Sharpe 2018
1.	Reksadana Simas Danamas Saham	122,17%
2.	Reksadana Mandiri Investa Equity Movement	8,91%
3.	Reksadana Eastspring Investments Value Discovery A	1,12%
4.	Reksadana Syailendra Equity Opportunity Fund	-2,06%
5.	Manulife Stock Fund Mutual Funds	-24,29%
6.	Batavia Stock Fund	-38,85%
7.	Schroder Fund Achievement Fund	-64,44%
8.	Bahana Trailblazer Fund Mutual Fund	-70,23%
9.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-151,40%
10.	Danareksa Mawar Mutual Fund	-218,51%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2018

using the Sharpe method, 7 stock mutual funds showed negative performance and 3 stock mutual funds showed positive performance. This indicates that 3 stock mutual funds based on Sharpe method are worthy of investment. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the result, the more optimal the performance of a mutual your fund.. Here are the 10 best performing stock mutual funds based on sharpe method in 2018. The stock mutual fund that has the highest performance is the Simas Danamas Saham Stock Mutual Fund from the Investment Manager of PT Sinarmas Asset Manajemen with a sharpe value of 122.17%.

4.5 Stock Mutual Fund Performance in 2019 Using Sharpe Method

Table 4.5
The best performing stock mutual fund in 2019 with sharpe method.

No	Name of Stock Mutual Fund	Sharpe 2019
1.	Batavia Stock Fund	-34,94%
2.	Schroder Fund Achievement Fund	-41,48%
3.	Reksadana Eastpring Investments Value Discovery A	-41,49%
4.	Manulife Stock Fund Mutual Funds	-42,59%
5.	Reksadana Syailendra Equity Opportunity Fund	-48,00%
6.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-48,69%
7.	Bahana Trailblazer Fund Mutual Fund	-51,23%
8.	Reksadana Mandiri Investa Equity Movement	-54,63%
9.	Danareksa Mawar Mutual Fund	-54,73%
10.	Reksadana Simas Danamas Saham	-68,86%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2019 using the Sharpe method, 10 stock mutual funds showed negative performance and 0 stock mutual funds showed positive performance. This indicates that 10 stock mutual funds based on Sharpe method are not worthy of investment. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the result obtained, the more optimal the performance of an ex funds. Here are the 10 best performing stock mutual funds based on sharpe method in 2019. The highest performing stock mutual fund is Batavia Stock Fund from Investment Manager OF PT Batavia Prosperindo Manajemen with Sharpe value of -34.94%

4.6 Stock Fund Performance in 2015 Using Treynor Method

Table 4.6
The best performing stock mutual fund in 2015 with the Treynor method.

No	Name of Stock Mutual Fund	Treynor 2015
1.	Manulife Stock Fund Mutual Funds	50,95%
2.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	17,11%
3.	Schroder Fund Achievement Fund	-3,26%
4.	Bahana Trailblazer Fund Mutual Fund	-5,14%
5.	Reksadana Mandiri Investa Equity Movement	-7,85%
6.	Batavia Stock Fund	-8,06%
7.	Danareksa Mawar Mutual Fund	-8,46%
8.	Reksadana Eastpring Investments Value Discovery A	-16,09%
9.	Reksadana Syailendra Equity Opportunity Fund	-16,98%

| 10. | Reksadana Simas Danamas Saham | -32,18% |

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2015 using the Treynor method, 8 stock mutual funds showed negative performance and 2 stock mutual funds showed positive performance. This indicates that 2 stock mutual funds based on the Treynor method are worth investing in. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the result obtained, the more optimal the performance of a mutual fund. Here are the 10 best performing stock mutual funds based on the Treynor method in 2015. The highest performing stock mutual fund is Manulife Stock Fund from Investment Manager PT Manulife Asset Management with Treynor value of 50.95%.

4.7 Stock Mutual Fund Performance in 2016 Using Treynor Method

Table 4.7
The best performing stock mutual fund in 2016 with the Treynor method.

No	Name of Stock Mutual Fund	Treynor 2016
1.	**Bahana Trailblazer Fund Mutual Fund**	**45,88%**
2.	**Schroder Fund Achievement Fund**	**13,44%**
3.	**REKSADANA BNI-AM Inspiring Equity Fund Stock Fund**	**7,97%**
4.	**Reksadana Eastpring Investments Value Discovery A**	**3,03%**
5.	**Batavia Stock Fund**	**0,65%**
6.	**Reksadana Mandiri Investa Equity Movement**	**-4,26%**
7.	**Reksadana Syailendra Equity Opportunity Fund**	**-5,44%**
8.	**Danareksa Mawar Mutual Fund**	**-7,87%**
9.	**Reksadana Simas Danamas Saham**	**-9,50%**
10.	**Manulife Stock Fund Mutual Funds**	**-131,25%**

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2016 using the Treynor method, 5 stock mutual funds showed negative performance and 5 stock mutual funds showed positive performance. This indicates that 5 stock mutual funds based on the Treynor method are worth investing in. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the result obtained, the more optimal the performance of a mutual fund. Here are the 10 best performing stock mutual funds based on the Treynor method in 2016. The highest performing stock mutual fund is the Bahana Trailblazer Fund stock mutual fund from the Investment Manager of PT Bahana TCW Investment Management Indonesia with a Treynor value of 45.88%.

4.8 Stock Fund Performance in 2017 Using Treynor Method

Table 4.8
The best performing stock mutual fund in 2017 with the Treynor method.

No	Name of Stock Mutual Fund	Treynor 2017
1.	Schroder Fund Achievement Fund	79,52%
2.	Reksadana Eastpring Investments Value Discovery A	14,26%
3.	Manulife Stock Fund Mutual Funds	0,23%
4.	Bahana Trailblazer Fund Mutual Fund	-3,21%

5.	Reksadana Mandiri Investa Equity Movement	-4,04%
6.	Reksadana Simas Danamas Saham	-5,01%
7.	Batavia Stock Fund	-5,48%
8.	Reksadana Syailendra Equity Opportunity Fund	-10,30%
9.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-12,09%
10.	Danareksa Mawar Mutual Fund	-150,20%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2017 using the Treynor method, 7 stock mutual funds showed negative performance and 3 stock mutual funds showed positive performance. This indicates that 3 stock mutual funds based on the Treynor method are worth investing in. Stock Mutual Fund with positive results indicates that the return generated exceeds the return on risk-free investment. The higher the yield obtained, the more optimal performanced a mutual fund. Here are the 10 best performing stock mutual funds based on the Treynor method in 2017. The highest performing stock mutual fund is the Schroder Dana Prestasi Stock Fund from Investment Manager of PT Schroder Asset Management with a Treynor value of 79.52%.

4.9 Stock Mutual Fund Performance in 2018 Using Treynor Method

Table 4.9
The best performing stock mutual fund in 2018 with the Treynor method.

No	Name of Stock Mutual Fund	Treynor 2018
1.	Schroder Fund Achievement Fund	42,80%
2.	Manulife Stock Fund Mutual Funds	1,02%
3.	Reksadana Mandiri Investa Equity Movement	-0,67%
4.	Reksadana Syailendra Equity Opportunity Fund	-0,68%
5.	Reksadana Eastpring Investments Value Discovery A	-1,22%
6.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-4,56%
7.	Bahana Trailblazer Fund Mutual Fund	-11,58%
8.	Danareksa Mawar Mutual Fund	-9,05%
9.	Reksadana Simas Danamas Saham	-15,68%
10.	Batavia Stock Fund	-35,62%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2018 using the Treynor method, 8 stock mutual funds showed negative performance and 2 stock mutual funds showed positive performance. This indicates that 2 stock mutual funds based on Treynor method are worthy of investment. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the yield obtained, the more optimal the performance of a mutual fund. Here are the 10 best performing stock mutual funds based on the Treynor method in 2018. The highest performing stock mutual fund is the Schroder Dana Prestasi Stock Fund from Manager Investment PT Schroder Asset Management with a Treynor value of 42.80%.

4.10 Stock Mutual Fund Performance in 2019 Using Treynor Method

Table 4.10
The best performing stock mutual fund in 2019 with the Treynor method.

No	Name of Stock Mutual Fund	Treynor 2019
1.	Batavia Stock Fund	-9,77%
2.	Schroder Fund Achievement Fund	-11,65%
3.	Manulife Stock Fund Mutual Funds	-12,36%
4.	Syailendra Equity Opportunity Fund Mutual Funds	-13,59%
5.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-13,72%
6.	Bahana Trailblazer Fund	-14,52%
7.	Reksadana Eastspring Investments Value Discovery A	-14,59%
8.	Reksadana Mandiri Investa Equity Movement	-15,49%
9.	Danareksa Mawar Mutual Fund	-15,60%
10.	Reksadana Simas Danamas Saham	-21,77%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2019 using the Treynor method, 10 stock mutual funds showed negative performance and 0 stock mutual funds showed positive performance. This indicates that 10 stock mutual funds based on Treynor method are not worthy of investment. Stock mutual funds with positive results indicate that the return generated exceeds the return on risk-free investment. The higher the yield obtained, the more optimal the performance of a mutual fund. Here are the 10 best performing stock mutual funds based on the Treynor method in 2019. The highest performing stock mutual fund is Batavia Stock Fund from INV Manager Investment PT Batavia Prosperindo Asset Management with Treynor value of -9.77%.

4.11   Stock Mutual Fund Performance in 2015 Using Jensen Method

Table 4.11
The best performing stock mutual fund in 2015 with the Jensen method.

No	Name of Stock Mutual Fund	Jensen 2015
1.	Manulife Stock Fund Mutual Funds	-8,12%
2.	Danareksa Mawar Mutual Fund	-9,75%
3.	Bahana Trailblazer Fund Mutual Fund	-10,74%
4.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-12,82%
5.	Reksadana Eastspring Investments Value Discovery A	-14,69%
6.	Batavia Stock Fund	-14,89%
7.	Reksadana Mandiri Investa Equity Movement	-16,14%
8.	Reksadana Syailendra Equity Opportunity Fund	-19,85%
9.	Schroder Fund Achievement Fund	-22,28%
10.	Reksadana Simas Danamas Saham	-93,68%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2015 using the Jensen method, 10 stock mutual funds showed negative performance. This indicates that there are 10 stock mutual funds based on Jensen method that are not worthy to be used as a place of investment. The positive performance of stock mutual funds indicates a higher-than-expected return, while the performance of a negative stock mutual fund indicates a lower actual return than expected return. The greater the result, the better the performance of a stock mutual fund because it provides a higher actual return than expected return. Here are the 10 best performing stock mutual funds based on Risk-Adjusted Return with n Jensen method in 2015. Mutual Funds that have

The highest performance is the Manulife Dana Saham stock mutual fund from the Investment Manager of PT Manulife Asset Management with a Sharpe value of -8.12%.

4.12   Stock Mutual Fund Performance in 2016 Using Jensen Method

Table 4.12
The best performing stock mutual fund in 2016 with the Jensen method.

No	Name of Stock Mutual Fund	Jensen 2016
1.	Reksadana Eastpring Investments Value Discovery A	6,39%
2.	Schroder Fund Achievement Fund	0,33%
3.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-0,33%
4.	Reksadana Syailendra Equity Opportunity Fund	-4,56%
5.	Bahana Trailblazer Fund Mutual Fund	-5,35%
6.	Reksadana Simas Danamas Saham	-7,21%
7.	Manulife Stock Fund Mutual Funds	-7,93%
8.	Danareksa Mawar Mutual Fund	-9,78%
9.	Reksadana Mandiri Investa Equity Movement	-9,78%
10.	Batavia Stock Fund	-24,06%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2016 using the Jensen method, 2 stock mutual funds showed positive performance and 8 stock mutual funds showed negative performance. This indicates that there are 2 stock mutual funds based on Jensen method that are worthy to be used as investment places. The positive performance of stock mutual funds indicates a higher-than-expected return, while the performance of a negative stock mutual fund indicates a lower actual return than expected return. The greater the result, the better the performance of a stock mutual fund because it provides a higher actual return than expected return. Here are the 10 best-performing stock mutual funds based on Risk-Adjusted Return by Jensen method in 2016. The highest performing stock mutual fund is The Eastpring Investments Value Discovery A stock mutual fund from the Investment Manager of PT Eatpring Investment Management with a Sharpe value of 6.39%.

4.13   Performance of Stock Mutual Funds in 2017 Using the Jensen Method

Table 4.13
The best performing stock mutual fund in 2017 with the Jensen method.

No	Name of Stock Mutual Fund	Jensen 2017
1.	Manulife Stock Fund Mutual Funds	108,62%
2.	Reksadana Mandiri Investa Equity Movement	-5,37%
3.	Schroder Fund Achievement Fund	-7,20%
4.	Reksadana Simas Danamas Saham	-7,64%
5.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-8,13%
6.	Reksadana Syailendra Equity Opportunity Fund	-10,21%
7.	Danareksa Mawar Mutual Fund	-10,67%
8.	Reksadana Eastpring Investments Value Discovery A	-13,34%
9.	Batavia Stock Fund	-18,41%
10.	Bahana Trailblazer Fund Mutual Fund	-72,34%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2012 using the Jensen method, 1 stock mutual fund showed a positive performance and 9 stock mutual funds showed negative performance. This indicates that there is 1 stock mutual fund based on Jensen method that is worthy to be used as a place of investment. The positive performance of stock mutual funds indicates a higher-than-expected return, while the performance of a negative stock mutual fund indicates a lower actual return than expected return. The greater the result, the better the performance of a stock mutual fund because it provides a higher actual return than expected return. Here are the 10 best-performing stock mutual funds based on Risk-Adjusted Return by Jensen method in 2017. The highest performing stock mutual fund is Manulife Stock Fund from Investment Manager PT Manulife Asset Management with Sharp e value of 108.62%.

4.14   Stock Mutual Fund Performance in 2018 Using Jensen Method

Table 4.14
The best performing stock mutual fund in 2018 with the Jensen method.

No	Name of Stock Mutual Fund	Jensen 2018
1.	Manulife Stock Fund Mutual Funds	93,16%
2.	Reksadana Mandiri Investa Equity Movement	15,60%
3.	Schroder Fund Achievement Fund	1,47%
4.	Reksadana Eastpring Investments Value Discovery A	0,82%
5.	Reksadana Simas Danamas Saham	-9,01%
6.	Reksadana Syailendra Equity Opportunity Fund	-11,11%
7.	Danareksa Mawar Mutual Fund	-13,23%
8.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-13,23%
9.	Batavia Stock Fund	-23,49%
10.	Bahana Trailblazer Fund Mutual Fund	-72,34%

Source : Processed Data (2020)

Based on the results of the calculation of stock mutual fund performance in 2018 using the Jensen method, 4 stock mutual funds showed positive performance and 6 stock mutual funds showed negative performance. This indicates that there are 4 stock mutual funds based on Jensen method that are worthy to be used as investment places. The positive performance of stock mutual funds indicates a higher-than-expected return, while the performance of a negative stock mutual fund indicates a lower actual return than expected return. The greater the result, the better the performance of a stock mutual fund because it provides a higher actual return than expected return. Here are the 10 best-performing stock mutual funds based on Risk-Adjusted Return with Jensen method in 2018. The highest performing stock mutual fund is the Stock Mutual Fund Manulife Dana Saham mutual fund from Manager Investment PT Manulife Asset Management with Sharpe value of 93.16%.

4.16 Performance of Stock Mutual Funds in 2019 Using the Jensen Method

Table 4.15
The best performing stock mutual fund in 2019 with sharpe method.

No	Name of Stock Mutual Fund	Jensen 2019
1.	Reksadana Eastpring Investments Value Discovery A	-58,77%
2.	Reksadana Syailendra Equity Opportunity Fund	-59,85%
3.	Danareksa Mawar Mutual Fund	-61,27%
4.	REKSADANA BNI-AM Inspiring Equity Fund Stock Fund	-61,62%
5.	Reksadana Mandiri Investa Equity Movement	-62,02%

6.	Schroder Fund Achievement Fund	-62,05%
7.	Bahana Trailblazer Fund Mutual Fund	-62,08%
8.	Batavia Stock Fund	-62,96%
9.	Reksadana Simas Danamas Saham	-63,81%
10.	Manulife Stock Fund Mutual Funds	-68,50%

Source : Processed Data (2020)

Based on the results of the calculation of the performance of stock mutual funds in 2019 using the Jensen method, 0 stock mutual funds showed positive performance and 10 stock mutual funds showed negative performance. The positive performance of stock mutual funds indicates a higher-than-expected return, while the performance of a negative stock mutual fund indicates a lower actual return than expected return. The greater the result, the better the performance of a stock mutual fund because it provides a higher actual return than expected return. Here are the 10 best-performing stock mutual funds based on Risk-Adjusted Return by Jensen method in 2019. The highest performing stock mutual fund is the Eastpring Investments Value Discovery A stock mutual fund from the Investment Manager of PT Eatpring Investment Management with a Sharpe value of -58.77%.

V. CONCLUSIONS AND SUGGESTIONS
5.1   Conclusion
This research aims to find out the performance of Stock Mutual Funds using the Jensen, Treynor and Sharpe methods. The data obtained is then analyzed and processed in a quantitative descriptive way. The results of the analysis also showed the following:
1. Performance of Stock Mutual Funds Using Sharpe Method.
   The performance of stock mutual funds using sharpe method from 10 companies in 2015-2019 resulted in undervalued results.
2. Performance of Stock Mutual Funds Using Treynor Method.
   The performance of stock mutual funds using the treynor from 10 method of companies in 2015-2019 resulted in undervalued results.
3. Performance of Stock Mutual Funds Using the Jensen Method.
   The results of stock mutual fund performance using jensen method from 10 companies in 2015-2019 resulted in under valueresults.

5.2   Advice
Based on the conclusions that have been previously presented, the author conveyed some suggestions as follows:
1. For Investors
   An Investor in conducting an analysis to decide to invest in mutual funds must take into account their risks and returns. The analysis in the form of results is used to determine the choice of mutual funds, the information can be obtained from the investment manager. stock mutual funds whose results have a positive or good performance are mutual funds that have the feasibility to be an option in as an alternative to investing.
2. For Next Researcher
   Further research can choose other types of mutual funds to research, such as money market mutual funds, fixed income mutual funds, mixed mutual funds. In addition, it can also use other Risk-Adjusted Return methods to measure mutual fund performance.

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