# A Comparative Study of Mutual Fund Portfolio Performance in Indonesia

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**Abstract**. A Mutual fund is one of the instruments in the capital markets that have an important role for investors. Through mutual funds, investors can invest their capital to get the returns with the risks that fit into each investor criteria. Asset under Management (AUM) is one of the indicator for investors in choosing a mutual fund. The more capital is deposited by the investor into a mutual fund, the greater the managed fund. This study aims to analyze how the performance of the portfolio held by equity mutual funds with the largest of Asset under Management when the stock market condition tends to be bearish. This research was conducted through three measurements, a comparison of the performance of the mutual funds returns with a market return, mutual fund diversification using coefficient determination and mutual fund performance measurement using risk-adjusted return, which are Sharpe Ratio, Treynor Ratio and Jensen's Alpha. The results showed that the use of the entire measurement, mutual funds performance with the largest AUM outperform the market, but different results obtained for diversification measurement and Jensen's Alpha.

**Keywords:** mutual fund, performance evaluation, asset under management

**Abstrak.** *Reksa dana adalah salah satu instrumen di pasar modal yang memiliki peran penting bagi investor. Melalui reksa dana, investor dapat menginvestasikan modalnya untuk mendapatkan pengembalian dengan risiko yang sesuai dengan setiap kriteria investor. Asset under Management (AUM) adalah salah satu indikator bagi investor dalam memilih reksa dana. Semakin banyak modal yang disetor oleh investor ke dalam reksa dana, semakin besar dana yang dikelola. Penelitian ini bertujuan untuk menganalisis bagaimana kinerja portofolio yang dimiliki oleh reksa dana ekuitas dengan Aset terbesar di bawah manajemen ketika kondisi pasar saham cenderung bearish. Penelitian ini dilakukan melalui tiga pengukuran, yaitu perbandingan kinerja pengembalian reksadana dengan return pasar, diversifikasi reksa dana menggunakan koefisien determinasi dan pengukuran kinerja reksa dana menggunakan risk-adjusted return, yaitu Sharpe Ratio, Treynor Ratio dan Jensen's Alpha . Hasil penelitian menunjukkan bahwa penggunaan seluruh pengukuran, kinerja reksa dana dengan AUM terbesar mengungguli pasar, tetapi hasil yang berbeda diperoleh untuk pengukuran diversifikasi dan Jensen's Alpha.*

*Kata kunci: reksa dana, evaluasi kinerja, aset di bawah manajemen*

## INTRODUCTION

Investing is important for investors. By investing, investors can manage the capital they own with one purpose; that is to gain profit or return. However, not all investors have the specific knowledge and expertise to manage their investment portfolio properly to gain the expected return, considering the inherent risk in the return (Bodie, Kane & Marcus, 2014). Mutual fund is one investment instrument believed to ease investors in starting their investment in Indonesian stock market.

The investment portfolio can reduce the risk in investment. A smart investor surely have a good prescription in establishing a portfolio, to make him/her able to create a diversified multi-assets portfolio (Israelsen, 2010). The investment portfolio is a combination of several instruments and investment placement to optimize the profile of return and investment risk (Pratomo & Nugraha, 2009). Therefore, it is important for investors to be able to analyze the investment portfolio they have using the portfolio performance measurement.

Investment portfolio of mutual fund can be analyzed in several ways, first, comparing the mutual fund performance with the market performance to investigate if their performance surpasses or falls behind the performance of the market (Bodie, Kane & Marcus, 2014). The second is measuring the diversification of mutual fund within the investment portfolio of mutual fund to analyze how much market movement affects its performance. The third is measuring the risk-adjusted return as the portfolio performance measurement which is considered effective and accurate keeping in mind that the market is always changing. In this measurement, the return can always be adjusted to the risks involved to minimize the undesired loss.

Investing in mutual fund, to establish a profitable portfolio can be started by choosing the appropriate mutual fund based on the needs and criteria of the investors. In Indonesia, equity fund is the most favourite product for investment (Anggreni, 2016). According to monthly research performed by Financial Services Authority (Otoritas Jasa Keuangan) - hereafter is referred as OJK - related to the composition of net asset value (NAV) mutual fund at the end of 2014. Equity funds have the largest contribution compared to the other mutual fund products, which is as much as 94 Trillion Rupiah or 43.39% of the overall composition of mutual fund in Indonesia. In

equity funds portfolio, in which shares is the main investment, surely the movement of the stock market - in this case - Composite Index (IHSG) becomes the main reflection in equity funds investment. The movement of the stock market will affect the movement in equity funds investment.

Other than choosing mutual fund products, establishing an investment portfolio of mutual fund can be done by choosing the appropriate mutual fund according to each investor. In Indonesia, there is no definite range for the amount of managed fund classification. However, there are several classifications for the amount of managed fund which are called as T-Club, or Trillion Club which consists of mutual funds with managed fund above 1 Trillion (Rudiyanto, 2015). The reason is there are not much mutual fund with managed fund above 1 Trillion in Indonesia, whereas equity funds, more or less there are only 20 mutual funds that have managed fund above 1 Trillion. Based on these reason, researchers are interested to investigate how the portfolio performance based on the daily return of 20 equity funds with the largest managed fund, which has been considered as the best performing mutual funds. Year 2014 to 2015 is selected, because during that year the market condition in Indonesia is in bearish condition (Indonesia Investment, 2016). This condition is not the expected condition for any investors. Based on that argument, the following is the problem formulation proposed, 1) do 20 equity funds with the largest Asset Under Management (AUM) have higher income performance compared to portfolio market performance?; 2) what are the benefits of diversification performed by 20 equity funds with the largest Asset Under Management (AUM)?

What are the analysis results of Excess Return per unit risk owned by 20 equity funds with the largest Asset Under Management (AUM)?

To answer these research question, we first introduced the concept and theories underpinning this researh.

Investment is present day commitment to money or other resources hoping to gain profit or advantage in the future (Bodie, Kane, & Marcus, 2014). Investment can also be defined as a commitment to a certain amount of money at present day during a certain period to generate return in the future as an investor compensation for the time allocated to the funds commitment, inflation level, and uncertainty of funds return in the future (Reilly & Brown, 2003).

Portfolio Management is a process which is conducted by investors to make a decision regarding the investment of their fund in some assets (Hartono, 2014). As a process, the portfolio management is a dynamic and systematic process because the investor must able to mix, match and balance the investment in order to maximize the return..

Diversification is a basic principal for investors in managing term assets (Melin, 2010). Portfolio theory developed by M. Markowitz explains the investors estimation in risk and return expectation, measured statistically to establish their investment portfolio. In this case, diversification is related to combining assets into an efficient portfolio product, in which the risk can be reduced by increasing the type of assets in the portfolio, then the level of expected return might increase if within the investment are found differences in the prices movement of the combined assets.

In other words, investors frequently diversify their investments by combining several securities and establishing a portfolio.

In measuring portfolio management there are three well-known techniques, namely Sharp Ratio, Treynor Ratio and Alpha Jensen Ratio. Sharp Ratio measurement is performed by dividing the excess return by variability return of the portfolio. It is also called as a reward to variability. The larger the ratio, the better the portfolio performance (Hartono, 2014). The measurement was introduced by Wiliam Forsyth Sharpe in 1966. Measurement of mutual fund performance using Sharpe's method is based on the excess return which is the difference between mutual fund performance and the risk-free return performance. This Sharpe measurement is formulated as the ratio excess return to the deviation standard of mutual fund. Therefore it is also called as a reward to (total) variability ratio. The formula is to divide the mean of mutual fund excess return in a certain period by the deviation standard of mutual fund in a certain period. This deviation standard is the total risk which is the sum of systematic and unsystematic risks.

Treynor Ratio is a measurement is done by dividing the excess return by the volatility portfolio. It is also called as reward to volatility. The result of this research is the larger the Treynor ratio is, the better the portfolio performance. Different from Sharpe, Treynor divides excess return by beta portfolio. Treynor argues that the established portfolio must be the optimal portfolio. Therefore the unsystematic risk could be ignored, and it leaves the systematic risk to be measured using the beta (Hartono, 2014). Jack Treynor in 1965 developed an index to measure the portfolio performance called as a reward to volatility ratio based on the systematic risks. Similar to Sharpe ratio, Treynor ratio is also based on excess return. The difference is laid on the unit risks as the divider of the excess return. In Treynor's measurement, the divider is not the total risk, instead, the systematic risk only. The systematic risk is symbolized as beta, which is the volatile risk about the market risk. The Treynor ratio is formulated as ratio excess return to the Beta mutual fund. The formula is to divide the mean of mutual fund excess return in a certain period by the Beta mutual fund in a certain period.

Alpha Jensen ratio was developed for Capital Asset Pricing Model (CAPM) in which it measures the portfolio slopes. The higher the slope is, the better the portfolio performs. In addition, the intercept is also measured. The higher the intercept is, the better the portfolio performs (Hartono, 2014). In 1968, Jensen provided two dimensions and focused on evaluating the capability of Investment Manager in generating a higher return for the investors. The measurement of mutual funds performance using Jensen ratio is based on the Theory of Capital Asset Pricing Model (CAPM). The ratio measures the difference between the mean of mutual fund return and the expected return of mutual fund which is gained from the CAPM calculation.

## RESEARCH METHOD

The population in this research are Equity Funds Products, both Conventional, and Sharia, which are

actively traded (both active prior and during the research period) and registered in OJK during the research period. The research period was 268 working days, starting from 01 September 2014 to 30 September 2015. Because of the bearish condition in Indonesia during that period (indonesia-investments, 2016).

A technique to draw samples is non-probability, that is purposive sampling, in which it is a technique to draw samples based on the researcher's consideration or sampling based on certain criteria, usually used in small-scale samples and populations and is used in qualitative research (Greener, 2008). Sampling in this research is using the following criterias, 1) there are 20 Equity Funds included in the Research Population, which are actively traded and recorded by OJK during the Research Period and has the largest Managed Fund or Asset Under Management (AUM); 2) the meaning of the largest Managed Fund or Asset Under Management as mentioned in the first point is equity funds with managed fund above 1 (one) Trillion Rupiah; 3) equity Funds Products as mentioned in the first point consist of conventional equity funds and sharia equity funds; 4) actively traded as mentioned in the first point means equity funds which are actively traded both prior during the research period, 1 September 2014, and activated during the research period.

From the criteria aforementioned, there are 28 equity funds with managed fund or AUM above 1 Trillion Rupiah. Therefore, 20 equity funds are 71% of all equity funds with managed fund above 1 Trillion and have already represented most equity funds with the largest Asset Under Management in Indonesia during the research period between 1 September 2014 and 30 September 2015.

This research used quantitative secondary that covers the following, 1) data on Net Asset Value is also called as the daily Managed Fund or Asset Under Management (AUM) for each equity funds product recorded in OJK during the research period. Data are used to determine the research samples and it is one data used to calculate the daily return of mutual funds. Those data are acquired from OJK through Mutual Fund Application (ARIA) of Bapepam for the period of 1 September 2014 to 30 September 2015; 2) data on daily Investment Unit for each equity funds product recorded by OJK during the research period are used to calculate the daily return of mutual funds. The data are acquired from OJK through Mutual Fund Application (ARIA) of Bapepam for the period of 1 September 2014 to 30 September 2015; 3) data on daily Composite Index (IHSG), that is the closing price of the IHSG at the end of the day during the research period, is used to calculate daily return and it is the performance benchmark on the measurement of equity funds performance. The data was acquired from Indonesian Stock Exchange (BEI) during 1 September 2014 to 30 September 2015; 4) data on a daily interest rate of Bank Indonesia Certificates (SBI) during the research period, is used to determine the return on risk-free investment during the research period. The data was gathered from Bank Indonesia (BI) during 1 September 2014 to 30 September 2015.

In the data processing, the early step is determining the variables needed to measure the mutual fund performance. The variables are 1) return of the mutual fund products, which are used as the return portfolio in the measurement using Sharpe, Treynor, and Jensen ratio; 2) return of Composite Index (IHSG) as the market return and becomes the benchmark for equity funds; 3) risk-Free Rate of Return instrument; 4) deviation standard of mutual fund products and deviation standard of index which are used as the deviation standard of portfolio to measure the Total Risk in Sharpe ratio; 5) beta mutual fund, to measure Systematic Risk in Treynor ratio; 6) Coefficient of Variation (CV) means risk per unit of return or is calculated by dividing deviation standard by mean; This CV measures the rate of variation relative with mean in a percentage; 7) Coefficient of Determination to explain the mutual fund movement that can be explained from the appropriate benchmark index.

After determining the value of the variables, then the measurement according to each ratio is performed, as mentioned below:

*Comparing the Mutual Fund Return with the Market Return*

Calculating and comparing mutual fund return and daily market return during the research method to answer the first problem formulation is aimed to see the return performance of 20 Equity Funds with the largest AUM when compared to the market return, that is IHSG return.

Mutual fund return can be calculated as follows (Pratomo & Nugraha, 2009):

$$R_{p(i)} = \frac{NAB/Unit_i - NAB/Unit_{(i-1)}}{NAB/Unit_{(i-1)}}$$

Wherein:
$R_{p(i)}$ = daily return of mutual funds p on day i
$NAB/Unit_i$ = Net Asset Value (NAB)/Unit day i
$NAB/Unit_{(i-1)}$ = Net Asset Value (NAB)/Unit day (i-1), or the previous day

After the return of each day during the research period is acquired, then the average of daily return is calculated to be used in the calculation of mutual fund performance. The calculation of mean of mutual fund daily return using the arithmetic method in (Manurung, 2007) is by dividing the total amount of mutual fund return from each day during the research period by the number of days of the research period.

*Measuring the Mutual Fund Diversification*

Measuring the mutual fund risk is conducted to answer the second problem formulation, which is to investigate the benefit of which diversification that could be done by 20 Equity Funds with the largest Asset Under Management. A diversified portfolio is usually measured by correlating the portfolio returns, in this research is of mutual funds, with the market index return, in this case, is of Composite Index (IHSG). To determine the degree of diversification, this research used determinant coefficient (R2). The determinant coefficient is a percentage of variations in portfolio return which is affected by market return. If mutual funds in total have diversification, then R2 will approach the ratio of 1.0, and it indicates that the mutual fund return is fully affected by the market return. The lower determination coefficient is the less mutual fund return that is affected by the market return. The result indicates that other factors, which could be diversified, are possible to affect mutual fund return (Survana

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& Ishwara, 2014).
*Measuring the Mutual Fund Performance*

In order to answer the third problem formulation, this research used mutual fund performance through risk-return relation model developed by Sharpe (1966), Treynor (1965), and Jensen (1968). Those measurements are used to analysis result of Excess Return per unit owned by 20 equity funds with the largest Asset Under Management.

*Sharpe Model*

The following is the equation to calculate mutual funds performance using Sharpe model (Sharpe, 1966):

$$Sharpe\ Ratio = \frac{R_j - R_f}{\sigma_{pj}}$$

Wherein:

$R_j$ = average of mutual funds return during period j
$R_f$ = average of risk free asset return during certain period
$\sigma$ = total risk, deviation standard of mutual funds during period j

*Treynor Model*

Treynor Model can be written as the folowing formula, (Qamruzzaman, 2014):

$$Treynor's\ Index = \frac{R_j - R_f}{\beta_{pj}}$$

Wherein:

$R_j$ = average of mutual funds return j during certain period
$R_f$ = average of risk free asset return during certain period
$\beta$ = Beta, or systematic risk of mutual funds during certain period

*Alpha Jensen Model*

The formula of Jensen ratio can be seen below, (Survana & Ishwara, 2014):

$$\alpha_p = R_p - (R_f + (R_m - R_f)\, \beta_p)$$

Wherein:

$\alpha$ = Alpha Jensen
$R_p$ = Average of Mutual Funds Return p during certain period
$R_f$ = Average of Risk Free Asset Return during certain period
$R_m$ = Average of Market Return during certain period
$\beta_p$ = Beta, or systematic risk of Mutual Funds p during certain period

**RESULT AND DISCUSSION**

Using the mean of market daily return as the benchmark for comparing the income performance, Forty percent of mutual funds in the sample have daily return mean below the mean of market daily return (the performance does not surpass the market). And the 60% of the mutual funds in the sample have higher daily return mean compared to mean of market daily return or the performance surpasses the market. The result shows that overall - 20 (twenty) equity funds with the largest managed fund - have income performance that surpasses the market income performance. The result is supported by the comparison result of income performance index of 20 (twenty) equity funds in Table 1 (page 49) that surpasses the market income performance as much as 0.0018%.

Table 2 (page 50) shows that Schroder Dana Prestasi Dinamis is on the first rank. It has the highest determinant coefficient (0.018617483) compared to 19 (nineteen) other mutual fund products in the sample. Meanwhile Manulife Greater Indonesia Fund is on the 20th rank with the lowest determinant coefficient (0.003966704). This indicates that the return of Schroder Dana Prestasi Dinamis is the most affected by the market return compared to 19 (nineteen) other mutual fund products in the sample. Meanwhile, lowest determination coefficient of seeing the Manulife Greater Indonesia Fund compared to the other 19 (nineteen) mutual funds products indicates that the return of mutual funds is less affected by the market return, in which there might be other factors affect the mutual fund return.

The comparison result between income performance of mutual fund and market income performance of equity funds with the largest Asset Under Management (AUM) has real implications for the investors in the investment decision. The comparison results in income performance of equity funds that surpasses the market income performance. This illustrates that equity funds with large managed fund still become the right choice for investors who want to invest in mutual fund. From 20 mutual funds in the sample, there are 12 mutual funds, or 60% of the sample, have performance that surpasses the market, this means if investors have one mutual fund with the largest managed fund, then they tend to have a mutual fund whose income performance surpasses the market income performance. Nevertheless, it does not mean that investors who have one mutual fund with the largest managed fund will always have the mutual fund whose income performance surpasses the market income performance. This is shown from the data where 8 mutual funds or 40% of the samples have income performance below the market income performance.

In terms of equity fund diversification, a determination coefficient owned by 20 (twenty) mutual funds in the sample has relationship with the mutual fund return. The following Table 3 illustrates the relationship between determination coefficient or R-Square owned by the mutual fund and the daily return of mutual fund. In Table 3 (page 51) there is correlation coefficient which explains the relationship between mutual fund return and market return (from IHSG). The relationship between mutual fund and market indicates the movement of mutual fund return from market return. Positive correlation indicates similar changes to changes in the market. This means that positive correlation shows similar changes to those in the market, whereas negative correlation shows the opposite movement from the market.

The Sharpe ratio of equity funds in the sample which are negative does not mean they have worse performance compared to the market performance. The performance of those mutual funds mostly surpasses the market performance, even though when the market is bearish. This surely has real implications on the investors. As explained in the previous paragraph, when the market is bearish, the mutual fund performance with the largest managed fund

still surpasses the market performance. This describes that equity funds with managed fund or AUM are still a good choice for investors shall they want to invest their capital in mutual fund.

**Table 1. Comparison Between Income Performance of Mutual Fund in the Samples and Market Income Performance**

| Name of Equity Funds | Mean of Daily Return | Above Market Return | Below Market Return | Rank |
|---|---|---|---|---|
| Schroder Dana Prestasi Plus | -0.0408% | 0.0387% | | 2 |
| Schroder Dana Prestasi Dinamis | -0.0643% | 0.0153% | | 7 |
| Panin Dana Maksima | -0.0993% | | -0.0198% | 16 |
| Reksa Dana Schroder Dana Prestasi | -0.0403% | 0.0392% | | 1 |
| Reksa Dana Bnp Paribas Insfrastruktur Plus | -0.1129% | | -0.0333% | 18 |
| Bnp Paribas Ekuitas | -0.0666% | 0.0129% | | 8 |
| Reksa Dana Schroder 90 Plus Equity Fund | -0.0508% | 0.0287% | | 4 |
| Reksadana Mandiri Saham Atraktif | -0.0692% | 0.0103% | | 11 |
| Manulife Greater Indonesia Fund | -0.0668% | 0.0127% | | 9 |
| Ashmore Dana Progresif Nusantara | -0.0742% | 0.0053% | | 12 |
| Reksa Dana Schroder Dana Istimewa | -0.0511% | 0.0284% | | 5 |
| Manulife Dana Saham | -0.0845% | | -0.0050% | 13 |
| Bnp Paribas Inspira | -0.0629% | 0.0167% | | 6 |
| Reksa Dana Syariah Bnp Paribas Pesona Syariah | -0.0909% | | -0.0114% | 14 |
| Manulife Saham Andalan | -0.0979% | | -0.0184% | 15 |
| Bnp Paribas Pesona | -0.0686% | 0.0110% | | 10 |
| Reksa Dana Danareksa Mawar Konsumer 10 | -0.0457% | 0.0339% | | 3 |
| Panin Dana Prima | -0.1059% | | -0.0264% | 17 |
| Reksa Dana Mandiri Dynamic Equity | -0.1328% | | -0.0533% | 20 |
| Reksa Dana Bnp Paribas Solaris | -0.1280% | | -0.0485% | 19 |
| Percentage | | 60% | 40% | |
| Mutual Fund Index | -0.0777% | 0.0018% | | |
| Market | -0.0795% | | | |

Source: Processed by the Researcher using Microsoft Excel 2016

**Table 2. Determination Coefficient of Mutual Funds**

| Name of Mutual Funds | R Square | Difference from R-Square Market | Rank |
|---|---|---|---|
| Schroder Dana Prestasi Plus | 0.009399959 | 0.9906 | 16 |
| Schroder Dana Prestasi Dinamis | 0.018617483 | 0.9814 | 1 |
| Panin Dana Maksima | 0.011400868 | 0.9886 | 12 |
| Reksa Dana Schroder Dana Prestasi | 0.005499167 | 0.9945 | 19 |
| Reksa Dana BNP Paribas Insfrastruktur Plus | 0.013786962 | 0.9862 | 6 |
| BNP Paribas Ekuitas | 0.010496501 | 0.9895 | 15 |
| Reksa Dana Schroder 90 Plus Equity Fund | 0.008507982 | 0.9915 | 18 |
| Reksadana Mandiri Saham Atraktif | 0.013575159 | 0.9864 | 7 |
| Manulife Greater Indonesia Fund | 0.003966704 | 0.9960 | 20 |
| Ashmore Dana Progresif Nusantara | 0.013448604 | 0.9866 | 8 |
| Reksa Dana Schroder Dana Istimewa | 0.009060226 | 0.9909 | 17 |
| Manulife Dana Saham | 0.015736952 | 0.9843 | 3 |
| BNP Paribas Inspira | 0.012186342 | 0.9878 | 11 |
| Reksa Dana Syariah BNP Paribas Pesona Syariah | 0.013061073 | 0.9869 | 10 |
| Manulife Saham Andalan | 0.010675859 | 0.9893 | 13 |
| BNP Paribas Pesona | 0.013228632 | 0.9868 | 9 |
| Reksa Dana Danareksa Mawar Konsumer 10 | 0.010564152 | 0.9894 | 14 |
| Panin Dana Prima | 0.015442385 | 0.9846 | 5 |
| Reksa Dana Mandiri Dynamic Equity | 0.015550500 | 0.9844 | 4 |
| Reksa Dana BNP Paribas Solaris | 0.017903359 | 0.9821 | 2 |
| Mutual Fund Index | 0.012105444 | 0.9879 | |
| Market | 1.000000000 | | |

Source: Processed by the Researcher using SPSS-17

**Table 3. Relationship Between Determination Coefficient (R2) and Market Return**

| Name of Equity Funds | Mean of Daily Return | R2 | Correlation Coefficient | Rank of Daily Return | Rank R2 | Rank of Correlation Coefficient | Correlation |
|---|---|---|---|---|---|---|---|
| Schroder Dana Prestasi Plus | -0.0408% | 0.009399959 | 0.0970 | 2 | 16 | 16 | Negative |
| Schroder Dana Prestasi Dinamis | -0.0643% | 0.018617483 | 0.1360 | 7 | 1 | 1 | Negative |
| Panin Dana Maksima | -0.0993% | 0.011400868 | 0.1070 | 16 | 12 | 12 | Positive |
| Reksa Dana Schroder Dana Prestasi | -0.0403% | 0.005499167 | 0.0740 | 1 | 19 | 19 | Negative |
| Reksa Dana Bnp Paribas Insfrastruktur Plus | -0.1129% | 0.013786962 | 0.1170 | 18 | 6 | 6 | Positive |
| Bnp Paribas Ekuitas | -0.0666% | 0.010496501 | 0.1020 | 8 | 15 | 15 | Negative |
| Reksa Dana Schroder 90 Plus Equity Fund | -0.0508% | 0.008507982 | 0.0920 | 4 | 18 | 18 | Negative |
| Reksadana Mandiri Saham Atraktif | -0.0692% | 0.013575159 | 0.1170 | 11 | 7 | 6 | Negative |
| Manulife Greater Indonesia Fund | -0.0668% | 0.003966704 | 0.0630 | 9 | 20 | 20 | Negative |
| Ashmore Dana Progresif Nusantara | -0.0742% | 0.013448604 | 0.1160 | 12 | 8 | 8 | Negative |
| Reksa Dana Schroder Dana Istimewa | -0.0511% | 0.009060226 | 0.0950 | 5 | 17 | 17 | Negative |
| Manulife Dana Saham | -0.0845% | 0.015736952 | 0.1250 | 13 | 3 | 3 | Positive |
| Bnp Paribas Inspira | -0.0629% | 0.012186342 | 0.1100 | 6 | 11 | 11 | Negative |
| Reksa Dana Syariah Bnp Paribas Pesona Syariah | -0.0909% | 0.013061073 | 0.1140 | 14 | 10 | 10 | Positive |
| Manulife Saham Andalan | -0.0979% | 0.010675859 | 0.1030 | 15 | 13 | 13 | Positive |
| Bnp Paribas Pesona | -0.0686% | 0.013228632 | 0.1150 | 10 | 9 | 9 | Negative |
| Reksa Dana Danareksa Mawar Konsumer 10 | -0.0457% | 0.010564152 | 0.1030 | 3 | 14 | 13 | Negative |
| Panin Dana Prima | -0.1059% | 0.015442385 | 0.1240 | 17 | 5 | 5 | Positive |
| Reksa Dana Mandiri Dynamic Equity | -0.1328% | 0.015550500 | 0.1250 | 20 | 4 | 4 | Positive |
| Reksa Dana Bnp Paribas Solaris | -0.1280% | 0.017903359 | 0.1340 | 19 | 2 | 2 | Positive |

Source: Processed by the Researcher using SPSS-17

**Table 4. Equity Funds Measurement Using Sharpe Ratio**

| Name of Equity Funds | Mean of Daily Return | Deviation Standard of Daily Return | Sharpe Ratio | Above Market Performance | Below Market Performance | Rank |
|---|---|---|---|---|---|---|
| Schroder Dana Prestasi Plus | -0.000408097 | 0.010539982 | -0.095468031 | -0.063731780 | | 6 |
| Schroder Dana Prestasi Dinamis | -0.000642626 | 0.011959431 | -0.103747405 | -0.072011154 | | 8 |
| Panin Dana Maksima | -0.000992788 | 0.010434598 | -0.152466069 | | -0.120729818 | 19 |
| Reksa Dana Schroder Dana Prestasi | -0.000403437 | 0.010550653 | -0.094929835 | -0.063193584 | | 5 |
| Reksa Dana BNP Paribas Insfrastruktur Plus | -0.001128694 | 0.010591758 | -0.163035119 | | -0.131298868 | 20 |
| BNP Paribas Ekuitas | -0.000665708 | 0.010609238 | -0.119126586 | -0.087390334 | | 14 |
| Reksa Dana Schroder 90 Plus Equity Fund | -0.000508367 | 0.011004864 | -0.100546544 | -0.068810292 | | 7 |
| Reksadana Mandiri Saham Atraktif | -0.000691844 | 0.011715434 | -0.110109292 | -0.078373041 | | 12 |
| Manulife Greater Indonesia Fund | -0.000667855 | 0.016979085 | -0.074561668 | -0.042825416 | | 3 |
| Ashmore Dana Progresif Nusantara | -0.000742221 | 0.009888037 | -0.135553259 | -0.103817008 | | 18 |
| Reksa Dana Schroder Dana Istimewa | -0.000511382 | 0.010664236 | -0.104040896 | -0.072304645 | | 9 |
| Manulife Dana Saham | -0.000845243 | 0.010677323 | -0.135181613 | -0.103445362 | | 17 |
| BNP Paribas Inspira | -0.000628675 | 0.011777069 | -0.104169362 | -0.072433111 | | 10 |
| Reksa Dana Syariah BNP Paribas Pesona Syariah | -0.000908948 | 0.011289385 | -0.133495541 | -0.101759290 | | 16 |
| Manulife Saham Andalan | -0.000979444 | 0.010953434 | -0.089418936 | -0.057682685 | | 4 |
| BNP Paribas Pesona | -0.000685642 | 0.010343271 | -0.066288726 | -0.034552474 | | 2 |
| Reksa Dana Danareksa Mawar Konsumer 10 | -0.000456684 | 0.010710593 | -0.042638568 | -0.010902317 | | 1 |
| Panin Dana Prima | -0.001059403 | 0.009764583 | -0.108494431 | -0.076758180 | | 11 |
| Reksa Dana Mandiri Dynamic Equity | -0.001328037 | 0.011444338 | -0.116043178 | -0.084306927 | | 13 |
| Reksa Dana BNP Paribas Solaris | -0.001280305 | 0.010102713 | -0.126728793 | -0.094992541 | | 15 |
| Market | -0.00079520 | 0.00951342 | -0.03173625 | 90% | 10% | |
| Mutual Fund Index | -0.00077677 | 0.01110000 | -0.02553932 | 0.00619693 | | |
| Risk Free Assets | 0.00059813 | | | | | |

Source: Processed by the Researcher using SPSS-17

**Table 5. Equity Funds Measurement Using Treynor Ratio**

| Name of Equity Funds | Mean of Daily Return | Beta of Mutual Funds | Treynor Ratio | Above Market Performance | Below Market Performance | Treynor Rank |
|---|---|---|---|---|---|---|
| Schroder Dana Prestasi Plus | -0.000408097 | -0.084189783 | -0.001011840 | | -0.000709920 | 19 |
| Schroder Dana Prestasi Dinamis | -0.000642626 | -0.092202416 | 0.001619720 | 0.001921640 | | 14 |
| Panin Dana Maksima | -0.000992788 | -0.081745035 | 0.006110514 | 0.006412434 | | 5 |
| Reksa Dana Schroder Dana Prestasi | -0.000403437 | -0.08238524 | -0.001090561 | | -0.000788641 | 20 |
| Reksa Dana BNP Paribas Insfrastruktur Plus | -0.001128694 | -0.081019294 | 0.007842708 | 0.008144628 | | 3 |
| BNP Paribas Ekuitas | -0.000665708 | -0.080563645 | 0.002140226 | 0.002442147 | | 13 |
| Reksa Dana Schroder 90 Plus Equity Fund | -0.000508367 | -0.082559739 | 0.000182693 | 0.000484613 | | 17 |
| Reksadana Mandiri Saham Atraktif | -0.000691844 | -0.091655615 | 0.002166373 | 0.002468293 | | 12 |
| Manulife Greater Indonesia Fund | -0.000667855 | -0.045900951 | 0.003803210 | 0.004105130 | | 9 |
| Ashmore Dana Progresif Nusantara | -0.000742221 | -0.072630941 | 0.003427434 | 0.003729354 | | 10 |
| Reksa Dana Schroder Dana Istimewa | -0.000511382 | -0.079579587 | 0.000227430 | 0.000529350 | | 16 |
| Manulife Dana Saham | -0.000845243 | -0.077955688 | 0.004514871 | 0.004816791 | | 8 |
| BNP Paribas Inspira | -0.000628675 | -0.090076161 | 0.001503082 | 0.001805002 | | 15 |
| Reksa Dana Syariah BNP Paribas Pesona Syariah | -0.000908948 | -0.080758553 | 0.005147004 | 0.005448924 | | 7 |
| Manulife Saham Andalan | -0.000979444 | -0.083140119 | 0.005847487 | 0.006149407 | | 6 |
| BNP Paribas Pesona | -0.000685642 | -0.080953659 | 0.002376158 | 0.002678078 | | 11 |
| Reksa Dana Danareksa Mawar Konsumer 10 | -0.000456684 | -0.086321062 | -0.000423990 | | -0.000122069 | 18 |
| Panin Dana Prima | -0.001059403 | -0.081903358 | 0.006912040 | 0.007213960 | | 4 |
| Reksa Dana Mandiri Dynamic Equity | -0.001328037 | -0.086465287 | 0.009654207 | 0.009956127 | | 2 |
| Reksa Dana BNP Paribas Solaris | -0.001280305 | -0.076574500 | 0.010277848 | 0.010579768 | | 1 |
| Mutual Fund Index | -0.000776770 | -0.080929032 | 0.003502902 | 0.003804823 | | |
| Market | -0.000795204 | 1,000000000 | -0.000301920 | | | |
| Risk Free Assets | 0.000598134 | | | | | |

Source: Processed by the Researcher using SPSS-17

**Table 6. Equity Funds Measurement Using Treynor Ratio**

| Name of Equity Funds | Mean of Daily Return | Beta | Expected Return | Difference between Daily Return and Expected Return | Jensen's Alpha | Rank |
|---|---|---|---|---|---|---|
| Schroder Dana Prestasi Plus | -0.000408097 | -0.084189783 | -0.0468% | 0.005977% | 0.000060 | 2 |
| Schroder Dana Prestasi Dinamis | -0.000642626 | -0.092202416 | -0.0465% | -0.017718% | -0.000177 | 7 |
| Panin Dana Maksima | -0.000992788 | -0.081745035 | -0.0469% | -0.052418% | -0.000524 | 16 |
| Reksa Dana Schroder Dana Prestasi | -0.000403437 | -0.08238524 | -0.0468% | 0.006497% | 0.000065 | 1 |
| Reksa Dana BNP Paribas Insfrastruktur Plus | -0.001128694 | -0.081019294 | -0.0469% | -0.065987% | -0.000660 | 18 |
| BNP Paribas Ekuitas | -0.000665708 | -0.080563645 | -0.0469% | -0.019675% | -0.000197 | 9 |
| Reksa Dana Schroder 90 Plus Equity Fund | -0.000508367 | -0.082559739 | -0.0468% | -0.004001% | -0.000040 | 4 |
| Reksadana Mandiri Saham Atraktif | -0.000691844 | -0.091655615 | -0.0466% | -0.022623% | -0.000226 | 11 |
| Manulife Greater Indonesia Fund | -0.000667855 | -0.045900951 | -0.0479% | -0.018843% | -0.000188 | 8 |
| Ashmore Dana Progresif Nusantara | -0.000742221 | -0.072630941 | -0.0471% | -0.027087% | -0.000271 | 12 |
| Reksa Dana Schroder Dana Istimewa | -0.000511382 | -0.079579587 | -0.0469% | -0.004213% | -0.000042 | 5 |
| Manulife Dana Saham | -0.000845243 | -0.077955688 | -0.0470% | -0.037550% | -0.000375 | 13 |
| BNP Paribas Inspira | -0.000628675 | -0.090076161 | -0.0466% | -0.016259% | -0.000163 | 6 |
| Reksa Dana Syariah BNP Paribas Pesona Syariah | -0.000908948 | -0.080758553 | -0.0469% | -0.044005% | -0.000440 | 14 |
| Manulife Saham Andalan | -0.000979444 | -0.083140119 | -0.0468% | -0.051126% | -0.000511 | 15 |
| BNP Paribas Pesona | -0.000685642 | -0.080953659 | -0.0469% | -0.021680% | -0.000217 | 10 |
| Reksa Dana Danareksa Mawar Konsumer 10 | -0.000456684 | -0.086321062 | -0.0467% | 0.001054% | 0.000012 | 3 |
| Panin Dana Prima | -0.001059403 | -0.081903358 | -0.0469% | -0.059085% | -0.000591 | 17 |
| Reksa Dana Mandiri Dynamic Equity | -0.001328037 | -0.086465287 | -0.0467% | -0.086086% | -0.000861 | 20 |
| Reksa Dana BNP Paribas Solaris | -0.001280305 | -0.0765745 | -0.0470% | -0.081014% | -0.000810 | 19 |
| Mutual Fund Index | -0.000776770 | -0.08092903 | -0.0469% | -0.030792% | -0.000308 | |
| Market (IHSG) | -0.079520% | 1,000000000 | | | | |
| Risk Free Assets | 0.059813% | | | | | |

Source: Processed by the Researcher Using Microsoft Excel 2016

Overall, 90% of the equity funds in the research sample perform higher than the market performance when measured by Sharpe ratio, the other 10% perform lower than the market performance. The statement is supported by the measurement result using Sharpe ratio (as seen in table 4, page 52) of 20 (twenty) equity funds index which have ratio that surpasses the market based on Sharpe ratio (0.00619693). This means, based on Sharpe ratio, the mean of equity funds product performance in the sample, overall, can provide excess return per unit risk taken, and can surpass the market performance. On the other hand, several mutual funds measured by Sharpe ratio have negative ratio or their performance is below the market performance, and are not able to provide excess return per unit risk taken.

Mutual fund in the research sample able to provide excess return per unit risk taken illustrates that in fact, mutual fund is an investment instrument that has risk or non-risk free. Whereas, risk free asset such as Bank Indonesia Certificates (SBI) in this research is a risk free investment instrument. This explains if Sharpe ratio is applied, equity funds with the largest managed fund within the research period performed well, although not the best one. On the contrary, equity funds with the lowest managed fund during the research period performed poorly, although not the poorest one.

Mutual funds in the research sample able to provide excess return per systematic unit risk taken illustrates that in fact, mutual fund is an investment instrument that has systematic risk or not risk free. Otherwise, risk free assets such as Bank Indonesia Certificates (SBI) in this research is risk free investment instrument. In addition, in Table 5 (page 53) is also seen there are 17 (seventeen) mutual funds that have higher Treynor ratio compared to market Treynor ratio which is negative 0.000301920, in which it indicates that those seventeen equity funds have surpassing performance or surpasses the market performance. The negative Treynor ratio for the market illustrates that during the research period, the market performed poorly or in a declining condition or bearish.

As seen in Table 6 (page 54), from 20 (twenty) analyzed mutual funds, 3 (three) mutual funds have positive Alpha Jensen ratio, whereas the others, 17 (seventeen) mutual funds have negative Alpha Jensen ratio. This indicates that most mutual funds in the sample have inferior performance or do not surpass the market performance. The findings are supported by the Alpha Jensen ratio of 20 (twenty) equity funds whose ratio are negative as much as -0.000308. This research results are different from the one conducted by Indah (2010). In the research conducted by Indah, 10 (ten) from 14 (fourteen) equity funds or about 72% of the sample have superior performance or positive Jensen ratio. This is in line with the research conducted by Qamruzzaman (2014), from 32 (thirty two) mutual funds analyzed, there are 20 (twenty) mutual funds or 62.5% of the sample have positive Alpha Jensen ratio. Whereas in this research, only 15% mutual funds have superior performance.

The result of using Alpha Jensen ratio in this research is also different from two other measurement of risk-adjusted return using Sharpe and Treynor ratio. In Sharpe ratio, overall 20 (twenty) equity funds with the largest managed fund have the performance that surpasses the market performance. Likewise, using Treynor ratio it also shows similar result that, overall, the mutual fund performance surpasses the market performance. Otherwise, the surpassing performance compared to the market is not acquired when measured using Alpha Jensen model, from 20 (twenty) mutual funds, only 3 (three) among them have the performance that surpasses the market performance. From the result acquired, using the opposite of Sharpe and Treynor ratio applied, which is Alpha Jensen ratio, means that overall mutual fund performance can not surpass the market performance.

Alpha Jensen ratio in this research has real implications for the investors in the investment decision. Prior to measuring the mutual fund performance, investors need to consider the appropriate measurement to apply according to the market condition. As mentioned above, during this research, the market condition in Indonesia is declining or moving relatively downward, or bearish. This condition affects the result of Alpha Jensen ratio which is different from the previous research when the market condition is bullish. Therefore, investors may use other measurement model to compare the results acquired such as Sharpe or Treynor ratio, to confirm the mutual fund performance to choose.

## CONCLUSION

Based on the analysis as discussed, it can be concluded as 1) the comparison result between income peformance of 20 equity funds with the largest managed fund or AUM during September 2014-September 2015 and market income performance, finds that overall, equity funds performance surpasses the market income performance, in which 60% mutual fund performs above the market performance, and 40% mutual fund performs below the market performance; 2) measurement result of diversification benefit of 20 equity funds with the largest managed fund or AUM during September 2014-September 2015 finds that overall equity funds are not totally diversified, with the value of index determination coefficient of 20 mutual funds is as much as 0.0121, far below 1.0 and shows that mutual fund return in the sample is not fully affected by the market return; 3) result of Excess Return per unit risk as the comparative performance of 20 equity funds with the largest managed fund or AUM during September 2014-September 2015 using Sharpe, Treynor and Alpha Jensen ratio as the measurement of risk adjusted return compared to performance of market portfolio, it is found that a) using the Sharpe ratio, it is found that 20 equity funds with the largest managed fund or AUM are able to provide excess return per unit risk taken, and are able to surpass the market performance; b) using the Treynor ratio, it is found that 20 equity funds with the largest managed fund or AUM are able to provide excess return per unit systematic risk taken and are able to surpass the market performance; c) using the Alpha Jensen ratio, it is found that 20 equity funds with the largest managed fund or AUM have inferior performance and are not able to surpass the market performance, in which the result is affected by the bearish condition in the market (IHSG) during the research period.

Based on the conclusions, we recommend the following for Investors, financial service, Authorities and future research are 1) in choosing mutual fund product, specifically equity funds, using the managed fund as the indicator is a beneficial strategy for investors. However, it is recommended that investors consider other factors to minimize the loss, such as by considering the condition of Indonesian stock market. This is necessary as the condition of stock market, either bearish or bullish could affect the performance of each equity funds; 2) comparison of income performance, diversification of mutual fund and three risk-adjusted return measurement applied in this research could be used by investors to decide which one is the appropriate investment by considering several factors affecting the mutual fund. If investor wants to decide quickly, investor can compare between the performance measurement of mutual fund income and market income and Sharpe ratio. The data required for those two measurements are easy to access, and both calculation have already considered return and risk affecting the mutual fund performance; 3) based on the Theory of Efficient Frontier which states stock market is an information business, it is recommended that Financial Services Authority (OJK) becomes the institution to provide integrated regulatory and supervisory system in financial services sector in Indonesia to display information related to data and statistics of mutual fund in OJK's website in order to ease practicioners and scholars in acquiring information fast, precisely and accurately, both for investments and academic purposes; 4) for future research, it is recommended to enclose other mutual fund products such as fixed income mutual fund, money market mutual fund, and balanced fund to provide more varied options for the investors who are willing to invest in mutual funds.; 5) it is recommended to add other risk-adjusted return measurement model in measuring the performance of mutual fund portfolio, other than Sharpe, Treynor and Alpha Jensen ratio. Surely it is conducted to acquire result of performance measurement using a more accurate risk-adjusted return that it could help investor in investment decision for the mentioned mutual fund product based on the managed fund; 6) in this research, the mean of mutual fund return and market return are on daily basis. This leads to ineffective calculation of mutual fund return, considering mutual fund is a long term investment in which the profit will be seen in a long time, not daily profit. Therefore, for the future research it is recommended to use monthly return or three-month return to acquire more effective result.

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