

# Analysis of the Performance of Mutual Funds Share

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# Analysis of the Performance of Mutual Funds Share

(As an alternative to investing in Indonesian mutual funds)

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**Abstract**—Investment is the exchange of money with other forms of wealth such as shares or immovable property expected to be held for a certain period of time in order to generate income. It is also sacrifice of property at this moment to acquire future assets. Investing in capital markets is one way for the capitalist community to make a profit quickly. Investment in financial assets is one form of investment other than investment in real assets. The purpose of this research is to know the effect of risk on the return of fund, to know beta value of mutual fund and to know the difference of mutual fund performance based on Sharpe, Treynor and Jensen method. The period of this research is 2006 - 2010. The sample used is 13 equity funds or mutual funds. The results showed that risk has a significant effect on return, beta value of mutual fund is greater than one, and there is a significant difference of mutual fund performance.

**Keywords**—investment; risk performance; mutual fund

## I. INTRODUCTION

Investment is divided into real assets and financial assets. Financial assets are divided into two groups, direct investing and indirect investing [1]. Direct investing is one way of direct investment in stock exchange consisting of money market investment, capital market investment and derivative investment. While indirect investment, investor was investing in mutual funds which is a package of indirect investing. The investment performance of the portfolio managed by the investment manager is influenced by the investment policies and strategies carried out by the investment manager concerned. Therefore, to know the development of investment value of a mutual fund can be seen from the increase of its net asset value which is also the investment value owned by the investor. Investments in financial assets are investments in securities in the money market as well as in the capital market, while investments in real assets can be investments in houses, land and gold.

One of the investments in financial assets is mutual fund or equity fund. The mutual fund industry showed quite encouraging developments in 2006 and 2007, mainly supported by the strengthening of the stock market and debt (bonds) markets. Total assets rose to 92.2 trillion (rupiah) at the end of 2007 with mutual funds amounting to 408. In 2008, mutual fund growth was severely affected by less favorable developments, due to the declining value of portfolio assets due to the economic crisis so that the rise of mutual fund assets was

not too high [2]. To invest Mutual Funds, Investors should recognize the types of risks that are potential to arise when buying Mutual Funds. These risks include risk of net asset value of participation units, Liquidity Risk, Market Risk and Default Risk. The types of mutual funds based on Indonesia government rule concerning guidelines for daily announcement of net Asset value of open end mutual funds are classified into four categories based on their investments. Such as mutual funds, fixed income mutual funds, money market mutual funds and mixed mutual funds [3].

On previous research studied performance of mutual funds evaluated 23 equity funds in Greece based on analysis of risk and return of mutual funds during the period 1997-2000. Risk is measured by the coefficient of variation and systematic risk. The results of this study indicate that there is a positive and significant relationship between risk and return [4]. Another study on comparison of mutual fund Performance: crisis period and period after crisis observed 34 mutual funds in America and measured its performance with Sharpe Measure [5]. The results found only 11 mutual funds (less than half) better than the market represented by the DJIA index. When the performance gauge is replaced by Treynor Measure, more mutual funds are obtained, 19 mutual funds (more than half), are performing better than market performance [5]. Another study conducted using Jensen measure that taking into account systematic risk. The study indicate that the average return of corporate mutual funds is 1.1 percent less than the expected return with the systematic risk levels it contains [6].

Performance evaluation of mutual fund portfolios can provide additional information and inputs in investment decision making for investors. Information on performance with risk measurement will be more beneficial to investors, because each investor has different risk tolerance, so in choosing a mutual fund, the investor can adjust to the level of risk [7]. The methods of performance measurement on risk-adjusted measures of portfolio performance that can be used in evaluating portfolio performance are Treynor, Sharpe and Jensen methods. These three performance measurement methods consider both the risk and return of the portfolio into its calculation analysis [8]. This study aims to determine whether the level of risk positively affects the return of equity funds, and whether all equity mutual funds that operate during the study period have a beta value (systematic risk) is smaller than 1 and whether there are differences in the performance of

Equity funds based on Sharpe method, Treynor and Jensen during the period 2006-2010. It is expected that the results of this study will provide benefits for investors and provide additional information about the performance of equity funds as well as consideration to make good investment decisions, especially for beginner investors. Based on the literature review and the above framework, the hypothesis of this research is stated as follows:

H1: The level of risk positively affects the return of equity funds.

H2: All equity funds have beta (systematic risk) less than 1.

H3: There are differences in the performance of equity funds based on Sharpe, Treynor and Jensen methods.

## II. METHODOLOGY

Research design places the main issues in the studies concerning location and type of study, time spent and the unit study [9]. Quantitative study used in this study by using hypothesis testing (predictive) design of studies that engage to explain the nature of certain relationship or independence of two or more factors in a situation. This test is commonly used to test the effect of two or more independent variables on the dependent variable with the scale of measurement of variables ratios in a linear equation. The data in this study was analyzed using E views version 7 to measure relationship and difference between variables in this research. Objects in this study are stock mutual funds with the variables studied are the return of mutual funds, mutual fund risk and mutual fund performance. Data used in this research is secondary data. This research data was obtained from the capital market and financial institution supervisory board.

This study looked at and analyzed the Net Asset Value, interest rate of Bank Indonesia Certificates, Composite Stock Price Index to measure and analyze the performance of equity funds during the period 2006 to 2010. The research method used is hypothesis testing with descriptive and verification analysis. While the Research Variables are return rate of mutual fund, risk of mutual fund, and performance of mutual fund. Data analysis method used in this research is as follows simple regression method which aims to know the effect of risk level to return of mutual fund to determine beta value (systematic risk) of mutual fund. While for testing hypothesis in this research is done by Partial Test (t-test), coefficient of determination, One-Way-ANOVA. The steps of data analysis will be done as follows:

- Determining the rate of return of mutual funds.
- Determining market returns rate.
- Determine the standard deviation of mutual funds.
- Using the Sharpe, Treynor and Jensen Methods to evaluate the performance of mutual funds.

## III. RESULT AND DISCUSSION

As shown on Table 1, the effect of risk level on return of mutual fund revealed that the coefficient of the total risk variable of 0.129005. It shows that the increase of one unit of total risk will cause the increase of return of 0.129005 units. The result of significance test shows that the probability value is less than 0.05 i.e. Probability (t-statistic) means that the variable of total risk significantly influence to return. This is in accordance with the hypothesis that the level of risk positively affects the return of equity funds.

TABLE I. RESULT CORRELATION RISK AND RETURN

$R_j = \alpha + \beta_j + e_j$	
2006-2010	
$\alpha$ (std error)	0.013878** (0.004241)
$\beta$ (std error)	0.129005** (7.64E-05)
R2	0.999951

Note : Significant on level 1%.

Source : E-views 7.0

The coefficient of determination R2 (R-Squared) regression equation is 0.999951. The coefficient value means that 99.99% the dependent variable can be explained by the independent variable in the model. Whereas 0.01% is explained by other observed variables in the model Based on the simple regression results, there is a positive relationship between risk and return and this is statistically significant. In other words, it is evident that higher risks will be associated also with higher returns. This supports previous research conducted by previous study that found the relationship between risk and return of mutual funds was positive and significant [4]. The findings in this study also support the theory of trade off investment that is high risk high return. However, the theory shows that high return investments have high risks as well, otherwise a relatively safer investment will yield lower returns.

TABLE II. BETA ESTIMATION MUTUAL FUNDS

No	Name Mutual Fund	Indonesia Composite Index		
		$\alpha$	$\beta$	R2
1	Dana Ekuitas Andalan	0.000495	1.053406	0.947661
2	Dana Sentosa	-0.017382	0.610397	0.570606
3	Prakinta Mantap	0.064461	1.507876	0.092055
4	Standiri Investa Atraktif	-0.001289	1.189992	0.935184
5	Manulife Dana Saham	0.002143	1.02754	0.940664
6	Indeko Saham Nusantara	-0.005048	0.834293	0.683459
7	Panin Dana Maksima	0.014414**	0.968558	0.796308
8	Phinisi Dana Saham	6.210351	33.6685	0.002444
9	Reliance Equity Fund	-0.010107	1.126865	0.787913
10	Pancana Cerdas	0.000559	1.034713	0.908695
11	Schroeder Dana Istimewa	0.003672	0.988935	0.908361
12	Schroeder Dana Prestasi Plus	0.003823	0.965451	0.923689
13	Trim Kapital	0.001231	1.194098	0.920066

Note: Significance on level 1% ; Source : E-views 7.0

The finding on beta systematic risk estimation of mutual funds from result of regression analysis to estimate beta 13 equity fund for 2006-2010 period. Indonesia Composite Stock Price Index used as a portfolio market. As shown on Table 2, that almost all mutual funds have statistically significant beta (systematic risk) with alpha 1% excluding mutual fund "Phinisi

<sup>1</sup> Dana Saham" which has a very high beta value of 33.6685 but not significant in statistics. The largest and most statistically significant beta equity fund is the "Makinta Mantap" mutual fund with a beta of 1.507876 and the lowest beta fund is the "Dana Sentosa" fund with a beta of 0.610397. In summary, that not all beta of equity mutual fund is less than one. More than half of the mutual funds studied have a beta (systematic risk) greater than 1 or greater than the market beta. A beta value greater than 1 means that the mutual fund has a large systematic risk. If the market moves up then the value of the mutual fund will rise beyond the market's rise as well if the market falling the mutual fund will move down far beyond the market decline. In other words, its elasticity in market movement is very high. Based on these findings, the initial hypothesis is unacceptable so it can be concluded that not all equity funds have beta (systematic risk) less than 1. This finding differs from research conducted that found that all of the mutual funds under study had a beta of less than one [8]. Meanwhile R2 from all mutual funds varied from 0.002444 up to 0.947661 with JCI as the market portfolio. The finding difference of mutual fund performance on fixed income based on sharpe, treynor and jensen methods.

The Measurement of performance in this study using 3 measurement methods namely Sharpe's Measure (RVAR), Treynor's Measure (RVOL) and Jensen's Measure ( $\alpha$ ). Sharpe measures how the resulting risk premium difference for each unit of risk is taken. Treynor measurement is also based on risk premium, but the divisor is a beta which is a systematic risk. Meanwhile Jensen's measurements assess the performance of an investment manager based on how much the investment manager is able to provide a rate of return above the market rate of return. The study revealed that performance measurement results from 13 mutual funds based on the three methods. As shown in Table 1, the results of measurement RVAR (Sharpe) for almost all mutual funds with negative value. This happened because all of the stock mutual fund samples have a smaller average return compared to risk-free during the period 2006 to 2010. Only 2 mutual funds have a positive Sharpe ratios, "Makinta Mantap" and "Phinisi Dana Saham".

Although only 2 mutual funds have a positive RVAR value, the overall performance of equity funds has been outperform compared to JCI. Only 2 mutual funds underperform its performance is "Dana Sentosa" and "Nikko Saham Nusantara". Meanwhile, Treynor measurements yield have similar RVOL values but not the same as the Sharpe method, which is also negative in almost all mutual fund samples and only 2 mutual funds have a positive Treynor index. Similar to Sharpe's measurement results, mutual funds with a positive Treynor index are "Makinta Mantap" and "Phinisi Dana Saham". Measurements with the Treynor index also resulted in 2 underperform mutual funds namely "Sentosa Fund" and "Nikko Saham Nusantara" while other mutual funds outperform when compared to the performance of Indonesia composite index.

TABLE III. RESULT MEASUREMENT OF THREE-WAY METHOD

No	Name of Mutual Fund	Sharpe	Treynor	Jensen
1	Dana Ekuitas Andalan	-0.729741431	-0.0594207	0.004469
2	Dana Sentosa	-1.413940536	-0.148374268	0.050228**
3	Makinta Mantap	0.029773123	0.007778526	0.079107
4	Mandiri Investa Atraktif	-0.628096979	-0.051484136	0.013138**
5	Manulife Dana Saham	-0.732736989	-0.059886113	0.003638
6	Nikko Saham Nusantara	-0.91420659	-0.087656359	-0.01897*
7	Panin Dana Maksima	-0.588232161	-0.052252071	0.012346
8	Phinisi Dana Saham	0.127644988	0.204658163	8.616466
9	Reliance Equity Fund	-0.710746576	-0.06347039	0.001634
10	Rencana Cerdas Schroeder Dana	-0.73170063	-0.060844315	0.003064
11	Istimewa Schroeder Dana	-0.740264638	-0.061567765	0.002614
12	Prestasi Plus	-0.769468046	-0.063463386	0.000603
13	Trim Kapital Indonesia Composite Index	-0.619321204	-0.051180193	0.013456**
		-0.81125	-0.06431	

As shown in Table 3, almost all samples yield positive  $\alpha$  values except "Sentosa Fund" and "Nikko Saham Nusantara" which have negative alpha values and statistically significant. This means that mutual funds that have negative  $\alpha$  values are mutual funds with inferior performance. While mutual funds with positive alpha means, the mutual fund has superior performance or its performance has outperformed the market even though in this study there are only 2 mutual funds with Jensen positive and statistically significant alpha value. The measurement results using Jensen's alpha is consistent with the measurements made by the Sharpe and Treynor methods. Based on the three methods there are 2 mutual funds with inferior performance of mutual funds "Dana Sentosa" and "Nikko Saham Nusantara". Analysis of variance is used to determine whether the mean for more than two populations is the same or different [10]. As shown Table 4, the results of One Way Anova analysis for the three methods of measuring the performance of mutual/equity funds:

TABLE IV. RESULT OF ONE WAY VARIANCE ANALYSIS

Source of Variation	SS	Df	MS	F	P-value	F crit
Between Groups	11.27319	2	5.636594	2.88618	0.0687	3.25
Within Groups	70.30651	36	1.952958		77	9446
Total	81.57969	38				

Source: E-views 7.0

1 The results of one-way variance analysis shown in Table 4 were found to have consistent results from ratings of mutual funds that looked similar. The F-test value is smaller than the F-critical value for performance appraisal using JCI as the market portfolio. The F-test value for the performance appraisal considering the JCI on Jensen's beta and alpha measurements is 2.886182. The value of F-test is smaller when compared with F-critical with  $\alpha = 0.05$  i.e. 3.259446. Thus, it can be decided that  $H_0$  is not rejected (accepted) so it can be concluded that there is no difference of performance of equity fund based on Sharpe, Treynor and Jensen method. The results of the analysis automatically reject the initial hypothesis of this study that there are differences in the performance of equity funds based on the methods of Sharpe, Treynor and Jensen. In other words, there is no difference between the three performance measurement methods. It shows that the performance measurement using Sharpe method, Treynor and Jensen does not produce any significant difference on the performance of the performance in a period. These three measurements will result in a relatively similar performance assessment. The findings support previous research conducted that analyzed stock portfolio performance using Sharpe, Treynor and Jensen methods and found no significant difference between testing with the Sharpe, Treynor and Jensen Methods [11].

#### IV. CONCLUSION

Based on the results of the analysis of the performance difference of equity funds or mutual funds based on the Sharpe method, Treynor and Jensen can be drawn the conclusion. First of all, the level of risk has a positive and significant effect on fixed income mutual fund returns. This conclusion support previous research [4]. In addition, not all equity funds have beta values smaller than 1. More than half of the equity mutual funds studied in this study have a beta greater than 1. This conclusion does not support research conducted by previous research [12]. Furthermore, this study also revealed that there is no difference in the performance of equity funds based on the methods of Sharpe, Treynor and Jensen. In other words, these three measurement methods will not yield significantly different performance measurement results. This conclusion supports previous research that there was no significant difference between testing with the Sharpe, Treynor and Jensen method [11]. There are several suggestions that can be given for the company to consider revising the portfolio of securities under its management because the risk premium for almost all mutual funds generates negative value during the period 2006-2010. Meanwhile suggestion for investors, should be more selective in choosing fixed income mutual funds as an alternative investment. Considering the result of performance measurement in this research, investor should be able to choose

mutual fund that can get maximum return according to level of risk which become its preference.

Subsequent research is expected to conduct further research such as:

- 1 • Using daily or weekly NAV data returns to obtain more comprehensive results.
- Selecting more samples or involving other types of mutual funds such as fixed income mutual funds, mixed mutual funds and so forth
- Using different and more complex research methods to measure the performance of mutual funds, such as using Data Envelopment Analysis, Information Ratio, M2 measure and others.
- Using a market return comparison other than the JCI will help other researchers gain a different perspective from this analysis.

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