The Effect of Market Timing Ability and Inflation Rate on Asset Allocation and Performance of Islamic Mutual Funds in Indonesia

Tri Kuncoro Prasetyo Hutomo¹, Sutrisno²

¹Universitas Islam Indonesia, Faculty of Business and Economics, Sleman, Yogyakarta, Indonesia
²Universitas Islam Indonesia, Faculty of Business and Economics, Sleman, Yogyakarta, Indonesia


Abstract
This study aims to determine and understand the effect of the two research models. The first model is the effect of the independent variables market timing ability and inflation rate on the dependent variable asset allocation. The second model is the effect of independent variables market timing ability, inflation rates, and asset allocation on the performance of Islamic mutual funds in Indonesia (July 2017-June 2022 Period). Mutual fund performance is measured by the Omega Ratio with a minimum expected return threshold of 10%. The sample selection technique uses purposive sampling and uses 5 samples of Islamic funds that have a barometer below 3 or are considered unfavorable. The research method is quantitative by testing t partial using SPSS 28 software. The results of the t test show that partially, market timing ability and inflation rate have no effect on asset allocation and mutual fund performance, while asset allocation has a negative effect on mutual fund performance.

Keywords: Market Timing Ability, Inflation Rate, Asset Allocation, Omega Ratio

1. Introduction
Investment is one of the choices for money saving commitments, because the value of money will continue to decline, it is important to maintain the value of the money or even make it worth many times in order to make a profit (Bodie et al., 2018). Those who invest, otherwise known as investors—whether individuals or institutions—always face the question of how to allocate their funds to the available assets. To answer such question, investors use portfolio management as a systematic way to find, analyze, select, execute, and provide feedback on the performance of the funds invested (Saleh & Sarhan, 2020). One of the important aspects in portfolio management is asset allocation, which requires considerations related to asset availability, level of risk, time period to realize return, as well as time and market conditions. The level of risk, timing, and market conditions are interrelated factor but difficult to predict.

The ability of investment managers in managing funds can be seen from the manager's policy in determining the right time to buy or sell shares (market timing ability). This is also one of the factors that affect the performance of mutual funds (Putri et al., 2019). Investment managers must also pay attention to when the value of the stock will rise and when it will fall.
course is influenced by macroeconomic conditions. Macroeconomic data, including inflation data, generally have an impact on the movement of the stock and bond markets which in turn has an impact on the performance of mutual funds (Endri, 2021).

According to Zouaoui (2019) analyzing performance is very important to understand the operation of investment funds. What's more important, however, is knowing if the performance can hold up in the future and even better. The study of performance persistence is essential in explaining how investors should select funds and develop their investment strategies.

With these various considerations, investment will be a complicated thing and not all people can take it into account. However, there is one alternative investment that is suitable for investors who do not have much time and expertise to calculate the risk of investment, namely mutual funds.

According to Malik (2022), there are some interesting facts about mutual funds compared to other investment instruments. Some of them are: Attractive potential return; The minimum amount of investment starts from IDR 10,000; Various types that can be selected according to the level of investor tolerance for risk; There is no risk of loss because it is not a physical form; Flexible investment because it can be traded at any time; Management is carried out by professional investment managers; Tax-free; Has been diversified so that asset allocation can be entrusted by investment managers; Ease of purchasing transactions using a smartphone; and supervised by the Financial Services Authority (OJK). Mutual funds consist of 2 types based on their management principles, namely conventional mutual funds and Islamic mutual funds. Although the number of Islamic mutual funds in Indonesia is still far from the number of conventional mutual funds, this number increases every year, unless in 2020 to 2021 even though the Net Asset Value (NAV) has decreased from 2020 to 2021. Recorded until December 2021, there are a total of 289 Islamic mutual funds in Indonesia.

In general, the number of Islamic mutual funds tends to increase, one of the reasons is that Indonesia, one of the largest Muslim-majority countries in the world, has become a promising place for the development of the Islamic finance industry (Robiyanto et al., 2019). Halal, a reference to Islamic values, now become a part of the lifestyle of modern society and growing trend as well as a new opportunity in almost all over the world. Therefore, Indonesian government is committed and engaged in realizing a halal lifestyle in Indonesia. One form of implementing a halal lifestyle is by changing the conventional stock investment portfolio to Islamic in accordance with the fatwa of the National Sharia Council of the Indonesian Ulema Council (DSN MUI) which is reflected in the Indonesian Sharia Stock Index (ISSI) and the Jakarta Islamic Index (JII). This is also followed by switching mutual fund investments to sharia, bonds to sukuk, or other sharia/halal investment instruments (Perdana, 2021). Choosing a profitable mutual fund is very important. Many researchers have shown that investors buy funds based on past performance as a selection criterion with limited information (Hsu et al., 2011). This means that there are many factors that need to be considered in order to choose a mutual fund. Based on the explanation of investment trends in Islamic stocks, the object in this study uses Islamic stock mutual funds to see whether the variables specified in this study affect the performance of Islamic stock mutual funds so that these mutual funds are eligible to be selected.
Before understanding what variables will be investigated in this research, it is important to recognize the term barometer in mutual funds. The barometer in mutual funds is valued from 1 to 5 which can be used as a reference in selecting mutual funds for the general public. A high rating in a mutual fund indicates that historically, the fund has consistently produced returns and low risk. It is believed that the barometer on mutual funds can be used as an assessment for investors to choose mutual funds (Bareksa, 2017). The problem studied in this research is what are the variables that might affect the allocation of assets in mutual funds and whether these variables also affect the performance of the mutual fund so that it gets a low barometer rating. If the significance of these variables can be known, it can be used as a lesson in the future for an investment manager or investor to pay attention to so that the risk of loss in investing in mutual funds can be anticipated and return can be achieved.

Mutual fund performance measurement in this study is seen through the omega ratio, a ratio that contains a formulation in which investors can determine the threshold, return which is determined at 10%. The two factors that have been described then become independent variables that influence mutual fund performance, namely market timing ability and inflation rate. These two variables are also thought to be the determinants of investment managers' decisions in terms of asset allocation. However, it is important to understand whether the allocation of assets formed also affects the performance of a mutual fund, considering that the allocation is made into risky and non-risky assets, which largely determine the performance of a mutual fund. The main objective of an investment person and/or investment manager in investment management is to obtain returns with low risk as measured by the performance of mutual funds. This study is also intended to predict whether there is an influence of asset allocation on the performance of Islamic equity mutual funds.

Systematically, the research is divided into 2 models, namely Model 1 to examine the effect of Market Timing Ability and Inflation Rate on Asset Allocation. Model 2 to examine the effect of Market Timing Ability, Inflation Rate, and Asset Allocation on the Performance of Islamic Equity Mutual Funds.

2. Theoretical Review and Hypothesis Development

The Effect of Market Timing Ability on Asset Allocation

In doing asset allocation, especially by means of diversification, an investment manager must have various considerations in developing a portfolio. One of them is determining when the stock value in the market goes up and when it goes down. This means that investment managers must have good market timing ability. According to Jahanzeb et al. (2013), the company's financial reference shows the results precedent modification of the stock price plus market timing. Company managers will take advantage of the situation to issue shares in order to reduce the pressure of narrowing money and enlarge the strengthening phase during the phase of market expansion and market prosperity. It is the same with mutual funds, where the investment manager will rearrange the financial structure—in this case the portfolio—so that good performance is obtained. Portfolios are developed through diversification or asset allocation. The first hypothesis is formed by surmising that an increase in Market Timing Ability will affect an increase in Asset Allocation. Thus, in this study, the effect of market timing ability on asset
allocation is suspected to be directly proportional or has a positive effect and is defined as follows:

**H1: Market Timing Ability has a positive effect on Asset Allocation**

**Inflation Rate Effect on Asset Allocation**

Bank Indonesia has explicitly stated that they will always intervene in the final target of Indonesia's Monetary Policy. To achieve this target, the central bank will set short-term operational targets that will be adjusted to the performance of the economy and financial markets (Sitorus, 2015). Thus, inflation regulation policies will affect asset values (Rizal et al., 2018). The inflation rate ultimately requires investment managers to make portfolio adjustments with diversification or asset allocation. An increase in the inflation rate generally leads to a decrease in asset allocation. The higher the inflation rate, the lower the asset allocation value or inversely proportional to each other. In this study, the effect of the inflation rate on asset allocation will be tested.

**H2: Inflation Rate has a negative effect on Asset Allocation**

**The Effect of Market Timing Ability on Mutual Fund Performance**

The market timing model by Treynor & Mazuy (TM) identifies the ability of investment managers to develop timing strategy in capital transfer between safe and risky securities based on whether the market is running for better or for worse (Atta & Marzuki, 2021).

Market timing ability of a manager is suspected to affect the performance of the managed mutual funds because the performance of the mutual fund is closely related to market price fluctuations. If the predictions are made right, then the investment manager can turn these market movements into profits.

The research refers to the notion that market timing ability affects the performance of mutual funds and that this also refers to previous research. According to Budiono & Azis, (2020), market timing ability has a positive and significant effect on the performance of equity mutual funds in Indonesia. Thus, in this study, a hypothesis is defined as follows:

**H3: Market Timing Ability has a positive effect on Mutual Fund Performance**

**Inflation Rate Effect on Mutual Fund Performance**

Inflation is a decrease in the value of money on the value of goods and services in general. Interest rates are also one of the factors that affect inflation. This is because a very high interest rate increase will reduce the money supply, but on the other hand it will increase real sector lending rates. Inflation in Indonesia was also affected by the price increase of imported commodities and the swelling of foreign debt as a result of the depreciation of the rupiah against the US dollar and other foreign currencies. Exchange rate volatility will affect the flow of capital or investment and international trade.

Highlighting on the issue of capital flow or investment, this causes changes in the NAV of the mutual fund. This NAV is the basis for calculating mutual fund performance. So the second in this study is about the effect of the inflation rate on the performance of mutual funds.
Partially, according to Endri (2021) and Trivanto et al. (2015), the inflation rate does not affect return of equity mutual funds in Indonesia. However, Sholihat et al. (2013) proved in their research that the inflation rate has a negative and significant effect. So, in this study, it is necessary to re-examine whether the inflation rate affects the performance of mutual funds and it is written as follows:

**H4:** The inflation rate has a negative effect on the performance of mutual funds

**The Effect of Asset Allocation on the Performance of Mutual Funds**

Asset allocation is closely related to portfolio adjustment. A good proportion will affect the performance of the mutual fund. Alves & Mendes, (2011) explained that the asset allocation variable is closely related to fund management by investment managers. Each investment manager has a certain policy in allocating assets even though in principle they have the same goal, namely to provide returns higher investment.

Endri (2021) conducted a study on the effect of asset allocation on mutual fund performance using the Sharpe Ratio. Consideration that is included in the asset allocation variable are shares. The results showed that the coefficient of the asset allocation variable was negative. In other words, the greater the asset allocation, the lower the Sharpe Ratio. A large proportion of the allocation to shares results in an increase in risk, which results in a decrease in the performance of a mutual fund if the stock price is not good. The low barometer on the object of research is suspected because the investment manager allocates quite a lot of shares when stock conditions are not good. This causes the performance of equity funds to decline. So that the test is carried out by defining the hypothesis as follows:

**H5:** Asset Allocation has a negative effect on Mutual Fund Performance.

### 3. Method

#### Population and sample

The population in this study were 49 Islamic equity mutual fund products registered with the Financial Services Authority in Bareksa. From this population, a number of samples were taken using the purposive sampling method, in which the sample must meet the following criteria:

- Have poor performance as indicated by rating below 3 in June 2022.
- Islamic equity mutual funds that have been registered with the OJK on the Bareksa website and have effective date for the period of 5 years July 2017 – June 2022.
- Islamic equity mutual funds that are still active and managed by investment managers.
- Islamic equity mutual funds have data availability according to the data period July 2017 – June 2022.
- Islamic equity mutual funds are available at Bareksa.com and are in rupiah.

From these criteria, a sample of 5 Islamic equity mutual funds was obtained. The five products are

1. Pratama Syariah
2. Simas Syariah Unggulan
3. Mandiri Investa Syariah
Operational Definition of the Variables

The following are defined variables that support the research process which are then processed to be inputted in the SPSS 28 program to perform multiple linear regression analysis used in test the effect between variables.

Mutual Fund Performance

Independent Variable Mutual Fund Performance is calculated using the omega ratio with the optimization formulation:

$$\max_{w \in \mathbb{R}^n} \frac{w^T \mathbb{E}(\tilde{r}) - \tau}{\mathbb{E}[\tau - w^T \tilde{r}] + 1} + 1$$

s.t. $w^T 1 = 1$

$\bar{w} \leq w \leq \bar{w}$

This optimization problem discussed by Kapsos et al. (2014) aims to determine the allocation that gives the optimal weight ($w \in \mathbb{R}^n$) which results in a portfolio with the maximum Omega Ratio. The constraints given are related to budget the upper and lower limits of an investor.

Market Timing Ability

Market Timing Ability (MTA) is an investment manager's ability to choose the right investment time to buy or sell Islamic shares in a certain period of time to form a portfolio. MTA is measured using the Treynor & Mazuy (TM) approach which is written as follows:

$$TM = R_{fh,t} - R_f = \alpha_i + \beta_i(R_m - R_f) + \gamma_i(R_m - R_f)^2 + \epsilon_{fh}$$

Variable $R_{fh,t}$ shows the average return of mutual funds in period $t$, the variable $R_{f,t}$ shows the average return risk-free $t$ obtained from the Indonesia Overnight Index Average (IndONIA), the variable $R_{m,t}$ shows the average return in period $t$ obtained from the Indonesian Sharia Stock Index (ISSI), the variable indicates a measure of selectivity ability, and $\gamma_{i,t}$ indicates market timing.

Inflation Rate

Inflation is a decrease in the value of money against the value of goods and services in general (BPS, 2022). According to Panjaitan & Wardoyo (2016) there are many factors that influence changes in inflation which are broadly divided into demand pull inflation and cost push inflation. Interest rates are also one of the factors that affect inflation. This is because a very high interest rate increase will reduce the money supply but on the other hand will increase the real sector lending rate.

Asset Allocation
The composition of asset allocation can be in the form of stocks, bonds, sukuk, money market and so on. Return on Islamic stock assets in the calculation of asset allocation is seen through the Indonesia Sharia Stock Index (ISSI), for sukuk from sukuk yields, while the money market is calculated from data on Bank Indonesia Syariah Certificates (BISC) obtained from the Sharia Banking Statistics (SBS) of the Financial Services Authority. (OJK). The formulation of asset allocation is written as follows:

\[ R_{it} = b_{i1}F_{1t} + b_{i2}F_{2t} + \cdots + \epsilon_{it} \]

The variable \( R_{it} \) shows return asset \( i \) in period \( t \), while the variable \( b_{i1} \) shows the proportion of mutual funds to \( i \) for asset allocation 1, variable \( F_{1t} \) shows return obtained from asset 1, and \( \epsilon_{it} \) is an error term that is not taken into account in the model.

**Data Analysis Method**

This study uses quantitative data analysis method including Multiple Linear Regression with Partial t test. The t-statistical test basically shows how far the influence of the explanatory/independent variable individually/partially in explaining the dependent variation (Ghozali, 2005). The following two regression equation models in this study are written as follows:

Model 1:

\[
AA = \alpha + \beta_1 MTA + \beta_2 INF + \epsilon
\]

Model 2:

\[
MFP = \alpha + \beta_1 MTA + \beta_2 INF + \beta_3 AA + \epsilon
\]

Where:

- AA : Asset Allocation
- MTA : Market Timing Ability
- INF : Inflation Rate
- MFP : Mutual Fund Performance

**4. Results and Discussion**

**Hypothesis test results**

This study partially tested 2 models. First, how is the influence of Market Timing Ability and Inflation Rate on Asset Allocation. Second, how is the influence of Market Timing Ability, Inflation Rate, Asset Allocation on Mutual Fund Performance. The following is the output of the SPSS 28 program which is used for the partial t test. The test uses the magnitude of the Sig value which is compared with a significance level of 0.05. Where the hypothesis will be rejected if the value of Sig > 0.05.
Table 1: Hypotheses test result

<table>
<thead>
<tr>
<th>Model</th>
<th>Model 1: Asset Allocation</th>
<th>Model 2: Mutual Fund Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coefficients</td>
<td>t</td>
</tr>
<tr>
<td>Constant</td>
<td>0.029</td>
<td>1.822</td>
</tr>
<tr>
<td>MTA</td>
<td>2.84E-02</td>
<td>0.551</td>
</tr>
<tr>
<td>INF</td>
<td>-0.851</td>
<td>-1.451</td>
</tr>
<tr>
<td>AA</td>
<td>-6.184</td>
<td>-3.509</td>
</tr>
</tbody>
</table>

Source: Data processed

Based on table 4, the Sig value for MTA in model 1 is greater than 0.05 (0.584 > 0.05). Hypothesis 1 (H₁) is rejected. It can be concluded that MTA has no effect on AA. This study is in line with research (Russel et al., 2022) that MTA does not affect AA. Explicitly, the study explores that a quality tactical asset allocation does not depend on market calls. There are tactical managers who use a systematic approach in shifting the composition of the asset allocation portfolio in response to changes in return, risk, and asset class correlations. According to Antoons (2015), asset allocation is a more important strategy in a successful long-term investment. This is because investment managers or investors who do market timing often fail to predict swings from the equity market. Long-term investment opportunities do not support market timing.

The Sig value for INF in model 1 is also greater than 0.05 (0.152 > 0.05). Hypothesis 2 (H₂) is rejected. It can be concluded that INF has no effect on AA. This study is in line with the research of Aulia & Latief (2020) where INF has no effect on ISSI. ISSI itself is used in the formulation of AA calculations. Theoretically, inflation has an effect on ISSI, but it is not the main reason for investors or investment managers to buy a stock. Companies that have good quality and reputation have the potential to provide good returns, so that regardless of inflation conditions, it will not affect investors’ decisions in allocating assets.

Based on table 4, it is also found that the Sig value for MTA in model 2 is greater than 0.05 (0.710 > 0.05). Hypothesis 3 (H₃) is rejected. It can be concluded that MTA has no effect on MFP. The results of this study are in line with Prabowo's (2018) research that Market Timing Ability does not affect the Performance of Islamic Equity Mutual Funds because predicting fluctuating prices is not easy. An investment manager must consider other variables that are more influential on the performance of the stock mutual fund. As it is known that Market Timing Ability is the ability of investors or investment managers to know when the market is going up and when it is going down which can be monitored on a daily or hourly basis. This was stated by Budiono & Azis (2020) that the right decision by the investment manager greatly affects the portfolio especially when buying and selling shares in order to anticipate changes in market prices. In this study, in the period July 2017 to June 2022, investment managers do not yet have the ability to adjust to market timing, and perhaps not become one of the considerations in determining optimal returns.
The Sig value for INF for model 2 is also greater than 0.05 (0.221 > 0.05). Hypothesis 4 (H4) was rejected. It can be concluded that INF has no effect on MFP. The results of this study are in line with the research of Endri (2021), that the inflation rate has no significant effect on the performance of mutual funds. The same thing was also expressed by Trivanto et al. (2015) that the level of inflation does not affect the return rate from equity funding in Indonesia, mutual funds in this case. This is presumably because investment managers are more focused on how to get the best possible return in the midst of the inflation rate. Investment managers believe that companies, especially members of the mutual fund portfolio, have strategies and solutions for the change in the inflation rate in Indonesia (Suzulia et al., 2020).

Based on table 4, it is found that the Sig value for AA in model 2 is smaller than 0.05 (0.001 < 0.05). Hypothesis 5 (H5) is accepted. It can be concluded that AA has a negative effect on MFP. The results of this study are in line with the research of Endri (2021) and Yusbardini (2014) that asset allocation has a negative effect on stock MFP. This is caused by the high volatility returns (standard deviation) which makes the Sharpe Ratio value decrease. The larger the asset allocation, the lower the Sharpe Ratio. The relationship with the Omega Ratio used in this study, is that when an investor or investment manager wants to maximize the Omega Ratio at a certain level, it is the same as maximizing the Sharpe Ratio at the risk free rate θ . The Omega ratio still considers the mean value and standard deviation like the Sharpe Ratio. In addition, a large allocation of shares results in an increase in risk, which results in a decrease in the performance of a mutual fund if the stock price is not good. According to the Financial Services Authority (OJK) regulation No 47 POJK.04/2015, equity mutual funds are required to invest at least 80 percent of their Net Asset Value (NAV) in shares. This number is quite large. Moreover, the actual data of the object of research shows that the allocation of assets to the majority shares is at least 90 percent of the NAV. Therefore, it can be concluded that the greater the asset allocation, the lower the Mutual Fund Performance.

Conclusions and Recommendations
Based on the results of data analysis and discussion of the previous sub-topics, it can be concluded in this quantitative study that in model 1, Market Timing Ability and Inflation Rate have no effect on the Asset Allocation variable. This insignificance is suspected because the asset allocation practice of an investment manager is more emphasized on portfolio development in stocks, money markets, or sukuk to the exclusion of monitoring market movements at any time (market timings). In addition, the company's focus is to provide returns through the proportion of Asset Allocation in the midst of persistent inflationary pressures.

While the results of model 2 data analysis show that Market Timing Ability and Inflation Rate have no effect on Mutual Fund Performance. This is presumably because investment managers do not have sufficient skills in the market timings. Also, investment managers are more focused on how to get return in the midst of the inflation rate which is still below 10%. It is different with the Asset Allocation variable which has a negative effect on Mutual Fund Performance. A large allocation to shares results in increased risk, which results in a decrease in the performance of a mutual fund if the stock price is not good.
This research is of course still far from perfect and has many limitations. Therefore, the
researcher provides recommendations for further researchers to add the number of variables or
replace them with other variables that perhaps have significant influences on asset allocation and
mutual fund performance so that a better equation model can be obtained. Later, it can be used as
a recommendation to investors and investment managers to pay more attention to the variables
that significantly affect asset allocation and mutual fund performance.

References
Alves, C., & Mendes, V. (2011). Does performance explain mutual fund flows in small markets?
Houses in Emerging Countries. The International Journal of Banking and Finance, 16(1),
21–42.
Aulia, R., & Latief, A. (2020). Pengaruh Inflasi dan BI Rate terhadap Indeks Saham Syariah
BPS. (2022). Inflasi. ttps://www.bps.go.id/subject/3/inflasi.html#subjekViewTab1
Budiono, M. A., & Azis, M.-. (2020). The Effect of Market Timing Ability and Fund Size on
Mutual Fund Performance of Mutual Fund Companies in Indonesia. AFEBI Economic
and Finance Review, 5(1), 45. https://doi.org/10.47312/aefr.v5i01.452
Composite Index (JCI) On Mutual Fund Performance. SSRN Electronic Journal, 9(3),
72–77. https://doi.org/10.2139/ssrn.3797571
Hsu, L.-C., Ou, S.-L., Yang, C.-C., & Ou, Y.-C. (2011). How to Choose Mutual Funds that
Perform Well? Evidence from Taiwan. International Journal of Economics and Finance,
4(1). https://doi.org/10.5539/ijef.v4n1p247
Theory, Pecking Order Theory and Market Timing Theory: A Comprehensive Review of
Innovations (IJMCI), 1(1), 11–18.


