The Effect Of Macroeconomics And Jsec On Mutual Fund Nav During The Pandemic

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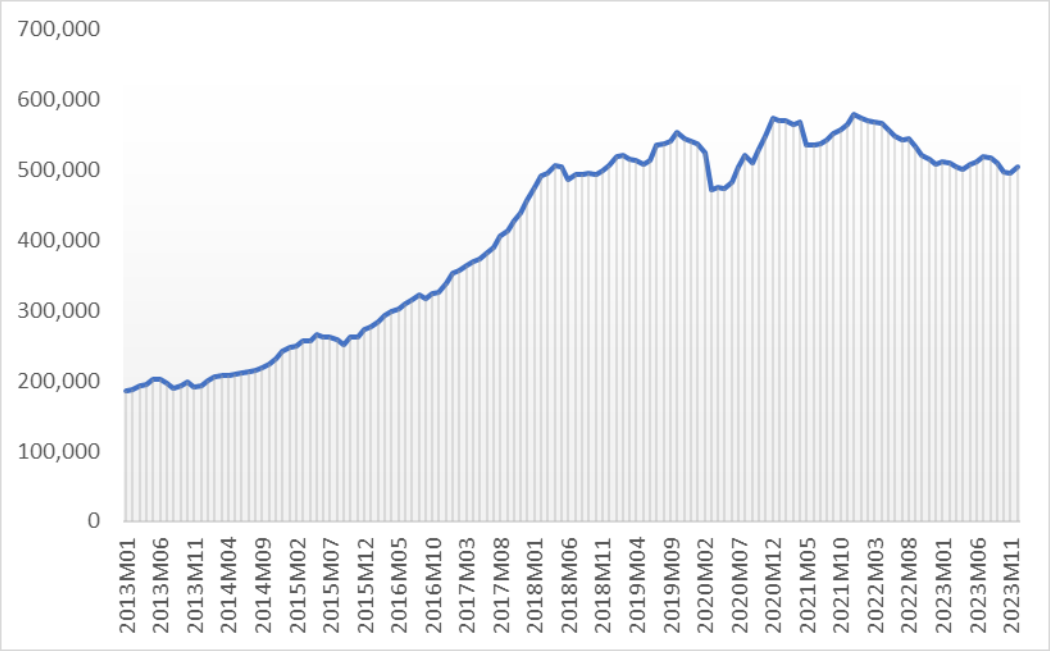
Abstract
The purpose of this study was to estimate the effect of gold prices, exchange rates, inflation, interest rates, and the Jakarta Stock Exchange Composite (JSEC) on mutual funds in Indonesia in 2020-2023 in the short term and long term using multiple linear regression with the Partial Adjustment Model (PAM) approach. Based on the regression results, it was found that in the short and long term, gold prices and inflation had no effect on the NAV of mutual funds in Indonesia in 2020-2023, while exchange rates and interest rates had a negative effect, and JSEC had a positive effect on the NAV of mutual funds in Indonesia. The government as a policy holder is expected to help increase capital market investment in Indonesia. One of the efforts that can be made is by making policies that can improve financial literacy in Indonesia and encourage financial inclusion, in order to support economic growth in Indonesia. In addition to the government, Bank Indonesia is expected to be able to control inflation rates, interest rates, and exchange rates so that the economy in Indonesia is more stable so that it can attract investors from abroad. On the other hand, investors are expected to always be wise in choosing investment instruments and always pay attention to the risks that arise when investing.

Keywords: NAV; JSEC; Inflation; Interest Rate; Gold; Exchange Rate

1. Introduction

Indonesia is one of the most populous countries in the world with 275.77 million people by mid-2023. With such a large population, Indonesia needs large funds to support its economic growth (Nurcholis et al., 2024). The capital market is one of the alternatives to answer this problem. According to Untono (2015), the capital market for the government acts as a means of driving the economy and economic development. On the other hand, for companies, the capital market serves to find capital, and for the public, the capital market is an alternative investment place. One type of capital market instrument that has the capacity to support all of these things is mutual funds. Mutual funds work with a mechanism where investors entrust funds to professional managers who will then be managed into various investment instruments (Nugraha et al., 2023).

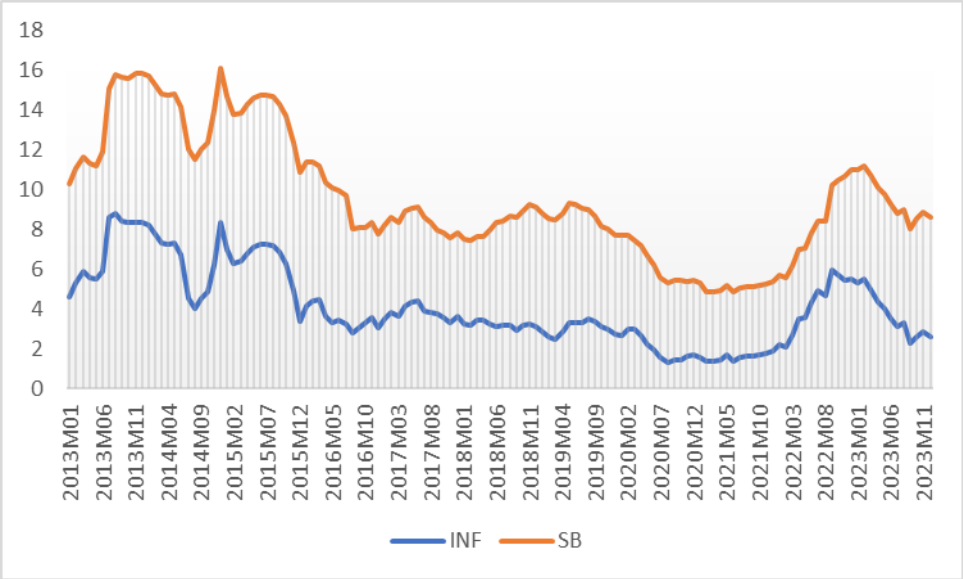


Graph 1. Mutual fund NAV in Indonesia 2013-2023 (Billion Rupiah)
Source: Financial Services Authority (OJK)

Based on Graph 1, the number of mutual funds**.** The Net Asset Value (NAV) of mutual funds in Indonesia in 2013-2023 tends to increase in the long term, despite fluctuations in the short term. This indicates the high interest of the Indonesian people to invest in mutual funds. This trend is due to the fact that Indonesians are starting to look for stable and efficient investments with low risk (Yunus et al., 2021). Short-term fluctuations occurred in early 2020 to early 2022 due to the Covid-19 pandemic that hit the world. Global economic conditions are also one of the triggers for fluctuations in mutual fund performance in the capital market (Adnan, 2023).

According to Karim et al. (2016) and Ardhani et al. (2020), Good investment conditions are supported by many factors, and one of them is macroeconomic conditions, because the macro

economy will affect the amount of investor returns. Changes in macroeconomic variables such as inflation and interest rates can affect the capital market, especially mutual funds. The higher the inflation, the higher the cost required to invest, and vice versa (Hartati et al., 2021). In addition, changing interest rates can affect investor behavior in investment management.



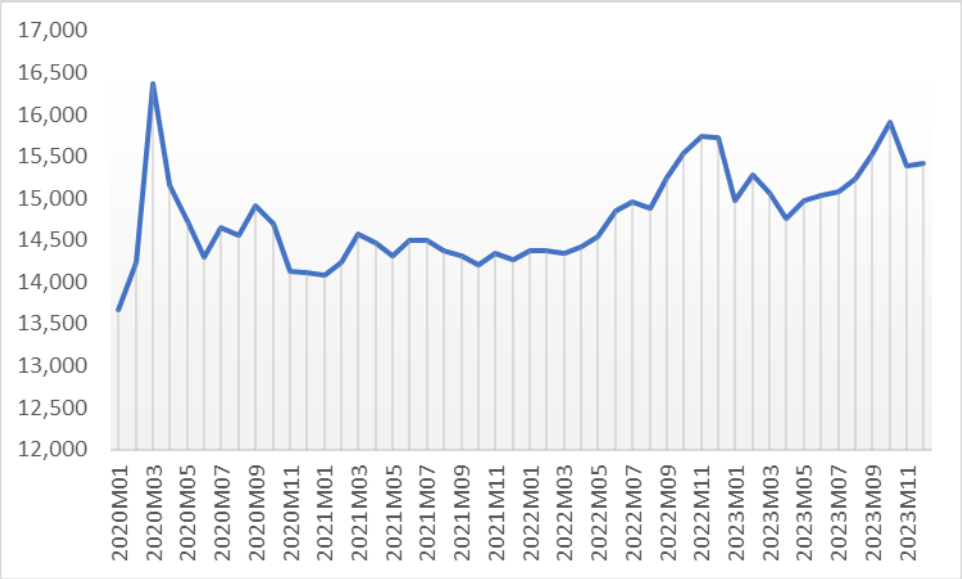
Graph 2. Inflation and Interest Rate in Indonesia 2013-2023 (Percent)
Source: Bank Indonesia (BI) and Central Bureau of Statistics (BPS)

Graph 2 shows that inflation and interest rates in Indonesia are always directly proportional because the relationship between the two is related to monetary policy. When viewed in the long term, inflation and interest rates from 2013-2023 tend to fall, but there is a sudden increase in 2020-2023 due to the Covid-19 pandemic. High inflation will reduce the total *real return* on investment received from investing assets in mutual funds (Fitriyani et al., 2020). This results in investors preferring investment assets that have high *returns* such as stocks or *crypto*. According to Kurniasih & Johannes (2015), interest rates will affect people's investment decisions, because if interest rates are low, people will prefer investment instruments outside the money market, such as mutual funds, so that a decrease in interest rates can increase mutual fund managed funds.

Another monetary variable besides inflation and interest rates that can affect mutual funds is the exchange rate. Fluctuating exchange rates will make foreign investors feel worried about investing their funds in the Indonesian capital market, because exchange rates will affect production costs which can have a direct impact on the Indonesian economy (Ilyas & Shofawati, 2019). On the other hand, according to Azalia & Budhijana (2023), a more stable exchange rate will make foreign investors more confident in the capital market in Indonesia.

Graph 3 shows a significant increase in exchange rates in early 2020 from 13,550 and almost touched 16,500 due to the Covid-19 pandemic announced by WHO to be a global pandemic in March 2020. Investors choose to buy dollars whose value is more stable than the rupiah, and sell

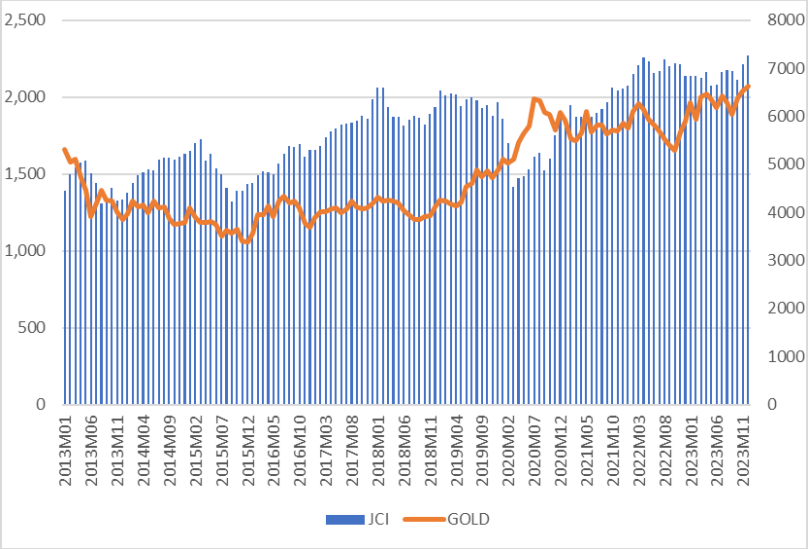
their assets in the capital market, resulting in the capital market experiencing a decline, one of which is mutual funds (Mochlasin et al., 2023).



Graph 3. Exchange Rate of Rupiah against US Dollar in 2020-2023 (rupiah)
Source: satudata.kemendag.go.id

In addition to monetary variables, other macroeconomic factors such as the Jakarta Stock Exchange Composite (JSEC) and gold commodity prices can affect mutual fund NAV. According to Putri & Noor (2023), the JSEC value will affect mutual fund NAV because most of the assets managed by mutual fund investment managers are stocks, so the turmoil on stocks will affect the amount of funds under management of mutual fund companies. Meanwhile, changes in gold prices will affect investor psychology. Gold is considered an asset whose value is more stable in the long run, so if the price of gold rises, investors will be more interested in buying gold so that they will sell their assets in the capital market.

Based on Figure 4, it can be seen that the price of gold and the value of JSEC experience the same trend in the long term, but have values that tend to be reversed in the short term. This means that investors in Indonesia tend to buy gold when gold prices rise and sell their assets in the capital market which causes the JSEC to fall (Andiyasa et al., 2014). Because the JSEC can affect the value of mutual funds, if the JSEC falls, the value of mutual funds will also fall, and vice versa.



Composite Stock Price Index and Gold Price (dollars) 2013-2023
Source: Yahoo Finance & id.investing

The capital market is very important to help build the economy in Indonesia, so the development of the capital market needs to be considered. Some factors that affect the capital market are inflation, interest rates, exchange rates, JSEC, and gold prices. Therefore, this study aims to estimate the effect of macroeconomic variables represented by inflation, interest rates, exchange rates, JSEC, and gold prices on mutual funds in Indonesia every month from 2020-2023.

2. Literature Review

2.1. Net asset value of mutual fund

According to the capital market law No. 8 of 1995, article 1 paragraph (27) defines mutual funds as a forum for the public to entrust funds to professional investment managers which will then be rotated in a portfolio of securities (deposits, bonds, stocks, etc.). The total of mutual fund managed funds is commonly referred to as mutual fund NAV. Meanwhile, according to Putri & Noor (2023), mutual fund NAV is the original price of the mutual fund portfolio, where the calculation is the fair price after deducting liabilities, then divided by the number of participation units owned by investors.

2.2. The Relationship between gold price and mutual funds

The world gold price can affect the investment interest of the Indonesian people because gold itself is considered a safer asset and is better known by the Indonesian people. So, if there is an increase in the price of gold, it will make the capital market go down, because Indonesians prefer to invest in assets that they consider safer. Previous research has shown that gold prices can have a significant effect on investment instruments such as mutual funds. According to Adnan (2023), the world gold price has a negative influence on mutual fund NAV. Therefore, investment managers are expected to consider changes in gold prices as one of the factors that can affect managed portfolios in the capital market.

2.3. The Relationship between exchange rate and NAV of mutual funds

Fluctuations in exchange rates can affect the movement of capital markets, such as mutual funds. Fluctuations that are too massive will make investors from abroad hesitate to invest their assets in the country because investors think that exchange rate fluctuations can have a direct impact on the country's economy. Research found by Azalia & Budhijana (2023), also found that a stable exchange rate makes investors more confident in the capital market in Indonesia.

2.4. The Relationship between inflation and NAV of mutual funds

Inflation can affect people's consumption and investment decisions. High inflation will make the value of wealth of people with fixed incomes fall. To get out of this problem, people will tend to reduce consumption to save expenses and increase investment to increase their income. Saputri & Yudiantoro (2022), also found that people prefer to keep their money by buying mutual funds rather than holding cash whose real value decreases as inflation increases.

2.5. The Relationship between interest rate and NAV of mutual funds

Interest rates can directly affect the performance of mutual funds. Rising interest rates will make coupons obtained from several mutual fund portfolios such as bonds and deposits also increase. When interest rates increase, people will also start looking at money market mutual funds that benefit when interest rates rise (Azalia & Budhijana, 2023). So that an increase in interest rates can make NAV go up.

2.6. The Relationship between JSEC and NAV mutual funds

JSEC can be seen as one of the drivers of mutual fund NAV. This is because stocks form the basis of equity mutual funds and mixed mutual funds. Previous research also shows that the JSEC will be aligned with the increase and decrease in mutual fund NAV. Kurniasih & Johannes (2015), found that an increase in the JSEC indicates that stocks are in demand in the market. This increase also reflects that the company's performance is improving so that it has the potential to earn more income (Nafisah, 2022). In other words, an increase in stock performance will increase the JSEC which causes mutual fund NAV to increase.

Research Hypothesis

From the theoretical basis, previous research that has been described above, the hypothesis in this study is as follows:

H_1: Gold price, exchange rate, inflation, interest rate, and JSEC jointly affect the performance of mutual fund NAV.

H_2: The price of gold in the long and short term has a negative effect on the NAV of mutual funds

H_3: Exchange rates in the long and short term have a negative effect on the NAV of mutual funds

H_4: Inflation in the long and short term has a positive effect on mutual fund NAV

H_5: Interest rates in the long and short term have a positive effect on the NAV of mutual funds

H_6: JSEC in the long and short term has a positive effect on mutual fund NAV

3. Materials and Method

3.1. Data Collection Technique

This research is a quantitative study that uses secondary data in the form of monthly *time series* from January 2020 to December 2023. The data used is obtained from government institutions, namely the Financial Services Authority (OJK), Ministry of Trade (Kemendag), and the Central Statistics Agency (BPS), as well as private institutions, such as id.investing and Yahoo Finance. For PAM to be valid, the coefficient NAV_{t-1} must lie between zero and one and must be statistically significant.

3.2. Data Analysis Technique

This study uses multiple linear regression method with Partial Adjustment Model (PAM) analysis tool, which assumes the existence of a long-term equilibrium relationship of two or more variables. However, in the short term, what happens is an imbalance (Gujarati & Porter, 2013).

3.3. Data Model Analysis

The general form of the PAM model that formulates the long-run relationship is as follows:

$$Y_t^* = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_t$$

The long-term regression equation in this study is:

$$logNAV_t = \beta_0 + \beta_1 logGOLD_t + \beta_2 logKURS_t + \beta_3 INF_t + \beta_4 SB_t + \beta_5 JSEC_t + \varepsilon_t$$

The adjustment behavior of partial PAM is formulated with the following equation:

$$NAV_t - NAV_{t-1} = \delta(NAV_t - NAV_{t-1})$$

By substituting the long-term equation into the adjustment equation, the short-term equation will be derived as follows:

$$Y_t - Y_{t-1} = \delta(Y_t^* - Y_{t-1})$$
$$Y_t - Y_{t-1} = \delta Y_t^* - \delta Y_{t-1}$$
$$Y_t = \delta Y_t^* - \delta Y_{t-1} + Y_{t-1}$$
$$Y_t = \delta Y_t^* + (1-\delta) Y_{t-1}$$
$$Y_t = \delta(\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \varepsilon_t) + (1-\delta) Y_{t-1}$$
$$Y_t = \delta\beta_0 + \delta\beta_1 X_1 + \delta\beta_2 X_2 + \delta\varepsilon_t + (1-\delta) Y_{t-1}$$
$$Y_t = \delta\beta_0 + \delta\beta_1 X_1 + \delta\beta_2 X_2 + (1-\delta) Y_{t-1} + \delta\varepsilon_t$$

Thus, the following short-term equation is obtained:

$$logNAV_t = \delta\beta_0 + \delta\beta_1 logGOLD_t + \delta\beta_2 logKURS_t + \delta\beta_3 INF_t + \delta\beta_4 SB_t + \delta\beta_5 JSEC_t + (1-\delta) logNAV_{t-1} + \varepsilon_t$$

Description:

NAV	Net asset value of mutual funds (rupiah)
GOLD	Gold price (dollars)
KURS	Rupiah exchange rate (IDR)
INF	Inflation (percent)
SB	Interest rate (percent)
JSEC	Jakarta Stock Exchange Composite
log	Logarithms
δ	Adjustment coefficient
β_0	Constant
$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$	Independent variable coefficient
$1 - \delta$	Previous period *NAV* coefficient
t	Period
v	Residuals

3.4. Classical Assumption Test And Model Feasibility Test

3.4.1. Classical Asssumtion Test

This study will also test whether the regression model meets the Gauss-Markov assumptions, which include residual normality (Jarque-Bera Test), homoskedasticity residuals (White Test), and no autocorrelation (Breusch-Godfrey Test). In addition, the Variance Inflation Factors (VIF) of each independent variable will also be examined to determine whether multicollinearity occurs.

3.4.1. Model Feasibility Test

In addition to the above test, it is also necessary to conduct an *F* test to determine whether there is an influence of the independent variables together on the dependent variable. H_0 in the *F* test is that gold prices, exchange rates, inflation, interest rates, and the composite stock price index together have no effect on the net asset value of mutual funds. H_0 will be rejected if the probability of the F-statistic < α.

Then, the *t* test also needs to be done to find out whether the independent variables individually have a real effect on the dependent variable. H_0 *t* test states that each independent variable has no effect on the net asset value of mutual funds ($\delta\beta_i = 0$, where i = 1-5). H_a states that $\delta\beta_j > 0$, where j = 3-5, which means inflation, interest rates and JSEC each have a positive

effect on mutual fund NAV. Meanwhile, $\delta\beta_k > 0$, where $k = 1$ and 2, which means that gold prices and exchange rates each have a negative effect on mutual fund NAV.

4. Result

To estimate the effect of gold prices, exchange rates, inflation, interest rates, and JSEC on the NAV of mutual funds in Indonesia on a monthly basis from 2020 to 2023, this study uses the *Partial Adjustment Model* (PAM) technique. The PAM estimation results along with the Gauss-Markov assumption test are summarized in Table 1.

Table 1. Partial Adjustment Model Test

$$LogNAV_t = \underset{}{19{,}1709} + \underset{(0{,}1405)}{0{,}0351 logGOLD_t} - \underset{(0{,}0000)*}{0{,}4910 logKURS_t} - \underset{(0{,}2008)}{0{,}0029 INF_t}$$

$$- \underset{(0{,}0127)**}{0{,}0097 SB_t} + \underset{(0{,}002)*}{0{,}000019 JSEC_t} + \underset{(0{,}00)*}{0{,}5636 logNAV_{t-1}}$$

R^2 = 0,922; DW-Stat = 1,380; F-Stat = 105,275; Sig. F-Stat = 0,0000

Diagnosis Test

(1) Multikolinieritas (VIF)

logGOLD = 2,2152; *logKURS* = 2,1016*; INF* = 2,2517; *SB* = 3,6879; *JSEC* = 2,9151; *logNAV*(-1) = 3,4925

(2) Normalitas (Uji Jarque-Bera)

JB(2) = 4,8023; Sig. JB(2) = 0,0906

(3) Autokorelasi (Uji Breusch-Godfrey)

$\chi^2(4)$ = 10,195; Sig. $\chi^2(4)$ = 0,0539

(4) Heteroskedastisitas (Uji White)

$\chi^2(23)$ = 24,42472 Sig. $\chi^2(23)$ = 0,3806

Source: OJK, BI, BPS, Kemendag, Yahoo Finance, and Id.Investing, processed

Notes: *Significant at α = 0.01; **Significant at α = 0.05

Constant and Long-Term Efficient

Based on Table 1, it can be seen that the regression coefficient value of the previous year's NAV (1 - δ) is 0.56366; so δ = 1 - 0.56366 and the result is 0.43634 or 43.634%. Then, 1 - δ is proven to be real because the t-statistic probability is less than 0.05. Thus, the validity requirement of PAM is fulfilled, so this research model can represent the existence of short-term and long-term theoretical relationships between the dependent variable and the independent variable. The adjustment of mutual fund net asset value in one period is 43.636%, so the adjustment of mutual fund net asset value towards the desired level of mutual fund net asset value is relatively fast.

$1 - \delta = 0{,}56366$

$\delta = 1 - 0{,}56366 = 0{,}43634$

1) $\alpha_0 = \delta\beta_0$

$19{,}1709 = 0{,}43634\beta_0$

$\beta_0 = \frac{\delta\beta_0}{\delta} = \frac{19{,}1709}{0{,}43634} = 43{,}9357$

2) $\alpha_1 = \delta\beta_1$

$0{,}03511 = 0{,}43634\beta_0$

$\beta_1 = \frac{\delta\beta_1}{\delta} = \frac{0{,}03511}{0{,}43634} = 0{,}0804$

3) $\alpha_2 = \delta\beta_2$

$-0{,}4910 = 0{,}43634\beta_1$

$\beta_2 = \frac{\delta\beta_2}{\delta} = \frac{-0{,}4910}{0{,}43634} = -1{,}1253$

4) $\alpha_3 = \delta\beta_3$

$-0{,}0029 = 0{,}43634\beta_3$

$\beta_3 = \frac{\delta\beta_3}{\delta} = \frac{-0.0029}{0{,}43634} = -0{,}0068$

5) $\alpha_4 = \delta\beta_4$

$-0{,}0097 = 0{,}43634\beta_4$

$\beta_4 = \frac{\delta\beta_4}{\delta} = \frac{-0{,}0097}{0{,}43634} = -0{,}0222$

6) $\alpha_5 = \delta\beta_5$

$0{,}0000281 = 0{,}43634\beta_5$

$\beta_5 = \frac{\delta\beta_5}{\delta} = \frac{0.000019}{0{,}43634} = 0{,}000044$

From the calculation of constants and coefficients, the long-run estimator model is obtained as follows:

$$logNAV_t = 43{,}9357 + 0{,}0804logGOLD_t - 1{,}1253log\text{KURS}_t - 0{,}0068INF_t - 0{,}0222SB_t + 0{,}000044\text{JSEC}_t$$

Classical Assumption Test

- **Normality Test (Jarque-Bera)**
  The Jarque-Bera (JB) test results show the probability of the JB statistic of 0.0906 which means more than α 5% or 0.05; so the residuals are normally distributed.
- **Autocorrelation Test (Breuch-Godfrey)**
  Then, the statistical probability χ^2 on the Breusch-Godfrey (BG) Test is 0.0539 which means that there is no autocorrelation problem at α 5% or 0.05.
- **Heteroscedasticity Test (White Test)**
  White's test is 0.3806 which means that the residuals are homoscedastic at α 5% or 0.05.
- **VIF Test**

It can be seen that all independent variables have Variance Inflation Factors (VIF) that are less than 10, so it can be said that there are no serious symptoms of multicollinearity.

F test

The F test results in an F-statistic probability of 0.000 which means less than α 0.05; this means that Hypothesis 1 is accepted so that together, gold prices, exchange rates, inflation, interest rates, and JSEC have an effect on mutual fund NAV.

R-Square Test

The coefficient of determination (R2) of 0.922 means that 92.2% of the variation in mutual fund NAV is caused by variations in gold prices, exchange rates, inflation, interest rates, and JSEC, while the other 7.78% is caused by variations in variables outside the model.

t-Test

Table 2. The t-test

Variables	Coefficient	Sig. *t*	Description	Conclusion
logGOLD	$\delta\beta_1 = 0{,}0351$	0,1405	$\alpha = 0{,}05$	$\delta\beta_1$ not significant
logKURS	$\delta\beta_2 = -0{,}4910$	0,0000	$\alpha = 0{,}05$	$\delta\beta_2$ significant
INF	$\delta\beta_3 = -0{,}0029$	0,2008	$\alpha = 0{,}05$	$\delta\beta_3$ not significant
SB	$\delta\beta_4 = -0{,}0097$	0,0127	$\alpha = 0{,}05$	$\delta\beta_4$ significant
JSEC	$\delta\beta_5 = 0{,}000019$	0,002	$\alpha = 0{,}05$	$\delta\beta_5$ significant

Based on Table 2, it is known that the variables that have a real effect on mutual fund NAV are exchange rates, interest rates, and JSEC, while gold prices and inflation have no effect. Based on Tables 1 and 2, it is evident that exchange rates and interest rates have a negative effect on mutual fund NAV, while JSEC has a positive effect on mutual fund NAV. On the other hand, gold prices and inflation have no effect. Thus, the coefficients of exchange rate ($\delta\beta_2$), interest rate ($\delta\beta_4$), and JSEC ($\delta\beta_5$) can be interpreted, while the coefficients of gold price $(\delta\beta)_1$ and inflation $(\delta\beta)_3$ do not need to be interpreted because they are not significant.

Short-term and long-term interpretation

The coefficient of exchange rate in the short term and long term is 0.491 and 1.1253. This means that a 1% increase in the exchange rate will reduce the mutual fund NAV by 0.491% in the short term and 1.1253% in the long term. Interest rates have coefficients of 0.0097 and 0.0222. This means that if interest rates increase by 1%, the mutual fund NAV will decrease by 0.97% in the short term and 2.22% in the long term. Then, the JSEC coefficient in the short and long term is 0.000019 and 0.000044. This means that if the JSEC increases by 1 point, the mutual fund NAV will increase by 0.0019% in the short term and 0.0044% in the long term.

5. Discussion

Based on the regression results, it is known that gold has no effect on mutual fund NAV in the short term or in the long term, so it is not in accordance with the hypothesis. Based on Table 3, it appears that there are no mutual funds in Indonesia that specifically invest in global commodities, such as gold. This is an indication that investment managers in Indonesia are still not looking at global commodities, such as gold, as one of the investment instruments as part of asset diversification.

Table 3. Mutual fund composition by type (percent)

Types of mutual funds	January 2020	January 2021	January 2022	January 2023
Equity Fund	23,60	21,64	22,99	21,58
Exchange Traded Fund	2,62	2,64	2,68	2,80
Fixed Income Fund	22,86	24,04	26,89	27,96
Global Fund	1,31	2,08	3,41	2,71
Index Fund	1,66	1,75	1,58	2,61
Mixed Asset Fund	5,45	4,57	4,56	4,52
Money Market Fund	14,10	17,71	19,61	17,29
Sukuk	0,19	0,34	0,49	1,00
Capital Protected Fund	28,21	25,24	17,80	19,54

Source: OJK

The results of this study are in line with the findings of Nugraha et al. (2023) and Adnan (2023) although the two studies produced different findings. Nugraha et al. (2023) found that the price of gold does not only have an effect in the short term, but also in the long term. Meanwhile, in the findings of Adnan (2023), gold prices have an effect in the short term, but not in the long term. The lack of effect of gold prices is due to the fact that there are no mutual funds that specifically diversify their assets in global commodities.

Furthermore, based on the regression results, it is known that inflation has no effect on mutual fund NAV in the short term or in the long term, so this result is not in accordance with the hypothesis. Based on Table 2, it can be seen that inflation in Indonesia is relatively mild (below 10%), and is considered by the public as something normal so it does not matter if cold funds are invested or not invested (Putri & Noor, 2023).

In the period 2020-2023, there was economic turmoil due to the Covid-19 pandemic which made people choose to invest with the aim of getting as much profit as possible in order to survive the pandemic. As a result, the inflation factor at that time was not considered too important, and the most important thing was to get as much profit as possible. This finding is in line with the findings of Putri & Noor (2023) and Ardhani et al. (2020). On the other hand, this finding is different from Azalia & Budhijana (2023), Apriyanto et al. (2022), Ansari & Zaman (2021), Cheng

& Dewi (2020), and Nafisah & Supriyono (2020), who found that inflation has a negative effect on mutual fund NAV.

The exchange rate is found to have a negative effect on mutual fund NAV, thus in accordance with the hypothesis. Based on Figures 1 and 3, in the period 2020-2023, it appears that the NAV increases along with the decrease in exchange rates, and vice versa. The Covid-19 pandemic has weakened the value of the rupiah because investors prefer to buy dollars which are considered stronger in value than the rupiah, and sell assets in the capital market which has a direct impact on the decline in mutual fund NAV.

The results of this study are in line with the findings of Azalia & Budhijana (2023), but different results were found by Yudhanto & Sari (2024), Mochlasin et al. (2023), Putri & Noor (2023), Kurniasih & Johannes (2015), who found that the exchange rate has no effect on the value of mutual funds. This is because based on the data quoted from Table 3, the total portion of foreign exchange mutual funds from January 2020 was only 2.62% and only increased to 2.80% in 2023. On the other hand, an increase in the exchange rate makes the Indonesian economy unstable, because there are still many companies that get imported raw materials, so an increase in the exchange rate makes companies have to increase the selling price of their products to cover rising production costs. This will make investors prefer to sell their assets and choose to invest in countries with more stable economies.

Based on the regression results, interest rates have a negative effect on mutual fund NAV, so it is not in accordance with the hypothesis. Based on Table 4, it can be seen that there are several types of mutual funds whose portfolio management is influenced by changes in interest rates, which in this study are called SB.

Table 4. Comparison of Bank deposits and mutual fund securities type sb (billion rupiah)

Year	Bank Deposits	Mutual funds
December 2023	8004	268,99
December 2022	8203	244,56
December 2021	7546	285,71
December 2020	6737	289,88

Source: OJK & Deposit Insurance Corporation (LPS), processed

Based on Table 4, it can be seen that there is a significant difference between deposits managed by banks and SB (interest rate dependent) mutual fund security types. The securities types in question include Goverment Bond, SBSN, SUKUK, and Time Deposit. Based on Figure 2, it can be seen that from January 2020 to December 2022, interest rates tend to increase, and this is in line with the number of bank deposits that have increased. On the other hand, during the same period, the type of mutual fund securities affected by interest rates decreased. Thus, the findings are consistent with the research results. Based on this, it can be seen that people will prefer to keep their money in investment instruments with higher interest rates.

Finally, the regression results show that JSEC has a positive effect on mutual fund NAV, which is consistent with the hypothesis. Based on Table 3, it can be seen that JSEC represented by Equity Fund and Index Fund has a portion of more than one-fifth of the total types of mutual funds. This large portion indicates that the increase and decrease in JSEC can directly affect the mutual fund NAV. Since stocks are one of the constituents of equity funds and mixed funds, if stock prices rise, the *return of* equity funds and mixed funds will increase.

This finding is in line with the findings of Yudhanto & Sari (2024), Mochlasin et al. (2023), Nafisah & Supriyono (2020), and Kurniasih & Johannes (2015). A rising JSEC indicates that stocks are in demand by the market. In addition, an increasing JSEC can illustrate the performance of companies that have the potential to earn greater profits. The high income of the company means that the return of funds received by investors will also increase, and vice versa. This is one of the considerations of asset diversification carried out by mutual fund managers, so that it will affect the mutual fund NAV.

Conclusion, Implication, and Recommendation

Mutual funds are one of the important investment instruments to support economic growth in Indonesia. Factors that can affect mutual funds include macroeconomic factors and JSEC. Macroeconomic factors are represented by gold prices, exchange rates, inflation, and interest rates. The purpose of this study is to estimate the effect of gold prices, exchange rates, inflation, interest rates, and JSEC on mutual funds in Indonesia in 2020-2023 in the short and long term using multiple linear regression with Partial Adjustment Model (PAM) analysis tools. Based on the regression results, it is known that in the short and long term, gold prices and inflation have no effect on the NAV of mutual funds in Indonesia in 2020-2023, while exchange rates and interest rates have a negative effect, and JSEC has a positive effect on the NAV of mutual funds in Indonesia.

The government as the policy holder is expected to help increase capital market investment in Indonesia. One of the efforts that can be done is to make policies that can improve financial literacy in Indonesia and encourage financial inclusion, in order to support economic growth in Indonesia. In addition to the government, Bank Indonesia is expected to be able to control inflation rates, interest rates, and exchange rates so that the economy in Indonesia is more stable so that it can attract investors from abroad. On the other hand, investors are expected to always be wise in choosing investment instruments and always pay attention to the risks that arise when investing.

The limitation of this study lies in the use of five independent variables, namely gold, exchange rate, inflation, interest rate, and JSEC. Future research is expected to be able to add other macroeconomic variables or combine variables outside the macroeconomy that are more complex in explaining the factors that affect mutual fund NAV in Indonesia.

6. References

Article Journal

Adnan, M. (2023). Exploring the role of domestic and foreign factors in Indonesian Islamic mutual funds. *Journal of Enterprise and Development (JED)*, *5*(3), 414–430.

Andiyasa, I. G. A., Purbawangsa, I. B. A., & Rahyuda, H. (2014). Pengaruh beberapa indeks saham dan indikator ekonomi global terhadap kondisi pasar modal di Indonesia. *E-Jurnal Ekonomi & Bisnis Universitas Udayana*, *3*(4). https://ojs.unud.ac.id/index.php/EEB/article/download/7806/6415

Ansari, W., & Zaman, S. (2021). Macroeconomic factors influencing the growth of mutual fund industry in Pakistan: a regression analysis of ten years. *International Review of Management and Business Research*, *10*(3), 73–81. https://doi.org/10.30543/10-3(2021)-6

Apriyanto, M., Setyowati, D. H., & Mayasari, I. (2022). Pengaruh BI rate, inflasi, dan kurs terhadap nilai aktiva bersih reksadana syariah campuran. *Journal of Applied Islamic Economics and Finance*, *2*(3), 559–568. https://doi.org/10.35313/jaief.v2i3.3034

Ardhani, I. A., Effendi, J., & Irfany, M. I. (2020). The effect of macroeconomics variables to Net Asset Value (NAV) growth of sharia mutual funds in Indonesia. *Jurnal Ekonomi & Keuangan Islam*, *6*(2), 134–148. https://doi.org/10.20885/jeki.vol6.iss2.art5

Azalia, N., & Budhijana, R. B. (2023). Analisis pengaruh inflasi, nilai tukar rupiah, dan BI rate terhadap nilai aktiva bersih reksadana syariah di Indonesia periode 2015-2019. *Journal of Accounting, Management and Islamic Economics*, *1*(2), 701–711.

Cheng, L., & Dewi, K. (2020). The effects of inflation, risk, and money supply on mutual funds performance. *Journal of Applied Finance and Accounting*, *7*(1), 29–34.

Fitriyani, Y., Ratnani, M. R., & Al Aksar, N. (2020). Pengaruh variabel makro terhadap nilai aktiva bersih reksa dana saham syariah. *Wahana Islamika: Jurnal Studi Keislaman*, *6*(1), 1–15. http://wahanaislamika.ac.id

Hartati, Y. E., Kismawadi, E. R., Hamid, A., & Mardhiah, A. (2021). Pengaruh nilai tukar dan inflasi pada reksadana syariah di Indonesia. *BISNIS: Jurnal Bisnis & Manajemen Islam*, *9*(1), 165–192. https://doi.org/10.21043/bisnis.v9i1.9791

Ilyas, M., & Shofawati, A. (2019). Pengaruh inflasi, nilai tukar rupiah, BI rate terhadap nilai aktiva bersih reksa dana terproteksi syariah periode 2014-2018 di Indonesia. *Jurnal Ekonomi Syariah Teori & Terapan*, *6*(9), 1830–1839. https://doi.org/https://doi.org/10.20473/vol6iss20199pp1830-1839

Karim, N. A., Al-Habshi, S. M. S. J., & Abduh, M. (2016). Macroeconomics indicators and bank stability: a case of banking in Indonesia. *BMEB: Bulletin of Monetary Economics and Banking*, *18*(4), 1–18. https://doi.org/https://doi.org/10.21098/bemp.v18i4.609

Kurniasih, A., & Johannes, L. D. Y. (2015). Analisis variabel makroekonomi terhadap kinerja reksadana campuran. *Jurnal Manajemen*, *19*(1), 136–151. https://doi.org/https://doi.org/10.24912/jm.v19i1.110

Mochlasin, Anwar, S., Salsabila, F. S., & Faisal, M. A. (2023). Pengaruh indeks harga saham gabungan, kurs, Jakarta Islamic Index, dan Covid-19 terhadap reksadana saham syariah. *JIEI: Jurnal Ilmiah Ekonomi Islam*, *9*(01), 1279–1289. https://doi.org/10.29040/jiei.v9i1.6185

Nafisah, H., & Supriyono. (2020). Analysis of the effect of macroeconomics on net assets value of sharia mutual funds in Indonesia. *International Journal of Islamic Business and Economics (IJIBEC)*, *4*(1), 11–20. https://doi.org/10.28918/ijibec.v3i2

Nugraha, H., Putriani, S., Gustinanda, M. M., & Makarim, Z. A. (2023). Pengaruh harga komoditas global terhadap industri reksa dana Indonesia. *Journal of Economics Research and Policy Studies*, *3*(1), 1–15. https://doi.org/10.53088/jerps.v3i1.602

Nurcholis, M., Hasmarini, M. I., & Athief, F. H. N. (2024). Analisis pengaruh sukuk korporasi, total aset perbankan syariah, reksadana dan inflasi terhadap pertumbuhan ekonomi di Indonesia tahun 2022. *Economics and Digital Business Review*, *5*(1), 439–447. https://doi.org/https://doi.org/10.37531/ecotal.v5i1.1082

Putri, N. A. R., & Noor, I. (2023). Analisis pengaruh JUB, inflasi, kurs, dan IHSG terhadap kinerja reksa dana syariah di Indonesia pada tahun 2015 hingga 2020. *IEFF: Islamic Economics and Finance in Focus*, *2*(2), 316–325. https://doi.org/http://dx.doi.org/10.21776/ieff

Saputri, N. E., & Yudiantoro, D. (2022). Pengaruh inflasi dan suku bunga terhadap kinerja reksadana saham konvensional tahun 2018-2021. *Jurnal EMA: Jurnal Ekonomi Manajemen Akuntansi*, *7*(1), 19–25. https://doi.org/http://dx.doi.org/10.47335/ema.v7i1.111

Untono, M. (2015). Analisis pengaruh pertumbuhan ekonomi, inflasi, nilai tukar, indek DJIA, dan harga minyak dunia terhadap indek harga saham gabungan. *PARSIMONIA*, *2*(2), 1–12.

Yudhanto, Z. W., & Sari, C. M. (2024). Pengaruh nilai tukar, jumlah uang beredar, dan IHSG terhadap nilai aktiva bersih reksadana syariah tahun 2019-2021. *Al-Kharaj: Jurnal Ekonomi Keuangan & Bisnis Syariah*, *6*(1), 39–50. https://doi.org/10.47467/alkharaj.v6i1.2114

Yunus, M., Purnomo, A., & Zakiyah. (2021). *Pengaruh indeks harga konsumen dan jumlah uang beredar terhadap nilai aktiva bersih reksa dana syariah periode 2017-2019*. http://eprints.uniska-bjm.ac.id/id/eprint/4254

Book

Gujarati, D. N., & Porter, D. C. (2013). Basics Econometrics. In *Introductory Econometrics: A Practical Approach*. New York: McGraw-Hill/Irwin.