

The effect of macroeconomic variables on the performance of islamic and conventional mutual funds in Indonesia

Agung Anggoro Seto

Department of Business Management, Politeknik Negeri Sriwijaya, Palembang, Indonesia

ARTICLE INFO

Article history:

Received Jun 25, 2024

Revised Jun 28, 2024

Accepted Jul 12, 2024

Keywords:

GDP;

Inflation;

Interest Rate;

Macroeconomic;

Mutual Fund.

ABSTRACT

This study intends to determine the effect of Inflation, interest rates, and Gross Domestic Product (GDP) on the performance of conventional and Islamic mutual funds in Indonesia. This is an example of associative research, which seeks to determine the relationship between macroeconomic indicators, such as Inflation, interest rates, and GDP, and the performance of mutual funds in Indonesia. This study employs quantitative data. The population consisted of all registered Islamic and conventional mutual funds with the OJK. The sample size was 1,920 conventional mutual funds and 272 Islamic mutual funds. The data source is secondary data from the ojk.go.id and bi.go.id websites, including inflation data, interest rates, GDP, and Net Asset Value (NAV) of mutual funds. The research was conducted between 2017 and 2021. Documentation in the form of quarterly inflation statistics, interest rates, GDP, and NAV of Islamic and conventional mutual funds in Indonesia will be employed as data gathering methodologies. The study's findings indicated that that macroeconomic variables such as Inflation, interest rates, and GDP did not significant effect on the partial and simultaneous performance of Islamic and conventional mutual funds in Indonesia. The absence of effect of macroeconomic indicators could be attributed to several factors, including low Inflation, limited investor information that prevents GDP from affecting performance directly, and interest rates which were not the primary reference for investors when investing in mutual funds.

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Corresponding Author:

Agung Anggoro Seto,

Department of Business Management,

Politeknik Negeri Sriwijaya,

Jalan Srijaya Negara Bukit Besar, Palembang, 30137, Indonesia.

Email: agung.anggoro.seto@polsri.ac.id

1. Introduction

In addition to funding decisions, investment decisions are among the crucial decisions in financial management. Investment decisions are based on the investor's commitment to invest a particular amount of funds in exchange for a future profit (Hartono, 2015; Tandelilin, 2010). Mutual funds are a popular form of investment among the general people.

Mutual funds are a collection of funds from several investors managed and reinvested by investment managers in various securities portfolios to generate returns (Purnamasari et al., n.d.; Sahri et al., 2015). Mutual funds based on their halal type are divided into two, namely sharia mutual funds and conventional mutual funds. Sharia mutual funds are mutual funds consisting of investment instruments that meet halal criteria such as being free from elements of usury, maysir, gambling and other things prohibited by Islam. Meanwhile, conventional mutual funds are mutual funds whose investment instruments are based on government regulations. In general, Islamic and conventional mutual funds are strongly influenced by macroeconomic conditions such as interest rates, inflation and gross domestic product (GDP), however several studies have found that Islamic mutual funds are slightly more resistant to the influence of macroeconomic conditions such as interest rates. This is due to the sharia mutual fund structure which is free from the use of interest rate (Adhi et al., 2021; Aryani et al., 2019; Mufidah et al., 2020; Wilujeng, 2019).

According to the Financial Services Authority data, there were 1920 conventional mutual funds and 273 Islamic mutual funds in Indonesia as of August 2022. The mutual fund industry peaked in 2020 when the number of conventional mutual funds reached 2,930, and the number of Islamic mutual funds reached 289. The decline in the number of conventional and Islamic mutual funds from the period of 2020 to the period of 2022 was allegedly caused by the concerns of confident investors regarding the decline in mutual fund performance, given that the covid-19 pandemic began to spread in 2020 and affected economic conditions in Indonesia. This is supported by research findings demonstrating mutual funds of various types decreased during the covid-19 pandemic (Aprilianti et al., 2022; Layuk et al., 2022; Pástor & Vorsatz, 2020; Wilujeng, 2019). However, other research indicates that during the covid-19 epidemic, mutual fund performance approached ideal levels and improved (Hanifah & Rahman, 2023; Hapsari, 2022; Komarudin et al., 2019; Rapini et al., 2021).

The performance of a mutual fund is a measure of the profit and risk opportunities obtained from investing in the fund (Seto et al., 2024). The performance of a mutual fund can be evaluated using net asset value, the Sharpe index, and the Treynor and Jensen indicators. An excellent mutual fund performs well in the sense that it can create significant returns with the lowest possible risk. However, achieving high performance requires effort, especially during a pandemic. According to some studies, many factors, including Inflation, interest rates, and gross domestic product, might affect the performance of mutual funds, including macroeconomic variables such as Inflation, interest rates, and gross domestic product. (GDP).

Inflation is a state characterised by increased prices; significant Inflation will affect market conditions and investment. When Inflation is significant, investors will be more careful with their investments (Dewi & Adri, 2022). In the meantime, interest rates represent the yield percentage on the financial security conditions of investment instruments such as mutual funds and equities (Saputri & Yudiantoro, 2022). The percentage of interest rates is crucial since it can affect the demand and supply levels. Interest rates that are excessively high would discourage investors from investing in investment instruments such as equities and mutual funds, thereby impacting the performance of mutual funds. Several studies on interest rates conclude that interest rates affect mutual fund performance (Saputri & Yudiantoro, 2022; Sasongko, 2022). Meanwhile, Gross Domestic Product (GDP) parameter a country's output of products and services over a certain period. A country's high GDP indirectly indicates the income and purchasing power of its population and households, which are similarly high; therefore, the possibility to participate in investment instruments will expand. Several research has also indicated that GDP affects mutual fund growth and performance (Febriyani et al., 2021; Silvi, 2021).

Investment activities will be successful when investors have excess funds from the allocated funds. However, when economic conditions are unstable due to the co-19 pandemic, a decline in macroeconomic indicators such as Inflation, interest rates, and GDP can impact investor interest in investing and the overall performance of investment instruments or mutual funds. This study investigates if macroeconomic variables such as Inflation, interest rates, and GDP impact the performance of conventional and Islamic mutual funds in Indonesia. The aim of this research is to find out in detail which macroeconomic variables influence the performance of sharia and conventional mutual funds in Indonesia and how much influence they have.

2. Research Method

This is an example of associative research, which seeks to determine the relationship between macroeconomic indicators, such as Inflation, interest rates, and GDP, and the performance of mutual funds in Indonesia. This study employs quantitative data. The population consisted of all registered Islamic and conventional mutual funds with the OJK. The sample size was 1,920 conventional mutual funds and 272 Islamic mutual funds. This research uses the total net asset value of sharia mutual funds and conventional mutual funds so that it represents the total net asset value of each mutual fund. The data source is secondary data from the ojk.go.id and bi.go.id websites, including inflation data, interest rates, GDP, and Net Asset Value (NAV) of mutual funds. The research was conducted between 2017 and 2021. The research period between 2017-2021 is considered relevant because this period reflects various economic situations, namely the good economic situation between 2017-2018 and the declining economic conditions due to the Covid-19 pandemic in 2019-2021. Documentation in the form of quarterly inflation statistics, interest rates, GDP, and NAV of Islamic and conventional mutual funds in Indonesia will be employed as data gathering methodologies.

This study employed a standard assumption test in the form of a normality test, autocorrelation test, and multicollinearity test. Simple and multiple linear regression tests were conducted to determine suppose Inflation, interest rates, and GDP affect the performance of conventional and Islamic mutual funds in

Indonesia. This study utilise Inflation, interest rates, and GDP as independent factors and mutual fund performance as a dependent variable. The operationalisation of variables in this study is demonstrated in Table 1. Below:

Table 1. Operationalisation of research variables

| No | Variable | Definition Operational | Indicator | Scale |
|----|-----------------------------|---|------------------------------|---------|
| 1 | Inflation | Factors leading to price increases | Consumer Price Index | Ratio |
| 2 | Interest Rate | Percentage yield on financial security standards for investment instruments in mutual funds | Bank Indonesia Interest Rate | Ratio |
| 3 | Gross Domestic Income (GDP) | Quantity of goods and services produced by a nation during a given time frame. | GDP by expenditure | Nominal |
| 4 | Mutual fund performance | The extent of the profit and risk opportunities for both conventional and Islamic mutual funds will be determined | Net Asset Value (NAV) | Ratio |

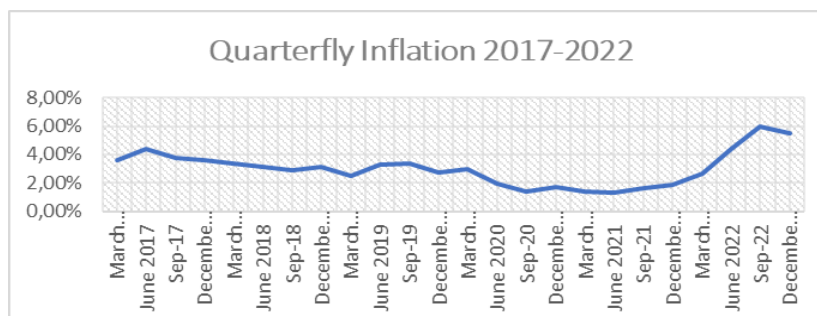
While this study's hypotheses include the following:

- 1) Ho = Partially, Inflation does not affect the performance of Islamic and conventional mutual funds in Indonesia.
Ha = The performance of Islamic and conventional mutual funds in Indonesia is partially affected by Inflation.
- 2) Ho = Interest rates have little impact on the performance of Islamic and conventional mutual funds in Indonesia.
Ha = Interest rates partially impact the performance of Islamic and conventional mutual funds in Indonesia.
- 3) Ho = The GDP does not affect the performance of conventional and Islamic mutual funds in Indonesia.
Ha = The performance of Islamic and conventional mutual funds in Indonesia is partially affected by the country's gross domestic product.
- 4) Ho = Inflation, interest rates, and GDP have no concurrent effect on the performance of Islamic and conventional mutual funds in Indonesia.
Ha = Inflation, interest rates, and GDP simultaneously affect the performance of Islamic and conventional mutual funds in Indonesia.

3. Result and Discussion

Description of Indonesia's Macroeconomic Conditions 2017-2022

Macroeconomic variables are factors that indicate the macroeconomic progress of a nation. This study employs three macroeconomic variables: Inflation, GDP, and the benchmark interest rate of the Bank of Indonesia (SBI). The evolution of Indonesia's macroeconomic factors from 2017 to 2022 is depicted in Figures 1 through 3.



Minimum

1,33%

Maximal

5,95%

Avarage

3,01%

St. Deviasi

1,23%



Figure 1. Progression of inflation, SBI, and GDP in Indonesia from 2017- 2022

According to Figure 1, Indonesia's average quarterly inflation rate for 2017-2022 is between 3.01% and 3.02%. The lowest Inflation rate occurred in the second quarter of 2021 (June 2021), whilst the highest rate, 5.95%, occurred in September 2022 or the third quarter of 2022. Economic conditions will likely improve when the epidemic begins to abate, resulting in low Inflation in the second quarter of 2021. Meanwhile, the highest rate of Inflation in the third quarter of 2022 resulted from the attitude towards the end of the year, when Inflation often rises. The most significant GDP was recorded in the fourth quarter of 2022, with a value of Rp.5,114,910 billion. On average, Indonesia's GDP was Rp.4,011,238 billion, with the lowest value coming in the first quarter of 2017 at Rp.3,221,172 billion.

Research Results

Classical Assumption Test

In this study, the autocorrelation test and the multicollinearity test are employed as standard assumption tests. The autocorrelation test ensures that the time series data utilised for all variables are not correlated across periods. This study used the Durbin-Watson autocorrelation test, where the DW test value for the effect of macroeconomic variables on the performance of conventional mutual funds is 1.548. This value, 1.548, surpasses the dL value (1.0131). $4 - 1.548 = 2.452$ is likewise more significant than the dU value (1.7753) when compared to it. In addition, the DW test findings for macroeconomic variables' effect on Islamic mutual funds' performance are 1.524. This value, 1.524, surpasses the dL value (1.0131). $4 - 1.524 = 2.476$ is also more significant than the dU number (1.7753) when compared to it. According to these findings, the data used in this investigation lack autocorrelation.

Table 1. Autocorrelation test results of macroeconomic variables on conventional mutual fund performance

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | ,358 ^a | ,128 | -,003 | ,1963274 | 1,548 |

a. Predictors: (Constant), Log_PDB, Inflation, SBI

b. Dependent Variable: NAB_Konvens

Table 2. Autocorrelation test results of macroeconomic variables on islamic mutual fund performance

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate | Durbin-Watson |
|-------|-------------------|----------|-------------------|----------------------------|---------------|
| 1 | ,339 ^a | ,115 | -,018 | ,1978187 | 1,524 |

a. Predictors: (Constant), Log_PDB, Inflation, SBI

b. Dependent Variable: NAB_Syariah

The multicollinearity test is another basic assumption test used before the regression test to answer the hypothesis. The multicollinearity test is used to check that there is not a high degree of linearity between the independent variables. Based on the test findings, the following conclusions can be drawn:

Table 3. Macroeconomic variable multicollinearity test results

| Model | Collinearity Statistics | |
|------------|-------------------------|-------|
| | Tolerance | VIF |
| (Constant) | | |
| 1 SBI | ,774 | 1,292 |
| Inflation | ,775 | 1,291 |
| Log_PDB | ,831 | 1,204 |

a. Dependent Variable: NAB_Konvens

Table 3 reveals that the tolerance value of all independent variables is <1 and the VIF <10 value is less than ten, indicating that there are no multicollinearity symptoms in the variables employed.

Hypothesis Test

To address the problem formulation, hypothesis testing is conducted. In this study, hypotheses are tested using multiple linear regression tests. The following are the outcomes of SPSS-based multiple linear regression tests.

Table 4. Hypothesis test of the effect of GDP, inflation and SBI on the NAV of conventional mutual funds simultaneously

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|----------------|----|-------------|------|-------------------|
| 1 Regression | ,113 | 3 | ,038 | ,977 | ,423 ^b |
| Residual | ,771 | 20 | ,039 | | |
| Total | ,884 | 23 | | | |

a. Dependent Variable: NAB_Konvens

b. Predictors: (Constant), Log_PDB, Inflation, SBI

Table 5. Hypothesis test of the effect of GDP, inflation and SBI on the NAV of conventional mutual funds partially

| Model | Unstandardized Coefficients | | Standardized Coefficients | T | Sig. | Collinearity Statistics |
|------------|-----------------------------|------------|---------------------------|--------|------|-------------------------|
| | B | Std. Error | Beta | | | Tolerance |
| (Constant) | 7,630 | 5,628 | | 1,356 | ,190 | |
| 1 SBI | ,007 | ,053 | ,031 | ,130 | ,898 | ,774 |
| Inflasi | ,036 | ,038 | ,225 | ,949 | ,354 | ,775 |
| Log_PDB | -1,168 | ,846 | -,316 | -1,381 | ,182 | ,831 |

According to the findings of multiple linear regression tests, the sig value of $0.423 > 0.05$ indicates that the GDP, Inflation, and SBI variables have no significant impact on the NAV-based performance of Indonesian mutual funds. In addition, partial testing is performed if the significance value of the three independent variables (SBI, Inflation, and GDP) is more than > 0.05 . This indicates that SBI, Inflation, and PBD have no effect on the NAV-based performance of mutual funds in Indonesia.

In addition to examining the impact of independent variables on the performance of conventional mutual funds, this study examines the impact of independent variables on the performance of Islamic mutual funds. The results of testing the impact of SBI, Inflation, and GDP on the performance of Islamic mutual funds are provided below.

Table 6. Hypothesis test of the effect of GDP, inflation and SBI on the NAV of islamic mutual funds simultaneously

| Model | Sum of Squares | Df | Mean Square | F | Sig. |
|--------------|----------------|----|-------------|------|-------------------|
| 1 Regression | ,101 | 3 | ,034 | ,864 | ,476 ^b |
| Residual | ,783 | 20 | ,039 | | |
| Total | ,884 | 23 | | | |

a. Dependent Variable: NAB_Syariah

b. Predictors: (Constant), Log_PDB, Inflation, SBI

Table 7. Hypothesis test of the effect of GDP, inflation and SBI on the NAV of islamic mutual funds partially

| Model | | Unstandardized Coefficients | | Standardized | T | Sig. | Collinearity |
|-------|------------|-----------------------------|------------|--------------|--------|------|--------------|
| | | B | Std. Error | Coefficients | | | Statistics |
| 1 | (Constant) | 7,086 | 5,671 | | 1,250 | ,226 | |
| | SBI | ,008 | ,053 | ,038 | ,159 | ,875 | ,774 |
| | Inflasi | ,034 | ,038 | ,213 | ,889 | ,384 | ,775 |
| | Log_PDB | -1,086 | ,852 | -,294 | -1,275 | ,217 | ,831 |

According to the findings of multiple linear regression tests, the sig value of 0.476 > 0.05 indicates that SBI, Inflation, and GDP do not affect the NAV-based performance of Islamic mutual funds. While also obtaining significance values of 0.877 for SBI, 0.384 for Inflation, and 0.217 for GDP, or all have significance values more than > 0.05. This indicates that SBI, Inflation, and GDP have little effect on the performance of Islamic mutual funds in Indonesia.

Discussion

The Effect of Inflation on the Performance of Islamic and Conventional Mutual Funds in Indonesia

Inflation is the persistent increase in commodity prices over time. Inflation will cause prices to tend to be high, which will affect spending or consumption, hence decreasing the propensity to save money. According to the results of the study, the significance value of Inflation on the performance of conventional mutual funds is 0.354, and on the performance of Islamic mutual funds is 0.384, or all of them are above the significance level of 0.05, indicating that Inflation has no significant effect on the performance of conventional and Islamic mutual funds in Indonesia.

In Indonesia, Inflation has a considerable impact on the performance of both conventional and Islamic mutual funds, according to prior research. Nevertheless, the results of this study contradict such findings. (Dewi & Adri, 2022; Febriyani et al., 2021; Hermawan et al., 2016; Saputri & Yudiantoro, 2022; Utami et al., 2016). Nonetheless, the findings of this analysis are consistent with those of other studies (Miha & Laila, 2016; Setiawan & Qudziyah, 2021), which conclude that there is no substantial relationship between Inflation and the performance of both Islamic and conventional mutual funds in Indonesia.

The absence of a significant relationship between Inflation and the performance of mutual funds, particularly Islamic mutual funds, is since in Islamic economics, which is the foundation of Islamic mutual funds, the term inflation does not exist, and the circulation of money is instead governed by instruments such as infaq, alms, and zakat. Inflation will have no effect if these three tools, in the shape of infaq, alms, and zakat, remain consistent (Miha & Laila, 2016). In addition, Islamic mutual funds that adhere to the profit-sharing structure are typically uninterested in bank interest, which is a tool for monetary and Inflation control. Hence, neither Inflation nor bank rates will affect the interest of Islamic mutual fund investors (Ilyas & Shofawati, 2020; Setiawan & Qudziyah, 2021).

On the side of conventional mutual funds, the lack of a significant effect of Inflation is due to the nature of mutual fund investment, which has medium and long-term investment characteristics, so Inflation, particularly short-term Inflation and mild Inflation (below 10 per cent) that occurs in this study, does not significantly affect mutual fund performance. In addition, the lack of an effect of Inflation on the performance of conventional and Islamic mutual funds is believed to be a result of investor confidence to continue using mutual funds as an investment vehicle, as evidenced by the continued growth in the number of conventional and Islamic mutual funds during the 2017-2022 research period, despite the pandemic.

The Effect of Interest Rates on the Performance of Islamic and Conventional Mutual Funds in Indonesia

Interest rates are the yield percentage on financial security requirements for investment instruments in mutual funds. This study utilises Bank Indonesia's interest rates for its interest rates. According to the test results, interest rates have no effect on the performance of both Islamic and conventional mutual funds, with significant values between 0.875% and 0.898%. This study's findings contradict the findings of several earlier research, which concluded that interest rates affect the performance of Islamic and conventional mutual funds in Indonesia (Dewi & Adri, 2022; Febriyani et al., 2021; Hermawan et al., 2016; Ilyas & Shofawati, 2020; Layuk et al., 2022). However, this result is consistent with earlier research indicating that interest rates have no substantial impact on the performance of both conventional and Islamic mutual funds in Indonesia (Miha & Laila, 2016; Utami et al., 2016).

The absence of a significant effect between interest rates and the performance of Islamic and conventional mutual funds in Indonesia is due to, first, the same thing as the inflation variable in Islamic economics, which is a reference for Islamic mutual funds; there is no general term of interest rates where

investment profits are obtained from profit sharing, i.e., the objective of investors in Islamic mutual funds is to receive profit sharing on their investments (Aryani et al., 2019). On the side of conventional mutual funds, the absence of an effect of interest rates on performance is due to the structure and capitalisation of existing conventional mutual funds, which are dominated by non-money market mutual funds such as stock mutual funds. As a result, the rise and fall of bank interest rates will have little impact on the overall performance of conventional mutual funds, as most conventional mutual funds invest in non-money market securities. Moreover, it is considered that bank interest rates only affect conventional money market mutual funds whose components are directly tied to bank interest rates (deposits, securities, and debt securities).

The Effect of GDP on the Performance of Islamic and Conventional Mutual Funds in Indonesia

Gross domestic product (GDP) is the total goods and services a nation generates within a specified period. The test results indicate that the GDP has no short-term effect on the performance of Islamic and conventional mutual funds in Indonesia, with significant values of 0.217 and 0.182, respectively. The significance value exceeds the significance threshold of 0.05. Contrary to the findings of several earlier research, which concluded that the GDP affects the performance of both Islamic and conventional mutual funds, our findings indicate that this is not the case (Erlitha et al., 2018; Faisal & Wiliasih, 2022; Khusna et al., 2023; Marlyn, 2021; Nurdianti, 2010; Rahadian, 2013). However, this study's findings are consistent with those of a study indicating that GDP has no substantial effect on the performance of Islamic and conventional mutual funds (Febriyani et al., 2021)..

The negligible impact of GDP on the performance of conventional and Islamic mutual funds results from investors' inadequate understanding of the components of mutual funds and mutual funds themselves (Zikrullah, 2006). Investment managers handle most mutual funds in Indonesia, and investors obtain their information primarily through investment managers and print and internet media. Only some investors are familiar with mutual fund investment and its products. This lack of information and understanding is why, regardless of how high or low GDP is represented in people's income, it will not substantially impact the interest, growth, and performance of mutual funds. The number of banking sectors in Indonesia that sell mutual fund products, particularly money market mutual funds comprised of bonds and deposits, is another reason why the GDP only dramatically affects the performance of mutual funds. The marketing of mutual funds by the banking sector is excellent in terms of marketing, but marketing by banks also has a negative impact, namely increasing the cost of the mutual fund itself; this cost increase is a result of the cooperation agreement between investment managers and banks, which stipulates that investment managers will pay a portion of the fee for the sale of mutual funds by banks. This increase in fees from investment managers to banks undoubtedly diminishes the return performance that investment managers will provide to investors, indirectly reducing the desirability of mutual fund vehicles.

The Effect of Inflation, Interest Rates and GDP on the Performance of Islamic and Conventional Mutual Funds in Indonesia

Multiple linear regression tests reveal that the significance value for Islamic mutual funds is 0.476%, while for conventional mutual funds, it is 0.423%. The significance value exceeds the significance level of 0.05, indicating that Inflation, interest rates, and GDP do not affect the performance of Islamic and conventional mutual funds in Indonesia.

4. Conclusion

The findings of multiple linear regression tests indicated that macroeconomic variables such as Inflation, interest rates, and GDP did not significant effect on the partial and simultaneous performance of Islamic and conventional mutual funds in Indonesia. The absence of effect of macroeconomic indicators could be attributed to several factors, including low Inflation, limited investor information that prevents GDP from affecting performance directly, and interest rates which were not the primary reference for investors when investing in mutual funds. This research has several limitations, including only analyzing the influence of macroeconomic factors (inflation, GDP and interest rate) on the performance of sharia and conventional mutual funds, but this research cannot be used to generalize the influence of macroeconomics on each type of mutual fund (money market mutual funds, stock mutual funds, mixed mutual funds etc.). Apart from that, this research also does not discuss in more depth the differences in the characteristics of sharia and conventional mutual funds.

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