

## Indonesian Islamic and Conventional Equity Fund Performance Measurement Using Sharpe, Modified Snail Trail and Morningstar Rating Groundwork

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**Abstract:** This research aims to assess the performance of equity fund in Indonesia, Islamic and Conventional, whether they can outperform the market. The samples used in this research are 36 equity funds which have been established prior to January 2008. The performance measurement methods are rating based on return, Sharpe ratio, Modified Snail Trail and Morningstar. This research finds that the performance of Islamic equity fund does not differ significantly compared to market and conventional equity fund based on return and Sharpe ratio. Based on rating-based-performance, conventional equity fund can provides higher rating performance than Islamic equity fund. The finding in high rating portfolio is quite obvious, high return and Sharpe ratio rating portfolios produce the highest annual expected return of 13.96%. Meanwhile, Modified Snail Trail method shows 10.65% expected return and the lastly, Morningstar rating indicates 8.32% annual return. These portfolios, except for Morningstar rating, outperform to benchmark portfolios namely, equally weighted portfolio and minimizing risk portfolio in all of three categories.

**Key words:** Conventional Equity Fund • Islamic Equity Fund • Modified Snail Trail • Morningstar Rating • Sharpe ratio

### INTRODUCTION

According to data provided by BAPEPAM, mutual fund Indonesia mostly concentrated on certain conventional types, such as; equity, protected, fixed income and discretionary mutual funds which together accounts for 88,90% of overall net asset value in 2012. Islamic mutual fund, on the other hands, is less demanded and takes account only for 2.87% of the whole net asset value in 2012.

This fact is ironic, remembering Indonesia is country with one of the largest Muslim society with large potentials on development of Islamic industry. According to Global Islamic Financial Report in 2011; Indonesia was on forth position with largest potential of Islamic industry, after Iran, Malaysia and Saudi Arabia [1].

With that potential on Islamic mutual funds development, the less concerned on Islamic mutual fund can be caused by ignorance of Islamic mutual fund performance and the common paradigm that Islamic

mutual fund will give lowers return than conventional mutual fund. Therefore, a research to compare Islamic and conventional equity mutual fund to market indexes is required.

### Literature Review

**Mutual Fund:** According to Capital Market Laws number 8 in 1995, chapter 1, verse 27, mutual fund is a vessel for containing funds from public investors to invest in portfolio securities by investment manager. Mutual fund is classified as open-end fund which issue the shares at its net asset value with charges on both purchases and redemptions [2].

**Islamic Mutual Fund:** According to *Fatwa* which issued by National Sharia Board (2012;3) Islamic mutual fund is mutual fund which operated according to provisions and Islamises principles, whether in form of investor as the fund owner (*sahib al-mal / Rabb al Mal*) with investment manager as the representative of *sahib al-mal* or investment manager with investment user [3].

The operational mechanisms of sharia mutual fund consist of *wakalah* and *mudharabah*. *Wakalah* is authority delegation from *sahib al-mal* to investment manager for representable matter [4].

**Difference Between Islamic and Conventional Mutual Fund:**

The fundamental difference between Islamic and conventional mutual fund is when selecting investment for the portfolio, conventional mutual fund can freely choose between debt-based investment and profit-based investment and invest in all available industries [5]. However, on Islamic mutual fund, the asset allocation must filter the asset which meets the criteria of sharia guidelines. Sharia guidelines forbid speculations that contain fraud (*gharar*) such as; *Najsy*, that is fake offering, *Bai al-Ma'dum*, which is sells not owned items or known as short selling, insider trading which is promulgating misleading information or use inside information to gain a prohibited transaction and investing in high leveraged companies, with debt to capital ratio higher than 82% [6].

**Mutual Fund Performance Measurement**

**Return:** This research will assess the return performance of Islamic compared to conventional equity fund and the market. The higher the return of equity fund compared to the market return, the better performance of that equity fund. The equity fund return is computed from Net Asset Value from each sub period for each equity fund. See Figure 1

$$r_d = \frac{NAV_1 - NAV_0}{NAV_0} \tag{1}$$

- $r_d$  = Average return for certain period
- $NAV_1$  = Net Asset Value this month
- $NAV_0$  = Net Asset Value the month before

**Sharpe:** This index was developed by William F. Sharpe is used to measure how much return is got in exchange of certain amount of risk. Sharpe ratio is computed exerting this formula [7]:

$$S_{RD} = \frac{rd - rf}{\sigma} \tag{2}$$

- $S_r$  = Sharpe ratio
- $r_d$  = Mutual fund return for certain sub-period
- $\sigma$  = Standard deviation of mutual fund for certain subperiod
- $r_f$  = Risk free rate for certain sub-period.

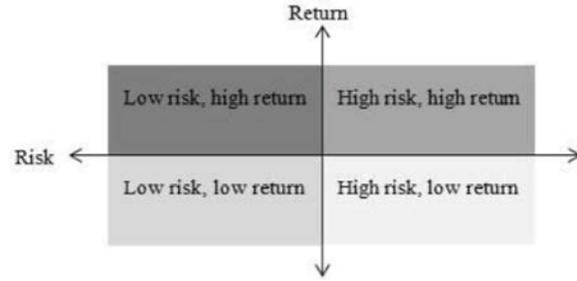


Fig. 1: Quadrant of Snail Trail is explained within this picture; formula 1. Quadrant of Snail Trail

Higher geometric means of Sharpe ratio means higher excess return relatives to 1% of risk, therefore it shows better performance.

**Snail Trail Method:** This method will illustrate graphically the relative return and relative risk of each mutual fund for each month then associate it with the return and the risk the next period. Relative return is calculated by subtracting the return for certain period with the median for the same period of all samples.

To measure risk, there are several alternatives. The most commonly accepted measure of risk is standard deviation of return [8]. Relative risk is measured by subtracting the risk for certain period with median of risk derived from all samples on the same period.

Relative return is plotted on vertical axis whereas relative risk is plotted on the horizontal axis. The first point on risk-return graph is plotted as usual. The points of the period then rolled forward by one month risk-return pair. Those points plotted on the same graph; therefore the pattern is traced dynamically in risk-adjusting space.

The desirable above median return appear above horizontal relative return line and less desirable below-median return appear below the horizontal line. The desirable below median volatility appear on the left of diagram and less demanded above median volatility appear on the right of diagram. The most desirable region is on the first quadrant, which is located on the top left, while the least desirable isolated on the third quadrant [9].

**Morningstar Rating:** The original Morningstar Rating was introduced in 1985 and was used to help investor to choose one or few fund among large choices of asset class investment available. Morningstar assigns rating based on comparison of all fund within specific Morningstar category rather than broad asset class as the emphasized is not stand alone investment, but funds as

portfolio component and fund with particular rating can be substituted with one another in construction of diversified portfolio [10].

To give rating based on Morningstar computation, these five steps should be followed;

Figure Morningstar Risk-Adjusted Return or MRAR(2) and Morningstar Return or MRAR(0) for 3 and 5 years are the basic things to do. There are four steps to calculate MRAR(2) for 3 years;

- Calculate total monthly return for the fund using Morningstar formulation, fund total return for given month is supposed to be derived from

$$TR_t = \left[ \frac{P_e}{P_b} \prod_{i=1}^{36} \left( 1 + \frac{D_i}{P_i} \right) \right] - 1 \quad (3)$$

$Tr_t$  = Total return for the fund for month t  
 $P_e$  = End of month NAV per share  
 $P_b$  = Beginning of month NAV per share  
 $D_i$  = Per share distribution at time i  
 $P_i$  = Reinvestment NAV per share at time i

However, the distribution is directly reflected on NAV, instead of distributed to equity fund holder. Therefore the total return is computed using formula 1.

The cumulative total return is acquired from;

$$TR_C = \prod_{t=1}^{36} (1 + TR_t) - 1 \quad (4)$$

$TR_C$  = Cumulative total return for the fund  
 $Tr_t$  = Total Return for the fund month t

- Adjust the monthly total return for sales loads to compute load adjusted return. The load-adjusted return is calculated as;

$$LR_C = (1 + TR_C) \times (1 - S) \times (1 - R) - 1 \quad (5)$$

Where,

$Lr_c$  = Cumulative load-adjusted return for 3 years  
 $Tr_c$  = Cumulative total return for 3 years  
 $F$  = Maximum front load or subscription fee, expressed as decimal  
 $R$  = Redemption fee, expressed as decimal

Monthly adjustment factor for loads, a, is determined by;

$$a = \left( \frac{1 + LR_C}{1 + LR_C} \right)^{\frac{1}{36}} \quad (6)$$

Then, the monthly total return is adjusted with this factor,

$$LR_C = a \times (1 + TR_c) - 1 \quad (7)$$

Where,

$Lr_t$  = Load-adjusted total return for month t  
 $Tr_t$  = Total return for month t

Figure Morningstar Return or MRAR(0) by collect monthly total return for the appropriate risk free rate. For each historical month, the fund's geometric excess return over risk free rate is computed from;

$$ER_t = \left[ \frac{1 + LR_t}{1 + LR_f} \right] - 1 \quad (8)$$

Where,

$Er_t$  = Geometric excess return for the fund for the month t  
 $Lrt$  = Load adjusted return for the fund for month t  
 $Rft$  = Total return for the risk free rate for month t, figured by using formula 3, 10

The annualized geometric mean of these excess return is known as Morningstar Return or MRAR(0).

$$MRAR(0) = \left[ \prod_{t=1}^{36} (1 + ER_t) \right]^{\frac{12}{36}} - 1 \quad (9)$$

- Adjusted MRAR(0) to get MRAR(2)

$$MRAR(2) = \left[ \frac{1}{36} \sum_{t=1}^{36} (1 + ER_t) \right]^{\frac{-12}{36}} - 1 \quad (10)$$

The section inside the brackets determines the investor average utility from this fund's monthly excess return over 36 months. Then, that utility level is converted to a return by taking it to the power of -1/2 and annualizes the result by taking the power of 12.

To calculate the 5 years MRAR(2) and MRAR(0), repeat the steps a to d and substitute 36 with 60.

- Then, all funds in the category are sorted by rank MRAR in descending order.
- The rating given is based on the rank of MRAR is based on these rules stated in Table I.

Table 1: Rules For Morningstar Rating

Score	Percent	Word Label
5	Top 10%	High
4	Next 22,5%	Above Average
3	Next 35%	Average
2	Next 22,5%	Below Average
1	Bottom 10%	Low

Source: Morningstar Inc, 2009

In order to compute Morningstar Risk from subtracting Morningstar Risk-Adjusted Return from Morningstar Return and rank the Morningstar Risk with the same rule of Morningstar Rating. Morningstar Risk is useful to determine the more preferred equity fund when the funds have same rating and similar MRAR(2) but different level of risk.

$$\text{Morningstar Risk} = \text{MRAR}(0) - \text{MRAR}(2) \quad (11)$$

- To calculate the overall Morningstar Rating by using weighting average of rating for 3 and 5 years Morningstar Risk Adjusted Return.

$$\text{MRAR}_{\text{overall}} = \text{MRAR}(2)_3 \times 40\% + \text{MRAR}(2)_5 \times 60\% \quad (12)$$

## MATERIALS AND METHODS

**Data Collection Method:** For computation methods to evaluate the mutual fund performance, return, Sharpe, Snail Trail and Morningstar rating will be used. Data used for computation are:

- Monthly Net Asset Value for each mutual fund from January 2008 until December 2012
- IHSG (*Indeks Harga Saham Gabungan* or Jakarta Composite Index) and JII (Jakarta Islamic Index) as the market representation

Interest rate of SBI will be used as risk free rate from January 2008 until December 2012. The SBI for 1 month period is primary used for this research. However, as SBI for 1 month period was discontinued in June 2011, this research will use SBI for 3 month period from June 2011 to December 2012.

The data of fee rate for each equity fund is derived from each prospectus and fund fact sheet. If any mutual fund does not publish the mutual fund online, the mode of the rate will be used. If mutual funds have multilevel of fee, the maximum fee will be used.

## Data Processing

**Computing Return and Sharpe Ratio:** The monthly return and the monthly Sharpe ratio are computed for each equity fund, for each year using formula 1. Both IHSG and JII are computed the return and the Sharpe ratio as well. The formula used for IHSG and JII are quite similar with formula 1.

In order to make general statement of equity fund performance for the whole research period, geometric mean are used to compute the average mean of certain equity fund.

## Use Statistical Test to Test Significance Difference of Return and Risk Adjusted Return:

To assess whether there is significance difference between return of Islamic and conventional equity fund, Islamic equity fund with market (JII) and conventional equity fund with market (IHSG), one way - ANOVA test will be conducted with hypothesis of Levine [11].

$$H_0 : \mu_1 = \mu_2 = \mu_3 = \mu_4 = \dots = \mu_n$$

$$H_a : \text{Not all means are equal}$$

Instead of using data analysis by Microsoft Excel, this research conducts the ANOVA test manually in order to use geometric mean as the average method instead of arithmetic mean. This method is chosen to present consistency between methods used. The decision to reject the null hypothesis ( $H_0$ ) is when the F-test computed is greater than upper tail critical value denotes with c. For this research the level of significance used is 5%.

## Mapping the Snail Trail and computing the Modified Snail Trail Score:

Before mapping the Snail Trail, firstly, relative risk and return need to be computed. Afterward, each pairs of relative risk and return is plotted on the quadrant, with relative risk on x-axis and relative return on y-axis.

Based on the desired quadrant, the modified snail trail score is computed. Firstly, it computes distance from the certain point to (0,0) by using this formula;

$$\text{Relativedistance} = \sqrt{(\text{relative}^2 \text{return}) + (\text{relative}^2 \text{risk})} \quad (13)$$

Afterward the relative distance is multiplied by quadrant multiplier, which are

Table 2: Quadrant Multiplier For Modified Snail Trail

Quadrant	Word Label	Multiplier
Low risk, high return	Favourable performance	+1
High risk, high return	Average performance	0
Low risk, low return	Average performance	0
High risk, low return	Unfavourable performance	-2

The number for quadrant multiplier is based on the theory of behavioral finance, with equity premium puzzles anomalies that stated tendency for investor to overly preoccupied by negative effect of losses in comparison to equivalent amount of gains. The relative distance which has been multiplied by quadrant multiplier is called modified Snail Trail score, which computed with this formula

$$\text{Modified Snail Trail Score} = \text{Relative distance} \times \text{Quadrant multiplier} \quad (14)$$

Subsequently, each period of Modified Snail Trail score is averaged using geometric mean,

$$\text{Modified Snail Trail Score}_{\text{overall}} = \left( \prod_{t=1}^N \text{Modified Snail Trail Score} + 1 \right)^{-1} \quad (15)$$

**Rating for return, Sharpe ratio and Modified Snail Trail:**

To assess the rating for the return, Sharpe ratio and Modified Snail Trail, the data for each method is sorted descending. The rating rule is based on the Morningstar Rating rules specified in Table I.

**Computes Morningstar Rating:** The Morningstar rating can be computed computes MRAR(2) using formula 2.5 until 2.13, sorted in descending order and assign the rating based on the ratings rules that specified in Table 1.

**High Rating Equity Fund Portfolios:** To assess which rating gives the best prediction of return and risk performance, portfolio based on the high rating equity fund for each method will be prepared. High rating equity fund is defined with equity fund which is granted with 4 or 5 star rating. As each method gives different result of high rating equity fund, the high rating equity fund portfolios will consist of different equity funds for each method.

The portfolio performance will be assessed with back testing method. Based on the equal weighted perspective, the monthly return, monthly standard deviation and monthly Sharpe ratio of the portfolio for 5 years period

will be computed. These portfolios will use buy and hold method for the period of 5 years. Thereafter, the monthly performance measurement will be annualized.

For the benchmark of high rating equity fund portfolios, this research will establish the optimal portfolio of conventional equity fund portfolio, Islamic equity fund portfolio and hybrid equity fund portfolio. Optimal portfolio is defined as gives highest return for same risk, or produces lowest return for certain level of risk. The asset contained on the portfolio will be based on purpose of the portfolio. Four alternatives are given, which are equal weighted, maximizing the return, minimizing the risk, or maximizing the Sharpe ratio of the whole portfolio. To search for the weight of each equity fund, solver in Microsoft Excel will be used. Based on this weight, the same performance measurement component with high rating portfolio will be computed, namely return, standard deviation and Sharpe ratio. Afterward, this monthly performance measurement component will be annualized as well.

**Empirical Result**

**Return:** Even though the monthly return of the samples are seems to be different, based on the ANOVA test with the 5% level of significance, the statistical test says different way. After all, with the result of the statistical test, it can be stated that the performance of Islamic equity fund is statically equal to the performance of conventional equity fund. Moreover, both of them do not outperform or underperform the market.

**Shape Ratio:** Build on the result of Sharpe ratio which shown on the Table 2 in the appendixes shows that there is slightly different on risk adjusted return of the equity fund. Therefore, the rating granted is different to each other. However, after conducting ANOVA test with 5% level of significance, this research stated that there are no significance differences on risk adjusted return performance of Islamic equity fund compared to conventional equity fund, Islamic equity fund compared to the market and conventional equity fund compared to the market.

**Modified Snail Trail:** Based on the historical relative return and risk that mapped in Snail Trail quadrant it is found that 11 equity funds have tendency to have high risk with volatile return. Those equity funds are *Bahana Dana Prima*, *Batavia Dana Saham*, *Batavia Dana Saham Optimal*, *BNI Reksadana Berkembang*, *BNP Paribas*

*Ekuitas, GMT Dana Ekuitas, Grow-2-Prosper, Pratama Saham, Reksa Dana BNP Paribas Infrastruktur Plus, Reksa Dana Dana Ekuitas Prima, Reksa Dana Mandiri Investa Atraktif, Reksadana Dana Pratama Ekuitas, Syailendra Equity Opportunity, Trim Kapital, Reksa Dana Syariah BNP Paribas Pesona Amanah, CIMB Principal Islamic Equity Growth Syariah.* Those equity funds' performances are transmigrating from high risk low return to high risk high return and vice versa. The rest is belongs to relatively low risk category with volatile return, which transmigrate from low to high return and vice versa. After assessing the tendency, by using the Modified Snail Trail method, the performance of relative risk and return of equity fund can be quantified, ordered and assigned with ratings.

**Rating's Result:** The equity funds which gain 5 stars are *Panin Dana Maksima, Grow-2-prosper and Syailendra Equity Opportunity* fund. On the other hand, equity funds with gain 4 stars are *Batavia Dana Saham, BNP Paribas Pesona, GMT Dana Ekuitas, Manulife Saham Andalan, Reksa Dana NISP Indeks Saham Progresif, Reksa Dana Schroder Dana Istimawa, Rencana Cerdas, Schoder Dana Prestasi Plus and Reksa Dana Syariah BNP Paribas Pesona Amanah.* From 12 of the best equity fund, only one of them belongs to Islamic equity fund and the rest are belongs to conventional equity fund. Relates to rating-based-on-Sharpe and rating-based-on-return, conventional equity fund can provides higher rating performance than Islamic equity fund.

For the rating based on the risk adjusted return, the result is exactly similar with rating based on the return. Therefore, it can be stated that the equity fund has directly proportional risk adjusted return.

Equity funds which granted with 5 stars are *Panin Dana Maksima, Reksa Dana Schroder Dana Istimewa, Reksa Dana Simas Danamas Saham.* Conversely, equity funds which are granted with 4 stars are *BNI Paribas Pesona, Danareksa Mawar, FS Indoequity Dividend Yield Fund, Manulife Dana Saham, Reksa Dana NISP Indeks Saham Progresif, Reksa Dana Dana Ekuitas Andalan, Rencana Cerdas and Schroder Dana Prestasi Plus and Mandiri Investa Atraktif-Syariah.* Relates to rating-based-on-Modified Snail Trail, conventional equity fund can provides higher rating performance than Islamic equity fund.

**Morningstar Rating:** Using Morningstar Rating method, that averaged the ratings of 3 and 5 years, produces 10 equity funds which granted with 5 and 4 stars. They are

Table 3: Correlation of Rating's Methods

	RRn	RS	RMS	RM
Rrn	1	1	0.403906228	0.200189218
RS	1	1	0.403906228	0.200189218
RMS	0.403906228	0.403906228	1	0.056514499
RM	0.200189218	0.200189218	0.056514499	1

Source: Data Processing

RRn= Rating based on return

RS<sub>RD</sub>= Rating based on Sharpe

RMS= Rating based on Modified Snail Trail

RM= Rating based on Morningstar

Table 4: Portfolio Based On High Rating Equity Fund

Rating based on Return	Expected return	13.96%
	Standard Deviation	26.86%
	Sharpe ratio	0.520
Rating based on Sharpe	Expected return	13.96%
	Standard Deviation	26.86%
	Sharpe ratio	0.520
Rating based on Modified Snail Trail	Expected return	10.65%
	Standard Deviation	26.84%
	Sharpe ratio	0.397
Rating based on Morningstar	Expected return	8.32%
	Standard Deviation	27.79%
	Sharpe ratio	0.299

Source : Data processing

*Bahana Dana Prima, BNP Paribas Ekuitas, Danareksa Mawar, First State Indoequity Sectoral Fund, Manulife Saham Andalan, Reksa Dana Dana Ekuitas Prima, Schroder Dana Prestasi Plus, Syailendra Equity Opportunity Fund, Mandiri Investa Atraktif Syariah, RD Trim Syariah Saham.*

The only equity fund that granted 5 stars is *BNP Paribas Ekuitas.* This is caused by the using of weighted of 3 and 5 years rating performance with rounded in the overall rating, therefore, the amount of high rating equity funds are less than high rating equity funds with other methods.

Under Morningstar Rating method, there are 2 Islamic equity funds which are secured 4 stars rating; they are *Mandiri Investa Atraktif Syariah and RD Trim Syariah Saham.* Relates to rating-based-on-Morningstar, conventional equity fund can provide higher rating performance than Islamic equity fund.

**Rating Comparison:** After exercising 4 different rating's methods that produce different result for high rating equity funds, correlation between those rating methods will be assessed. The correlation can measured linkage between one ratings to another.

Table 5: Benchmark Portfolio Using Optimal Islamic, Conventional and Hybrid Portfolios

	Equallyweighted portfolio	Maximizingreturn portfolio	Minimizing risk portfolio	Maximize sharpe ratio portfolio
Hybrid	36 constituent equity fund on the same weighted.	100% Panin Dana Maksima	14% Reksa Dana Simas Danamas Saham, 86% Schroder Dana Prestasi Plus	100% Panin Dana Maksima
	E(R) 8.35%	E(R) 30.89%	E(R) 10.45%	E(R) 30.89%
	$\Sigma$ 29.12%	$\Sigma$ 28.88%	$\Sigma$ 25.75%	$\Sigma$ 28.88%
	$S_{RD}$ 0.287	$S_{RD}$ 1.070	$S_{RD}$ 0.406	$S_{RD}$ 1.070
Conventional	30 constituent equity fund on the same weighted.	100% Panin Dana Maksima	14% Reksa Dana Simas Danamas Saham, 86% Schroder Dana Prestasi Plus	100% Panin Dana Maksima
	E(R) 9.24%	E(R) 30.89%	E(R) 10.45%	E(R) 30.89%
	$\Sigma$ 29.11%	$\Sigma$ 28.88%	$\Sigma$ 25.75%	$\Sigma$ 28.88%
	$S_{RD}$ 0.317	$S_{RD}$ 1.070	$S_{RD}$ 0.406	$S_{RD}$ 1.070
Islamic	6 constituent equity funds on the same weighted	100% Reksa Dana Syariah BNP Paribas Pesona Amanah	100% Mandiri Investa Atraktif Syariah	100% Reksa Dana Syariah BNP Paribas Pesona Amanah
	E(R) 3.82%	E(R) 10.80%	E(R) 5.17%	E(R) 10.80%
	$\Sigma$ 29.75%	$\Sigma$ 29.30%	$\Sigma$ 27.05%	$\Sigma$ 29.30%
	$S_{RD}$ 0.129	$S_{RD}$ 0.368	$S_{RD}$ 0.191	$S_{RD}$ 0.368

Source: Data Processing

$E(R)$ =Expected Return

$\Sigma$ =Standard Deviation

$S_{RD}$  = Sharpe ratio

Based on the correlation result, this research states that rating-based-on-return and rating based-on-Sharpe are perfectly correlated; therefore, these methods produce exactly the same rating result. Less correlated is shown on the rating-based-on-Modified Snail Trail with rating-based-on-Sharpe with index of 0.404. These two rating methods are showing 11 equal rating out of 36 samples. On the other hand, rating-based-on-Morningstar produces 12 equal ratings with rating-based-on-Sharpe, with correlation index of 0.2. The least correlated are found in rating-based-on-Modified-Snail-Trail and rating-based-on-Morningstar with 11 equal rating and 0.056 correlations.

**High Rating Equity Fund Portfolios:** Below is the result of high rating equity fund portfolios using back testing method of 5 years.

Based on the result of portfolio, can be concluded that portfolio that consist of high rating equity fund based on return and Sharpe gives the highest expected return and the highest Sharpe ratio. This result is obvious as rating based on return is sorting the performance based on the return performance given by the equity fund and the high rating equity funds based on return are equity funds with highest return over the 5 years performances, so does high rating equity fund based on Sharpe. On the other hand high rating equity fund portfolio based on Modified Snail Trail produces slightly lower expected return than the Sharpe with 3 differences on high rating

equity fund’s compiler. The lowest expected return and Sharpe ratio is produced by high rating equity fund portfolio that based on Morningstar.

**Benchmark Portfolio:** The benchmark portfolio used is the optimal Islamic, conventional and hybrid portfolios that presented with several alternatives, which are equal weight, maximize return, minimize risk and maximize the Sharpe ratio and result can be seen in Table V.

Based on the data processing result, can be stated that high rating equity fund portfolio is outperforming the optimal portfolio for weighted and minimizing risk portfolio for all of three categories. Only in maximizing return and Sharpe ratio, performances of high rating equity fund is underperforming the optimal hybrid, conventional and Islamic portfolio. The performance mentioned here has already covered the expected return, risk and Sharpe ratio for each types of portfolio.

## CONCLUSION

This research intends to compare performances of Islamic and conventional equity mutual fund to market which represented by IHSG and JII. The purpose of is research is to examine whether the Islamic mutual fund can outperform the conventional mutual fund and the market. Based on the data processing with ANOVA test in 5% level of significance, it is found that the return and risk adjusted return performance of Islamic equity funds

and market have no significance differences, so do conventional equity funds compared to the market. The return and risk adjusted return performance of Islamic equity funds also have no significance differences.

By using different rating methods, which are return, Sharpe Index, Modified Snail Trail and Morningstar Rating, this research will assess the rating performance of the samples. The result of rating can be seen on the table 7.8 in the appendixes. The rating based on return and Sharpe Index produce exactly equal rating for each constituent samples. On the other hand, Modified Snail Trail rating produces 18 equal ratings compared to Sharpe, whereas Morningstar rating generate 12 equal ratings.

Based on the rating given by each method, this research constructs portfolios that consist of high rating equity fund for each rating method to assess the accuracy of method to choose the best performance of equity fund. The results of these portfolios are already can be observed. High rating equity fund based on return and Shape Index produces highest annual return with 13.96% and Shape Index of 0.52. The second places is inhabited by high rating equity fund based on Modified Snail Trail with 10.65% annual expected return and 0.397 Sharpe Index. On the last place, high rating equity fund portfolio based on Morningstar produce 8.32% annual return with 0.299 Sharpe Index. Benchmark of performance, this research builds optimal Islamic, conventional and hybrid portfolio with four alternatives. The alternatives are equal weighted portfolio, maximizing return portfolio, minimizing risk portfolio and maximizing Sharpe Index portfolio. Reposed on the data analyzing, the performance of high rating equity funds, except for Morningstar, are outperforming the Islamic, conventional and hybrid portfolio in equal weighted portfolio and minimizing risk portfolio.

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