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# THE EFFECT OF ASSET ALLOCATION POLICY AND LEVEL OF RISK ON THE PERFORMANCE OF SHARIA MIXED MUTUAL FUNDS (A STUDY TO SHARIA MIXED MUTUAL FUNDS LISTED IN FINANCIAL SERVICE AUTHORITY)

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**Abstract**

*A Sharia-based instrument is an alternative that can be used by the community, especially the Moslem community in Indonesia. This research is aimed at examining the influential variables, which were the variables of asset allocation policy and level of risk affected the performance of sharia mixed mutual funds. This research tried to see the performance of mixed mutual funds that have not been conducted in previous research based on the asset allocation policy and the level of risk. This research employed multiple linear regression analysis. The results showed that asset allocation policy did not have a significant effect on the performance of sharia mixed mutual funds. Level of risk had a significant effect on the performance of sharia mixed mutual funds. Asset allocation policy and level of risk simultaneously had a significant effect on the performance of sharia mixed mutual funds registered on the Financial Service Authority in the period 2012-2017.*

*Keywords: Sharia Mixed Mutual Funds, Mutual Fund Performance, Asset Allocation Policy, Level of Risk*

## INTRODUCTION

The capital market is one of the benchmarks of a country's economic progress, and a place for investors to invest their funds in various investment instruments available in a capital market, for instance, shares, bonds, mutual funds, and other investment instruments. Investment in mutual funds attracts the attention of investors in Indonesia in recent years in which it can be seen through the positive performance improvement for all types of mutual funds. Mutual funds are one of the investments in the capital market. In other words, it is a place for investing the community funds in shares, bonds, term deposits, and other forms of securities formed in the portfolio with the similar investment objective (Suta, 2000).

There are two sub-categories in mutual funds, namely sharia and conventional mutual funds, According to Syafrida et al. (2014), the performance of sharia-based instruments is not less profitable compared to conventional mutual funds, and during the research period, sharia investment instruments showed slightly better performance. Sholilah and Asandimitra (2017) stated that overall, the sharia share index in Indonesia (ISSI – *Indeks Saham Syariah di Indonesia*) showed more outperformed performance compared with IDX (IHSG – *Indeks Harga Saham Gabungan*). The high growth of sharia mutual fund products has given a good signal in the Indonesia capital market. Therefore, this will encourage more competitive capital costs through the change in the market structure of the companies' capital resources, and encourage mobilization of public funds into an alternative source of funding. At the end of 2017, there were 181 types of sharia mutual fund products offered to the public in Indonesia. The number of these products was still far less compared to the number of conventional mutual funds in the community, which reached 694 products. The growth of sharia mutual fund products is running quite well, although the growth is not too high. However, in terms of the number of products and the value of NAB, the growth of sharia mutual funds is still better than the growth of conventional mutual funds. In conventional mutual funds, there are several products that are released, thereby reducing the overall value of NAB of conventional mutual funds. Meanwhile, sharia mutual funds tend to increase.

Sharia mutual funds are a place for collective investment by investing sharia managed fund in the forms of sharia shares, *sukuk* or other sharia instruments. There are several types of mutual funds registered on sharia capital market, namely sharia share mutual funds, sharia money market mutual funds, sharia fixed income mutual funds, sharia mixed mutual funds, sharia protected mutual funds, sharia index mutual funds, mutual funds in the form of collective investment contracts (KIK – *Kontrak Investasi Kolektif*) for limited participation in sharia, foreign sharia securities-based mutual funds, and sharia *sukuk*-based mutual funds (Financial Service Authority, 2018).

A mutual fund will provide different performance compared to other types of mutual funds. Based on the data, there is an interesting phenomenon in which the average of mixed mutual funds provided the highest performance at 9.29% above the average of share mutual funds that provided the performance at 7.7%. This is related to the share market movements which experienced a deep correction in the third quarter of 2016, and mixed mutual funds in the form of portfolio consisted of shares, bonds, or money market up to 79% have lower risk characteristics, thus they do not fall as deep as share mutual fund (The Performance of Sharia Mixed Mutual Funds 2016, 2017).

In addition to measuring the performance of mutual funds, there are several factors that can affect the performance of mutual funds. The indicators are asset allocation and level of risk. In asset allocation, investment managers are given the authority to determine the proportion of each type of assets in managed mutual funds.Each mutual fund asset allocation policy is listed in the prospectus of each mutual fund. Risk is the difference between the expected rate of return and the actual rate of return.

Nurcahya and Bandi (2010) explained that the asset allocation policy is set differently, but in the principal, it is the same in which it provides the highest rate of return on investment compared to other investments with certain risks. Investment in mutual funds has two opposite sides, namely return and risk. The level of mutual fund risk is depended on the asset allocation policy, it indicated that the investment managers allocate the funds to available asset classes and the portion of the distribution of funds, thus it can generate returns expected by the investors.

Previous research conducted by Sari and Agus (2012), Nurcahya and Bandi (2010) and Paramitha and Purnawati (2017)saw the performance of share mutual funds. Meanwhile, another research conducted by Waridah and Mediawati (2016) studied the performance of sharia share mutual funds. This research tried to see the performance of mixed mutual funds that have not been conducted based on the asset allocation policy and the level of risk.

## LITERATURE REVIEW

### Asset Allocation and the Performance of Asset Allocation

According to Guo and Lu (2009), the asset is the process of distributing investment by the investors to several types of assets, such as shares, bonds, money market, real estate, or other asset classes. Strategy in determining the composition of assets aims to provide the highest rate of returns and the proportional level of risk. Paramitha and Parnawati (2017) stated that the asset is the process in determining the composition of several types of assets (shares, bonds, SBI, deposit) in the form of securities portfolio. In sharia mixed mutual funds.

The composition of several types of assets will generate different return and variations in the portfolio. This is affected by the market conditions in which if a type of asset provides a high return and it might cause other types of assets to produce a low return. Investing in more than one type of assets can reduce the risk of loss and the overall fluctuation of return on the portfolio will be more stable. If investment in a type of assets suffers losses, investment in other types of assets can provide a high return, thus it can cover the losses. In other words, it can reduce the losses, and provide a high return on the portfolio overall.

Sharpe (1995) developed the regression analysis method: Asset Class Factor Model. This model determines the effectiveness of managers in investing in the asset allocation policy. Asset allocation policy analyzed with three variables, namely:

$$x_1 = b_{i1}F_{1t} = \text{Asset allocation for sharia shares}$$

$$x_2 = b_{i2}F_{2t} = \text{Asset allocation for } sukuk$$

$$x_3 = b_{i3}F_{3t} = \text{Asset allocation for mudhabarah deposits}$$

Formula Asset Class factor Model (Sharpe, 1995):

$$R_{it} = [b_{i1}F_{1t} + b_{i2}F_{2t} + b_{i3}F_{3t}] + \varepsilon_{it}$$

Information:

$R_{it}$ = the return of asset i in the period t

$b_{i1}$ = the proportion of funds in mutual funds i for asset allocation 1, which is sharia shares

$b_{i2}$ = the proportion of funds in mutual funds i for asset allocation 2, which is *sukuk*

$b_{i3}$ = the proportion of funds in mutual funds i for asset allocation 3, which is mudhabarah deposits

$F_{1t}$ = return obtained from the asset class index 1, which is ISSI in the period t

$F_{2t}$ = return obtained from the asset class index 2, which is12-month deposit interest rate in the period t

$F_{3t}$ = return obtained from the asset class index 3, which is 3-month deposit interest rate in the period t

$\varepsilon_{it}$ = error term (securities selection) including timing and share picking

Rasmussen (2003) stated that 90% of the performance of the portfolio can be explained by asset allocation. In other words, the asset allocation decision is an important decision in the life of portfolio. Widiana (2009) added that the effect of asset allocation on the performance of mutual funds in Indonesia was 62.67%. This is in line with the research conducted by Alexandri

et al. (2017), Nurcahya and Bandi (2010), Paramitha and Purnawati (2017), and Citra (2017), which stated that the asset allocation policy had a significant effect on the performance of share mutual funds.

**H1: The asset allocation policy has a significant effect on the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2011-2017.**

**Level of Risk and the Performance of Mutual Funds**

Risk is the difference between the generated return and the expected return. Risk affects the amount of return expected by investors. Several common risks in the investment are (1) risk of decrease NAB/(NAV)/participation units: due to the decline in the price of the securities, (2) liquidity risk: due to the investment managers have difficult providing cash when the investors make resales (redemption), (3) market risk: due to the decreased price of investment instruments caused by a drastic decline in the performance of market (bearish condition), (4) breach of contract risk: the result is that the insurance companies do not immediately pay compensation when an undesirable situation occurs, (5) default risk: the most fatal risk, for example, due to the issuers who experience financial difficulties, thus they cannot pay the capital. Standard deviation is commonly used to measure the amount of risks, which is the magnitude of the spread of the probability distribution that shows the number of the distribution of random variables between averages. The greater the spread, the investment's standard deviation is also getting greater. The formulation in measuring standard deviation is:

$$= \sqrt{\frac{\sum_{i=1}^{n}\{R_i - E(R_i)\}^2}{N}}$$

Information:

$\sigma i$ = standard deviation

$R_i$ = the value of return in the period i

$E(R_i)$ = the value of expected return

N = number of observations

According to Pradipta (2015), the result of measuring portfolio risk of each mutual fund can be compared with Sharpe Ratio as a proxy for the performance of mixed mutual funds. The research conducted by Nurcahya and Bandi (2010), Handyani et al. (2015), and Pradhpita (2015) concluded that the level of risk had a significant effect on the performance of share mutual funds.

**H2: The level of risk has a significant effect on the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2011-2017.**

**H3: The allocation policy and the level of risk have a simultaneous effect on the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2011-2017**

**Measurement of the Performance of Mutual Funds**

The performance of mutual funds is the ability of mutual fund products to compete with other mutual fund products on the market and make profit. A mutual funds' performance is determined by the magnitude of return obtained by the investment that is known as net asset value (NAV/NAB – nilai aktiva bersih). In this research, the Sharpe ratio that was introduced by Sharpe (1966) was employed as the method of calculating returns on mutual funds in order to measure the performance of the portfolio and also known as the reward to variability (RVAR), based on the research on the capital market theory. Portfolio risk is measured using a portfolio standard deviation.

According to Tandelilin (2010), the Sharpe ration is based on the measurement of the capital market line as the benchmark by dividing the portfolio risk premium with its standard deviation. The greater the RVAR value, the performance of the portfolio is getting better. The Sharpe ratio aims at measuring the optimal diversification of a combined portfolio can generate profits with certain risks.

The equation for calculating the Sharpe ratio is

$$S_p = \frac{R_p - R_f}{\sigma_p}$$

Information:

$S_p$ = the performance of the portfolio measured by the Sharpe Method

$R_p$ = the average of the expected return of the portfolio during the period,

$R_f$ = the average of the risk-free interest rates during the period, and

$\sigma_p$ = the standard deviation of the return of the portfolio during the period.

**RESEARCH METHOD**

This research examined the effect of asset allocation and level of risk on the performance of mutual funds conducted by all sharia mixed mutual funds listed in the Financial Service Authority with the research period of six years. After conducting recapitulation of the results of

the asset allocation policy, the level of risk and the performance of mutual funds, classical assumption test including normality test using one-sample Kolmogorov-Smirnov test, multicollinearity test that is based on the value of Variance Inflation Factor (VIF), autocorrelation test that is based on the Durbin-Watson value, and heteroscedasticity test that is based on the scatterplot. After passing the classical assumption test, then multiple linear regression analysis is conducted by testing the hypothesis (F-test and t-test).

The formulation of the multiple linear regression is:

$$Y = \alpha + b_1X_1 + b_2X_2 + \varepsilon$$

Information, Y= the performance of sharia mixed mutual funds; $\alpha$= constants, $b_1, b_2$= regression coefficient; $X_1$= asset allocation policy; $X_2$= level of risk$\varepsilon$= error

## FINDINGS AND DISCUSSION

Classical assumption tests were conducted: (1) the normality test was conducted using the Kolmogorov-Smirnov test to give the results of the significance level (2-tailed) of 0.200 in which it was above α = 0.05, thus the data was normally distributed, (2) multicollinearity test was conducted by looking at the VIF value and tolerance on asset allocation and level of risks of 1.1013 < 10, the tolerance value also showed similarity in which each independent variable had the tolerance value of 0.987 > 0.1, thus there was no multicollinearity test between independent variable and decent regression model, (3) autocorrelation test was conducted using the Durbin-Watson test with the DW value of 1.758. This value was be compared with the Durbin-Watson table value with a significance value of 5%, the total sample of 42(n), and the number of independent variable of 2 (k=2), thus in the Durbin-Watson table, it was be obtained the value for the lower limit (dl) was 1.360 and the value for the upper limit (dl) was 1.662. The DW value of 1.758 was between the dU value (1.662) and 4-dU (2.34). The result was included in the category of du < d < 4-dU which indicated that there was no autocorrelation, thus the regression model was feasible to use, (4) heteroscedasticity test was conducted by looking at the result of scatterplot graph. The graph showed that there were no specific patterns or points that had a random distribution, thus there was a heteroscedasticity problem. After passing the classical assumption test, then multiple linear regression analysis was conducted.

### Coefficient of Determination

After conducting the classical assumption tests, then the multiple linear regression analysis was conducted. The coefficient of determination observed the value of adjusted $R^2$. If $R^2$ reached zero, independent variables could not explain variations of the dependent variables well. If $R^2$ reached 1, variations of the variables could explain the dependent variables. In this research,

the result of $R^2$ test obtained the value of 0.184. Coefficient of determination was measured by squaring the value of R (0.429), and then multiplying it by 100%. The value of coefficient of determination obtained from 0.184 X 100% was 18.4%. This showed that the performance of shares mutual funds was affected by asset allocation, level of risk of 18.4%, while the rest of 81.6% was affected by other factors that were examined in this research.

**Multiple Linear Regression Analysis**

$$Performance\ of\ RDC\ Syariah = -0{,}374 - 7{,}690\ Asset\ Allocation + 2{,}907\ Level\ of\ Risk + \varepsilon$$

**The Effect of Asset Allocation Policy and Level of Risks on the Performance of Sharia Mixed Mutual Funds**

Based on the results of data processing, the equation regression was obtained as follows, $Y = -0{,}374 - 7{,}690X_1 + 2{,}907X_2 + \varepsilon$ in which Y was the variable of the performance of mutual funds, $X_1$was the variable of asset allocation and $X_2$was the variable of level of risk.

From the equation, it could be seen that the asset allocation policy had a negative sign, and it showed an opposite relationship to the performance of mutual funds. This was in line with the research conducted by Sari and Agus (2012) and Wetri et al. (2015) who stated that although investment managers had implemented an optimal asset allocation policy on managed mutual fund, the result did not affect the improvement in mutual fund performance. Furthermore, the variable of level of risk had a positive sign, and the result was in line with the research conduced by Wetri et al. (2015) who stated that the greater the risk level of mutual funds, the return would also be greater, thus the performance of mutual funds would be better.

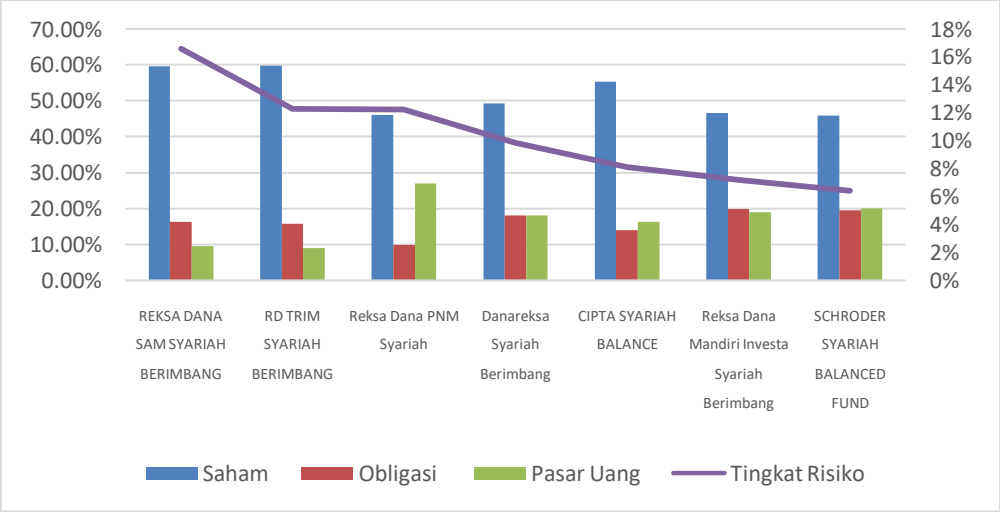


Figure 1. Asset Allocation Policy and Level of Risk

Based on Figure 1, the investment managers who placed bond assets in the second place in the distribution portion of their funds would averagely provide the higher level of risks than when they placed money market assets in the second place in the distribution of their funds. This was in line with the research conducted by Nurcahya and Bandi (2010) who stated that the risk level of mutual funds depended on asset allocation policy, which indicated that the investment managers allocated the funds to available asset classes and the portion of the distribution of funds.

Multiple linear regression analysis (F-test) provided the result in which there was a significant effect of asset allocation policy and the level of risks on the performance of sharia mutual funds listed in the Financial Service Authority in the period 2012-2017. Meanwhile, based on the result of t-test, the variable of risk level affected the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2012-2017. In addition, the variable of asset allocation policy did not have an effect on the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2012-2017.

**The Effect of Asset Allocation Policy on the Performance of Sharia Mixed Mutual Funds**

Asset allocation policy was an effort to integrate various types of assets with different levels of return into a portfolio with the aims of obtaining actual return expected by the investors. The asset allocation policy for each mixed mutual funds is listed in fund fact sheet of each mutual funds that was called as the investment policy

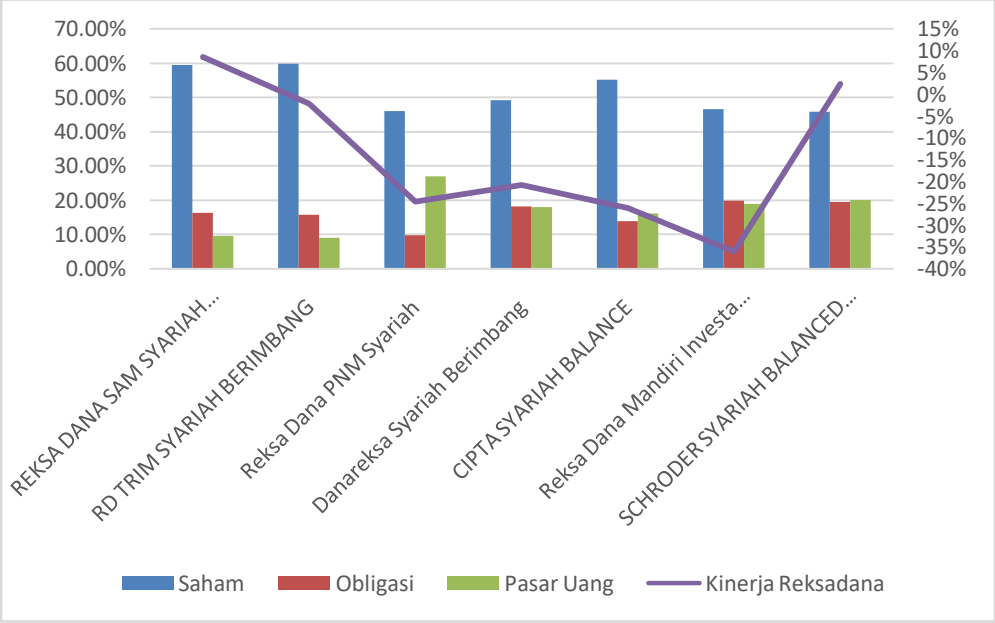


Figure 2. Asset Allocation Policy and Level of Risk

From the figure 2, the composition of sharia shares dominated the proportion of asset allocation and it indicated that when the investment managers put a large portion on the distribution of funds in the class of share assets compared to bonds and money markets, the returns obtained were also dominated by sharia shares. The investment was probably conducted on blue chips shares, which were shares with the best performance and the high liquidity on the trading floor, or it was limited to shares considered good for certain industries (Pradhipta, 2015). Therefore, when the return of sharia share declined, the asset allocation policy would significantly affect the performance of mutual funds, and there was lack of effect of the return of the bond and money market assets classes. There were four sharia mixed mutual funds that obtained poor mutual fund performance, namely Reksa Dana PNM Syariah, Cipta Syariah Balance, Reksa Dana Mandiri Investasi Syariah Berimbang, and Danareksa Syariah Berimbang, in which these mutual funds put a larger portion of the distribution of funds in the class of money market assets than bond assets. This result was in line with the research conducted by Widiana (2009) who stated that asset allocation for money market did not significantly affect the performance of mixed mutual funds.

This result was also in line with the research conducted by Agus (2012), Wetri et al. (2015) and Pradhipta (2015) who stated that asset allocation did not have an effect on the performance of share mutual funds. However, these three research contradicted previous research conducted by Alexandri et al. (2017), Handayani et al. (2015), Nurcahya and Bandi (2010), Paramitha and Purnawati (2017), and Citra (2017) who stated that asset allocation policy significantly affected the performance of share mutual funds.

**The Partial Effect of Level of Risk on the Performance of Sharia Mixed Mutual Funds**

The total risk in the portfolio was divided into two, which were the systematic risk and the non-systematic risk. Mutual funds were the investment instrument in the form of portfolio. In the portfolio theory, non-systematic risk could be minimized by diversifying investment instruments, while systematic risk could not be minimized by diversifying because this risk was affected by the external factors of the company. This result showed that the investors could understand the performance of share mutual funds by looking at the risk generated in the portfolio of a mutual fund.

This research was in line with the research conducted by Nurcahya and Bandi (2010), Wetri et al. (2015) and Pradhipta (2015) who stated that the risk level positively and significantly affected the performance of mutual funds.

## CONCLUSION

Based on the result conducted in sharia mixed mutual funds listen in the Financial Service Authority in the period 2012-2017, it is concluded that (1) asset allocation policy and level of risk simultaneously had a significant effect on the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2012-2017. (2) There was no a significant effect of asset allocation and the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2012-2017, (3) there was a significant effect of the level of risk and the performance of sharia mixed mutual funds listed in the Financial Service Authority in the period 2012-2017.

This research provides implications for the investors, the investment managers, and further research: (1) for the investors, before deciding to invest in the product of mutual funds, asset allocation policy and level of risk must be noticed to generate the optimal performance of mutual funds, (2) for the investment managers, when allocating the assets, a correct calculation is needed by combining asset allocation policy and the level of risk, (3) for the investment managers, in preparing the asset allocation policy, share assets should be put in the first place, then followed by bond and money market assets in order to obtain the optimal performance of mutual funds. (4) The recommendations for further research are: (a) In this research, the result of test $R^2$ that obtained was 18.4%, and it still has other independent variables that can be used as the variables in the further variables, such as the performance of investment manager, shares collection, market timing, and other variables. It could better explain the factors that affect the development of share mixed mutual fund performance. (b) This research employs the Sharpe ratio to measure the performance of sharia mixed mutual funds. In further research, other methods, such as the Treynor ratio, Jensen, and others, can be used so that several other comparable models can be obtained. (c) Further research can use other types of mutual funds that have not yet been studied, such as fixed income mutual funds or sharia and conventional money market mutual funds.

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