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Macroeconomic Determinants Of Net Asset Value Per Unit Of Short-Term Benchmark Fixed-Income Mutual Funds In Indonesia (2021-2025)

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Abstract

This article examines the long-run and short-run effects of inflation, the USD/IDR exchange rate, the Bank Indonesia policy rate, and the 10-year government bond yield (SBN 10Y) on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia over the period 2021-2025. The study focuses exclusively on the short-term benchmark group, represented by five fixed-income mutual funds with short-term benchmarks and a total of 300 monthly panel observations. Using the Pooled Mean Group (PMG) estimator within a panel ARDL framework, the article finds that inflation has a significant negative long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia, whereas the USD/IDR exchange rate, the Bank Indonesia policy rate, and the SBN 10Y yield do not have statistically significant long-run effects at the 5% level. In the short run, lagged changes in the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia are negative and significant, while macroeconomic variables are not significant. The error-correction term is positive and insignificant, indicating weak or sticky short-run adjustment. These findings suggest that short-term benchmark fixed-income mutual funds are defensive against interest-rate and long-end yield shocks, but remain exposed to inflation-driven erosion of real returns. The article contributes to financial literacy by showing that fixed-income mutual funds are not risk-free instruments.

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Keyword: fixed-income mutual funds; short-term benchmark; inflation; exchange rate; BI rate; SBN 10Y yield; PMG

INTRODUCTION

Fixed-income mutual funds have become an important investment vehicle for Indonesian retail investors. Under POJK No. 47/POJK.04/2015, fixed-income mutual funds must invest at least 80% of their Net Asset Value in debt securities, including government bonds, corporate bonds, and other fixed-income instruments (OJK, 2015). This structure makes fixed-income mutual funds sensitive to macroeconomic conditions, particularly inflation, exchange-rate movements, monetary policy, and government bond yields (Fabozzi & Fabozzi, 2021). However, many retail investors still perceive fixed-income mutual funds as risk-free instruments. This perception is misleading because the Net Asset Value per unit of fixed-income mutual funds fluctuates with market prices and macroeconomic conditions (Bareksa, 2015).

The period 2021-2025 provides a relevant setting for examining these issues. During this period, Indonesia experienced global economic uncertainty, commodity-price shocks, aggressive monetary tightening by major central banks, exchange-rate pressures, and a shifting domestic interest-rate cycle (Bank Indonesia, 2025). These conditions affected the Indonesian bond market and, consequently, the performance of fixed-income mutual funds. Within this broad category, short-term benchmark fixed-income mutual funds are designed to be more defensive. They typically use short-term benchmarks such as IDRTD1M or IDRTD6M, hold short-duration instruments, and apply rapid roll-over strategies. As a result, their Net Asset Value per unit of fixed-income mutual funds is expected to be less sensitive to long-end yield movements than that of longer-duration funds (Macaulay, 1938; Manurung, 2007).

Despite this theoretical expectation, empirical studies specifically examining the short-term benchmark segment of fixed-income mutual funds remain scarce. Most previous studies treat fixed-income mutual funds as a homogeneous group, failing to distinguish their duration profiles. Furthermore, prior research predominantly uses total Assets Under Management (AUM) as the dependent variable, which is highly sensitive to cash inflows and outflows, rather than the Net Asset Value per unit which reflects the intrinsic value of the portfolio.

Therefore, this article focuses exclusively on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia, denoted as Y, and examines its relationship with four macroeconomic variables: Inflation (X_1), the USD/IDR exchange rate (X_2), the Bank

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Indonesia policy rate (X_3), and the 10-year government bond yield (X_4). The research questions are: (1) Do X_1, X_2, X_3, and X_4 have significant long-run effects on Y? (2) Do X_1, X_2, X_3, and X_4 have significant short-run effects on Y? (3) How can the observed effects be explained by bond valuation, duration, Fisher effect, and monetary transmission theories?

This article contributes to the literature in three ways. First, it isolates the short-term benchmark segment of fixed-income mutual funds, which is often treated as homogeneous in previous studies. Second, it uses Net Asset Value per unit of fixed-income mutual funds rather than total assets under management as a dependent variable, so the analysis reflects the intrinsic value per unit of ownership. Third, it applies the PMG estimator within a panel ARDL framework, which allows heterogeneous short-run dynamics across products while imposing homogeneous long-run coefficients. The findings are expected to support investor education and risk management in fixed-income mutual funds.

OVERVIEW OF SHORT-TERM BENCHMARK FIXED-INCOME MUTUAL FUNDS

Short-term benchmark fixed-income mutual funds are a subset of fixed-income mutual funds that use short-term benchmarks, such as one-month or six-month deposit rates, or short-term bond indices. These funds generally hold debt securities with short maturities, including short-term government securities, short-term corporate bonds, and money-market instruments. Their portfolio duration is typically low, and their investment strategy is defensive. When interest rates change, short-term instruments mature quickly and can be reinvested at new rates. This roll-over mechanism reduces the permanent effect of interest-rate changes on portfolio value (Fabozzi & Fabozzi, 2021; Manurung, 2007).

The sample in this study consists of five short-term benchmark fixed-income mutual funds selected through purposive sampling. The criteria were: the funds were listed before 31 December 2020; they were denominated in Indonesian rupiah; they had positive NAV throughout January 2021-December 2025; they used short-term benchmarks such as IDRTD1M or IDRTD6M; and they were among the five largest funds in their category by assets under management as of December 2020. The final panel contains five products and 60 monthly observations, yielding 300 observations.

Because these funds are positioned at the short end of the yield curve, their NAV per unit is expected to be relatively stable against changes in the 10-year government bond yield. However, they are not immune to inflation. When inflation rises, the real return of short-term

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nominal instruments may decline, even if their nominal prices remain stable. This distinction between nominal stability and real-return erosion is central to the analysis.

OVERVIEW OF MACROECONOMIC DETERMINANTS

Inflation reflects the rate of change in the general price level and affects the purchasing power of investment returns. According to the Fisher Effect, nominal interest rates tend to adjust to expected inflation: $i = r + \pi^e$ (Fisher, 1930). When inflation rises, investors demand higher nominal yields to compensate for expected purchasing-power loss. For short-term fixed-income mutual funds, inflation may not immediately change market prices, but it can erode real returns. If the nominal yield of short-term instruments does not fully adjust to inflation, investors may receive negative real returns.

The USD/IDR exchange rate reflects the price of the US dollar in Indonesian rupiah. Exchange-rate movements can affect capital flows, foreign investor sentiment, and domestic bond prices. When the rupiah depreciates, foreign investors may face currency losses on Indonesian assets and may reduce their holdings, potentially creating selling pressure in the bond market (Mishkin, 2017). However, short-term benchmark fixed-income funds typically hold rupiah-denominated domestic instruments and do not have direct foreign-currency exposure. Therefore, the direct effect of the exchange rate on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y) may be limited.

The Bank Indonesia policy rate is the main monetary policy instrument and influences short-term money-market rates, bank deposit rates, and bond yields. Through the interest-rate channel of monetary transmission, a policy rate increase raises the discount rate and may lower bond prices (Mishkin, 2017). However, for short-term funds with rapid roll-over, the negative price effect may be temporary. As short-term instruments mature, investment managers can reinvest at higher rates, which may offset the initial price decline.

The SBN 10Y yield is a benchmark for the long end of the Indonesian government bond market. Bond valuation theory states that bond prices and yields have an inverse relationship (Fabozzi & Fabozzi, 2021). When the 10-year yield rises, the present value of future cash flows falls, and bond prices decline. However, short-term benchmark funds hold instruments with low duration. According to the duration theory, the sensitivity of bond prices to yield changes increases with duration (Macaulay, 1938). Therefore, the SBN 10Y yield is expected to have a

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weaker effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y) than on longer-duration portfolios.

THEORETICAL INSIGHT

This study is grounded in four theoretical perspectives. First, the Fisher effect explains the link between inflation and nominal returns. Inflation can reduce real returns when nominal yields do not adjust fully. For short-term fixed-income mutual funds, this mechanism is particularly relevant because their nominal Net Asset Value per unit may appear stable while their real value is eroded by inflation.

Second, bond valuation theory explains the inverse relationship between bond yields and prices. When yields rise, the discount rate increases, and the present value of future cash flows decreases. Because fixed-income mutual funds hold bonds as their main assets, changes in yields can affect their Net Asset Value per unit through mark-to-market valuation (Bareksa, 2015; Fabozzi & Fabozzi, 2021).

Third, duration theory explains why short-term funds are less sensitive to long-end yield changes. Duration measures the weighted average time until cash flows are received. The longer the duration, the more sensitive the bond price is to yield changes. Short-term funds have low duration, so their prices are less affected by changes in the SBN 10Y yield (Macaulay, 1938).

Fourth, monetary transmission theory explains how policy rate changes affect financial markets. The interest-rate channel and the asset price channel transmit policy rate changes to bond prices and asset valuations (Mishkin, 2017). However, for short-term funds with rapid roll-over, the effect may be muted because assets are repriced quickly.

METHODOLOGY

This study uses a quantitative explanatory design with panel data. The dependent variable is the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y), the average Net Asset Value per unit of five short-term benchmark mutual funds. The independent variables are inflation (monthly year-on-year inflation, %) denoted as X_1, the USD/IDR exchange rate (in rupiah) denoted as X_2, Bank Indonesia policy rate (in %) denoted as X_3, and SBN 10Y yield (in %) denoted as X_4. Data are monthly from January 2021 to December 2025. Sources include Otoritas Jasa Keuangan (OJK), Bareksa, Pasar Dana, Bank Indonesia, and Investing.com.

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The estimation uses the Pooled Mean Group (PMG) estimator within a panel ARDL framework (Pesaran et al., 1999). PMG allows short-run coefficients, intercepts, and error-correction terms to differ across products, while restricting long-run coefficients to be homogeneous. This specification is appropriate because the funds share a common long-run macroeconomic transmission mechanism but may differ in short-run portfolio strategies. The selected lag specification is PMG (3,0,0,1,3). Stationarity is tested using ADF-Fisher and PP-Fisher panel unit-root tests. Cointegration is tested using the Pedroni residual cointegration test (Pedroni, 1999). The long-run equation is specified as:

$$Y_{it} = \alpha_i + \beta_1 X_{1_{it}} + \beta_2 X_{2_{it}} + \beta_3 X_{3_{it}} + \beta_4 X_{4_{it}} + \varepsilon_{it}$$

The short-run model includes lagged differences of the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y), Bank Indonesia policy rate (X_3), and SBN 10Y yield (X_4), together with the error-correction term. Statistical significance is evaluated at $\alpha = 5\%$, with $p < 0.01$ considered highly significant and $0.01 \leq p < 0.05$ considered significant.

RESULT AND DISCUSSION

Stationarity and Cointegration

The panel unit-root tests show that all variables are non-stationary at the level but stationary at the first difference, or I(1). This satisfies the prerequisite for panel ARDL estimation. The Pedroni residual cointegration test rejects the null hypothesis of no cointegration for the between-dimension indicators and the weighted within-dimension indicators at the 5% level. Therefore, there is evidence of the stable long-run relationship between X_1, X_2, X_3, X_4, and Y.

Long-Run Results

Table 1. The long-run PMG estimates for Y.

Variables	Coefficient	*Std. Error*	*T-Statistic*	*Prob.*	Decision
Inflation (X_1)	-17,419.36	8,293.235	-2,100430	0.0366	Significant Negative
The USD/IDR exchange rate (X_2)	0.279392	0.248666	1.123565	0.2622	Not Significant
Bank Indonesia policy rate (X_3)	2,707.214	7,650.935	0.353841	0.7237	Not Significant
SBN 10Y Yield (X_4)	59,344.91	34,714.19	1.709529	0.0885	Not Significant

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Constant	-6,809.694	4,409.449	-1.544341	0.1236	Not Significant

Sources: EViews, processed (2026)

The long-run equation can be written as:

$$Y=-6{,}809.694-17{,}419.36X_1+0.279392X_2+2{,}707.214X_3+59{,}344.91X_4$$

Inflation has a negative and significant long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (p=0.0366). A one-percentage-point increase in inflation is associated with a decrease of approximately 17,419.36 points in the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia, holding other variables constant. This finding supports the view that short-term benchmark funds are exposed to inflation risk. Because these funds are tied to short-term nominal benchmarks, persistent inflation can erode their real returns and reduce their valuation in real terms. Although their nominal prices may be relatively stable, their purchasing power is not fully protected.

The USD/IDR exchange rate has no significant long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (p=0.2622). This result is consistent with the portfolio characteristics of short-term benchmark funds, which primarily hold rupiah-denominated domestic instruments. They do not have direct foreign-currency exposure, so currency translation risk does not directly affect their Net Asset Value per unit. Exchange-rate movements may influence market sentiment and capital flows, but they do not directly change the coupon structure or principal value of short-term rupiah-denominated assets.

The Bank Indonesia policy rate has no significant long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (p=0.7237). Short-term funds use rapid roll-over and hold assets with short maturities. When the policy rate rises, the initial price effect may be limited because the duration of assets is low. As short-term instruments mature, managers can reinvest at higher rates, which offsets the initial negative price effect. Therefore, the policy rate does not leave a persistent structural effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia.

The SBN 10Y yield has no significant long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia at the 5% level (p=0.0885). The coefficient is large, but it is not statistically robust. This result is theoretically plausible because the SBN 10Y yield is a long-end benchmark, while short-term funds operate at the short end of the yield curve. Their low duration makes them less sensitive to changes in long-term yields. The

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large coefficient should not be interpreted as strong evidence because the p-value is above the 5% threshold.

Short-Run Result

Table 2. Short-run PMG Estimates for the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y)

Variables	Coefficient	*Std. Error*	*T-Statistic*	*p-value*	Decision
COINTEQ	0.006890	0.004721	1.459516	0.1455	Not Significant
D(Y(-1))	-0.409822	0.131369	-3.119629	0.0020	Significant Negative
D(Y(-2))	-0.235475	0.056338	-4.179714	0.0000	Significant Negative
D(X3)	-2,416.387	1,545.293	-1.563708	0.1190	Not Significant
D(X4)	-11,196.85	5,851.698	-1.913435	0.0567	Not Significant
D(X4(-1))	-532.1834	3,256.018	-0.163446	0.8703	Not Significant
D(X4(-2))	-4,032.553	2,504.791	-1.609936	0.1085	Not Significant

Sources: EViews, processed (2026)

The lagged dependent variables are negative and significant: D(Y(-1)) has a coefficient of -0.409822 (p=0.0020), and D(Y(-2)) has a coefficient of -0.235475 (p=0.0000). This pattern suggests short-run mean reversion or profit-taking behaviour. When the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia (Y) rises in previous months, investors may take profits or rebalance their portfolios, which slows the growth of Net Asset Value per unit in the current month.

The short-run macroeconomic variables are not significant at the 5% level. D(X3) has a p-value of 0.1190, and D(X_4) has a p-value of 0.0567. The lags of D(X_4) are also insignificant. These results indicate that short-term fluctuations in the policy rate and the SBN 10Y yield do not have a strong immediate effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia. This is consistent with the defensive and low-duration nature of short-term benchmark funds.

The error-correction term (COINTEQ) is positive and insignificant (p=0.1455). The positive sign is not consistent with the standard expectation of a negative and significant ECT. This result should be interpreted cautiously. It suggests that short-run adjustment toward long-run equilibrium is weak or sticky in this segment. The long-run cointegration relationship is supported by the Pedroni test, but the speed of adjustment is slow. Managers of short-term funds tend to

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follow a hold-to-maturity approach for short-term instruments, and they do not actively rebalance in response to monthly macroeconomic shocks.

DISCUSSION

Overall, the results show that inflation is the main macroeconomic variable that significantly affects the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia over the period 2021-2025 (Y) in the long run. This finding is important because short-term benchmark funds are often perceived as safe and stable. Their nominal Net Asset Value per unit may be relatively stable, but inflation can erode their real value. Investors should therefore distinguish between nominal stability and real return protection.

The insignificant effects of the USD/IDR exchange rate, the BI rate, and the SBN 10Y yield reflect the structural characteristics of short-term instruments, which have low duration and use rapid roll-over. As a result, they are less exposed to exchange-rate translation risk, policy rate shocks, and long-end yield movements. However, this does not mean that they are risk-free. Inflation risk remains significant.

From a theoretical perspective, the findings support the Fisher effect and duration theory. The Fisher effect explains why inflation matters for real returns. Duration theory explains why long-end yield changes do not significantly affect short-term funds. Bond valuation theory explains the inverse yield-price relationship, but its effect is muted for short-duration portfolios. Monetary transmission theory explains why policy rate changes may not have a persistent effect on short-term funds with rapid roll-over.

From a practical perspective, the findings suggest that investors should monitor inflation when investing in short-term benchmark fixed-income mutual funds. They should not rely solely on Net Asset Value per unit stability. They should also understand that short-term funds are defensive but not immune to macroeconomic risks. For fund managers, the results highlight the importance of inflation hedging and benchmark adjustment in the short-term segment. For regulators, the findings support continued investor education on the risks of fixed-income mutual funds.

CONCLUSION

This article examines the effects of inflation, the USD/IDR exchange rate, the Bank Indonesia policy rate, and the SBN 10Y yield on the Net Asset Value per unit of short-term

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benchmark fixed-income mutual funds in Indonesia over the period 2021-2025. Using the PMG estimator within a panel ARDL framework, the study finds that inflation has a significant negative long-run effect on the Net Asset Value per unit of short-term benchmark fixed-income mutual funds in Indonesia during the period 2021-2025 (Y). The USD/IDR exchange rate, the BI rate, and the SBN 10Y yield do not have statistically significant long-run effects at the 5% level. In the short run, lagged changes in the Net Asset Value per unit are negative and significant, while macroeconomic variables are not significant. The error-correction term is positive and insignificant, indicating weak or sticky adjustment.

These findings suggest that short-term benchmark fixed-income mutual funds are defensive against interest-rate and long-end yield shocks but remain exposed to inflation risk. Their low duration and rapid roll-over reduce sensitivity to policy rate and long-end yield changes, but they do not eliminate the erosion of real returns caused by inflation. Investors should therefore treat fixed-income mutual funds as not risk-free and should consider inflation when evaluating short-term fixed-income investments.

FUTURE DIRECTIONS

Future research on short-term benchmark fixed-income mutual funds could extend this study in several ways. First, researchers could apply the Non-Linear ARDL (NARDL) approach to examine the asymmetric effects of inflation and exchange rate changes. Second, future studies could use higher-frequency data, such as weekly or daily observations, to capture short-run dynamics more precisely. Third, researchers could include additional variables, such as gross domestic product, global volatility indices, geopolitical risk, fiscal policy, and foreign capital flows. Fourth, future studies could examine the implications of the Efficient Market Hypothesis for the short-term fixed-income mutual fund segment. Finally, researchers could investigate whether inflation-hedging strategies or benchmark adjustments improve the real return protection of the short-term fixed-income mutual funds.

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