IRJEMS International Research Journal of Economics and Management Studies
Published by Eternal Scientific Publications
ISSN: 2583 – 5238 / Volume 3 Issue 12 December 2024 / Pg. No: 136-140
Paper Id: IRJEMS-V3I12P117, Doi: 10.56472/25835238/IRJEMS-V3I12P117

Research Article

Inflation and Exchange Rates and Fixed-Income Mutual Fund Performance

[1]Martalena Martalena*, [2]Peter Peter, [3]Dini Iskandar, [4]Fransisca Carolina
[1,2,3,4]Management Department, Maranatha Christian University, Bandung, West Java, Indonesia.

Received Date: 19 November 2024 Revised Date: 28 November 2024 Accepted Date: 06 December 2024 Published Date: 17 December 2024

Abstract: *This study aims to prove the effect of the inflation level and the IDR/USD exchange rate on Fixed-Income Mutual Fund Performance (FIMFP), organized by BRI Investment Management. The population and the samples are the same, i.e., nine mutual fund products with a Net Asset Value (NAV) between 2017 and 2021. Furthermore, NAV becomes the indicator for calculating the total return, reflecting the performance. Moreover, this study utilizes a multiple regression model to analyze the data. As a result, this study concludes that the inflation level negatively influences this FIMFP. The weakness of the IDR/USD exchange rate decreases this FIMFP. Practically, the candidate of individual investors intending to buy fixed-income mutual funds must wait for the inflation reduction to return its Net Asset Value (NAV). For IDR/USD, the investors should wait for the IDR/USD foreign exchange appreciation to get a positive NAV change.*

Keywords: *Fixed-Income Mutual Fund Performance, IDR/USD Exchange Rate, Inflation Level, Investment Risk.*

I. INTRODUCTION

The capital market provides various instruments [1]. Therefore, this condition makes investors select one of them to reduce the investment risk [2]. For risk-tolerated investors, they can invest in stocks because of their price fluctuation [3]. The risk averters purchase bonds because of the fixed payment of coupons from the issuers [4]. Unfortunately, it will be problematic for non-professional investors to respond to the maturity date and monitor the financial stability of issuers [5].

Furthermore, buying fixed-income Mutual Fund (MF) ownership organized by professional investment managers through the related company is the way to handle these problems [2]. By implementing it, non-professional investors will save time monitoring the financial stability of companies issuing bonds [5]. Of course, they only need to pay attention to the net asset value movement, reflecting the ability of investment managers to diversify the risk [2]. Regarding the risk, fixed-income MF is below equity MF but more prominent than money-market MF [6].

Commonly, mutual fund performance is affected by macroeconomic factors, i.e., inflation and exchange rates. Specifically, inflation negatively influences the performance of conventional equity mutual funds, as Rois et al. [7], Cheng and Dewi [8], and Ramadhanti and Siswantini [9] display. Also, Pratama [10] confirms the negative tendency of inflation when investigating conventional equity and Fixed-Income Mutual Funds (FIMF) in one research model. Rois et al. [7] affirm the negative tendency of the IDR/USD exchange rate toward Conventional Equity Mutual Fund (CEMF) performance. Similarly, Rizki et al. [11] document that this IDR/USD exchange rate negatively influences the Shariah FIMF performance.

Unfortunately, this circumstance does not always occur. For example, Rizki et al. [11] cannot prove the connection between inflation and the Shariah FIMF performance. Similarly, Aryadi and Setyono [12] cannot associate inflation with CEMF performance, as supported by Ilyas and Shofawati [13], who researched Islamic-protected mutual funds.

Meanwhile, Titi et al. [14] demonstrate no relationship between the IDR/USD exchange rate and conventional FIMF performance. However, Ilyas and Shofawati [13] document a positive relationship between this exchange rate and the protected Islamic mutual fund's net asset value.

Regarding these inconsistent facts, this study investigates the effect of inflation, interest, and an exchange rate of IDR/USD on fixed-income mutual fund performance organized by PT Danarekasa Investment Management. Now, the firm name is BRI Investment Management, a subsidiary company belonging to PT Bank Rakyat Indonesia (Persero) Tbk and PT Danareksa (Persero), with 65% and 35% share ownership, respectively [15]. Theoretically, Hartono [2] explains that this mutual fund contains 80% of bonds becoming the portfolio.

II. LITERATURE REVIEW

When inflation appears, the coupon rate payment of fixed-income bonds remains the same. Therefore, the investors will search for another instrument with a return exceeding inflation. As a result, they sell bonds, and the bond market value decreases. Regarding bonds dominantly consisting of fixed-income mutual funds, their net asset value goes down [16]. After studying the conventional FIMF, Permatasari [17] confirms this explanation by revealing a negative tendency of inflation rate toward the FIMF performance. Similarly, by investigating the combination of conventional fixed-income and equity mutual funds in one research model, Pratama [10] expresses this negative inclination. Based on this information, this study declares the first hypothesis:

H_1: The higher the inflation, the lesser the fixed-income mutual performance.

The exchange rate demonstrates the domestic currency required to get the foreign one [18]. If the IDR/USD depreciates, the company with debt in USD will have a higher burden, reflected by the increase in IDR debt after the USD conversion into IDR. This situation makes the investors with the bonds sell; therefore, the bond price decreases [13] and cuts the fixed-income mutual fund's net asset value, as Rois et al. [7] and Rizki et al. [11] confirm in their research. Based on this information, this study declares the second hypothesis:

H_2: The higher the IDR/USD exchange rate, the lesser the fixed-income mutual performance.

Mentioning the first and second hypotheses explained above, the research model is obtainable in Figure 1.

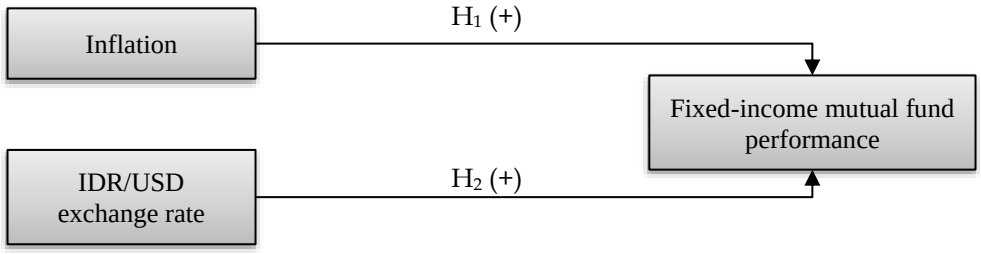

Figure 1. Research Model

Source: *Hypotheses Development*

III. RESEARCH METHOD

This study has two kinds of variables. The first is the dependent, i.e., fixed-income mutual fund performance. The second is the independents, i.e., inflation level and exchange rate. Furthermore, this study uses the archival method. According to Hartono [19], secondary data is involved. Each indicator measures these variables with the source in Table 1.

Table 1: Operational definition of research variables and Data Source

Variable	Indicator	Data Source
Fixed-income mutual fund performance	The return on net asset value of FIMF products	The BRI Investment Management Report
Inflation level	The yearly inflation level	The Indonesian Central Agency of Statistics
IDR/USD exchange rate	The mid-market exchange rate	The Central Bank of Indonesia

The population is nine fixed-income mutual fund products organized by investment managers of Bank Rakyat Indonesia from 2017 until 2021. Employing the Slovin formula with a 5% error margin in Firdaus [20], the total samples are $8.802 \approx 9$. The nine product names intended are in Table 2.

Table 2: The names of fixed-income mutual funds products are becoming samples

No.	The name of the products
1.	Danareksa Melati Pendapatan Utama
2.	Danareksa Gebyar Indonesia II
3.	Danareksa Pendapatan Tetap Indonesia Sehat
4.	Danareksa Pendapatan Prima Plus
5.	Danareksa Melati Pendapatan Tetap
6.	Danareksa Melati Pendapatan Tetap II
7.	Danareksa Melati Pendapatan Utama II
8.	Danareksa Melati Pendapatan Utama Syariah
9.	Danareksa Melati Pendapatan Tetap Multiplus

This study utilizes a multiple regression model by placing the inflation and IDR/USD exchange rates as the independent variable and fixed-income mutual fund performance (FIMFP) as the dependent one, where the model is in Equation 1.

$$FIMFP_{it} = \beta_0 + \beta_1 Inflation_t + \beta_2 IDR/USD_t + \varepsilon_{it} \quad (1)$$

Notes: i = the mutual fund products as cross-section unit and t = time-series unit

The ordinary least square becomes the basis for the multiple regression estimation. Therefore, its model must comply with classical assumptions: the normality of error, no multicollinearity among independent variables, no autocorrelation, and homoskedasticity, detected by Kolmogorov-Smirnov, variance inflation factor (VIF), runs, and Glesjer [21].

IV. RESULTS

Table 3 presents the results of the classical assumption test for normality, autocorrelation, and multicollinearity. In this table, the normality and non-autocorrelation tests are attainable, shown by the asymptotic significance (2-tailed) of 0.334 and 0.256, exceeding a 5% significance level, based on the Z-statistic of Kolmogorov-Smirnov and the runs with the average cut-off point, respectively. Multicollinearity does not exist because VIF for inflation and IDR/ USD is below 10: 1.230 and 1.230.

Table 3: The result of normality, multicollinearity, and autocorrelation tests

The tool to detect the classical assumption	Measurement	Meaning
Kolmogorov-Smirnov normality test	The asymptotic significance (2-tailed) of the Z statistic for KS is 0.3334.	Errors follow a normal distribution because the asymptotic significance (2-tailed) is above a 5% significance level.
Run for autocorrelation test.	The Z-statistical asymptotic significance (2-tailed) based on the cut-off mean is 0.256.	Autocorrelation does not exist because the asymptotic significance (2-tailed) is above a 5% significance level.
VIF for multicollinearity test	The VIF of inflation and IDR/USD is 1.230.	Multicollinearity is unavailable because VIF is lower than 10.

Table 4 illustrates the Glesjer heteroskedasticity examination result with the probability of Chi-square for the observed R-square of 0.9330. Because it exceeds 5%, heteroskedasticity is unavailable, supporting the classical assumption required.

Table 4: Glesjer Heteroskedasticity Test Result – ABSRES = f(INFLATION, IDR/USD)

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	15.60443	41.31758	0.377671	0.7076
Inflation	0.111698	1.232528	0.090625	0.9282
IDR/USD	-0.000780	0.002832	-0.275265	0.7845
Observed R-squared	0.138670	Probability of Chi-Square (2)		0.9330

Table 5 exhibits the estimated regression model and the probability of 0.0582 and 0.000 for examining each hypothesis. Because each value is still lower than the 10% significance level, the first and second hypotheses are acceptable: inflation and the IDR/US exchange rates negatively affect fixed-income mutual fund performance. Besides, this model has an adjusted R-squared of 0.419338: the contribution of inflation and this exchange rate to explain the variance of FIMFP is 41.9338%, and the rest depends on the other factors.

Table 5: The estimation result of the regression model of fixed-income mutual fund performance

Variable	Coefficient	Std. Error	t-Statistic	Probability
C	329.0817	56.55682	5.818603	0.0000
Inflation	-3.285578	1.687123	-1.947444	0.0582
IDR/USD	-0.022405	0.003877	-5.779413	0.0000
R-squared	0.445731	F-statistic		16.88777
Adjusted R-squared	0.419338	Probability of F-statistic		0.000004

V. DISCUSSION

This study verifies hypothesis one, declaring the negative tendency of inflation toward fixed-income mutual performance. The increase in inflation damages public intention to invest money in securities, where one of them is bonds. Instead, society focuses on its need to consume daily products; hence, the demand for bonds decreases, causing diminishing bond prices and fixed-income mutual performance. Therefore, this study affirms Permatasari [17] and Pratama [10] with a negative inclination.

This study validates hypothesis two, stating the negative propensity of the IDR/USD exchange rate towards fixed-income mutual performance. This study validates hypothesis two, i.e., the negative propensity of the IDR/USD exchange rate towards fixed-income mutual performance. The IDR/USD exchange rate appreciation diminishes firm foreign debt in USD /IDR, producing a positive bond yield. Thus, based on this explanation, this study supports Rois et al. [7] and Rizki et al. [11]

Practically, the candidates of investors intending to buy fixed-income mutual funds must wait for the inflation reduction to return its net asset value (NAV). For IDR/USD, the investors should wait for the IDR/USD foreign exchange appreciation to get a positive NAV change. Conversely, investors with these mutual funds can sell them when inflation and IDR/USD depreciation occur to avoid the decrease in NAV.

VI. CONCLUSION

This study aims to prove the impact of inflation and the IDR/USD exchange rate on fixed-income mutual fund performance (FIMFP) by utilizing the secondary data from 2017 to 2021 belonging to BRI Investment Management. By mentioning and answering the research purpose, this study concludes a negative relationship between inflation and FIMFP. This negative association occurs between the IDR/USD exchange rate and this performance. With two pieces of meaningful evidence, this study strengthens the literature review, i.e., previous studies documenting an inverse impact of inflation and IDR/USD exchange rate on FIMFP.

This study uses two fixed-income mutual fund (FIMF) performance factors with a 41.9338% contribution as the first theoretical limitation. Hence, the ensuing researchers should augment the economic factors, such as the BI Rate, economic growth, and money supply, as the determinants in their research model. Also, they should use assets under management, Alpha Jensen, Sharpe ratio, expense ratio, and systematic risk to handle this issue. Besides, this study only utilizes the FIMF under a single investment manager as the second limitation. Therefore, the subsequent scholars should combine several investment managers with FIMF in Indonesia for better research generalization.

Interest Conflicts

The authors declare no conflict of interest concerning this manuscript publication.

Funding Statement

This research receives funding from Maranatha Christian University for process and publication fees.

Acknowledgments

The authors thank Maranatha Christian University for full financial support.

VI. REFERENCES

[1] N. Arora and B. Singh, "Corporate governance and underpricing of small and medium enterprises IPOs in India," *Corp. Gov.*, vol. 20, no. 3, pp. 503–525, 2020, doi: 10.1108/CG-08-2019-0259.

[2] J. Hartono, *Portfolio Theory and Investment Analysis*, 11th ed. Yogyakarta: Badan Penerbit Fakultas Ekonomi Universitas Gadjah Mada, 2017.

[3] A. S. Robbyah, F. K. Mubarok, R. El Junusi, and R. Wahyudi, "Analysis of the return and risk of investment in insurance companies listed on the Indonesian stock exchange," *At-Taqaddum*, vol. 13, no. 1, pp. 73–84, 2021, doi: 10.21580/at.v13i1.8949.

[4] E. Fatmawati, "Effect of age of bonds, interest rate, and inflation level on bonds results," *J. Res. Business, Econ. Educ.*, vol. 2, no. 3, pp. 645–652, 2020, [Online]. Available: https://e-journal.stie-kusumanegara.ac.id/index.php/jrbee/article/view/78

[5] J. Stankevičienė and I. Petronienė, "Bond mutual funds versus bond exchange-traded funds: Evaluation of risk-adjusted performance," *Adm. Sci.*, vol. 9, p. 31, 2019, doi: 10.3390/admsci9020031.

[6] T. Nur and F. V. Fernandika, "Factors of fixed-income mutual fund performance," *J. Appl. Financ. Account.*, vol. 9, no. 1, pp. 1–10, 2022, doi: 10.21512/jafa.v9i1.8150.

[7] M. R. Rois, M. F. Fatati, and W. I. Magfiroh, "The analysis of the impact of inflation, exchange rate, and the Indonesian composite index on the return of mutual funds of PT Nikko Securities between 2014 and 2017," *J. Aktual Akunt. Keuang. Bisnis Terap.*, vol. 2, no. 2, pp. 103–109, 2019, doi: 10.32497/akunbisnis.v2i2.1657.

[8] L. Cheng and K. Dewi, "The effects of inflation, risk, and money supply on mutual funds performance," *J. Appl. Financ. Account.*, vol. 7, no. 2, pp. 29–34, 2020, doi: 10.21512/jafa.v7i2.6381.

[9] S. T. Ramadhanti and T. Siswantini, "Analysis of the effect of inflation and assets under management on the performance of equity mutual funds in Indonesia," *Budapest Int. Res. Critics Institute-Journal*, vol. 5, no. 1, pp. 4835–4849, 2022, [Online]. Available: https://www.bircu-journal.com/index.php/birci/article/view/4190

[10] D. W. Pratama, "The effects of asset under management, Sharpe ratio, inflation, and IHSG on the performance of stock and fixed-income mutual funds from 2012 to 2017," *Adv. Econ. Business, Manag. Res.*, vol. 187, pp. 112–114, 2021, doi: 10.2991/aebmr.k.210831.023.

[11] I. M. Rizki, D. S. Danisworo, T. Djuwarsa, and H. A. Mauluddi, "The analysis of the effect of the internal and external factors on the performance of Shariah fixed-income mutual funds," *J. Appl. Islam. Econ. Financ.*, vol. 3, no. 2, pp. 313–322, 2023, doi: 10.35313/jaief.v3i2.3758.

[12] P. D. Aryadi and W. P. Setyono, "Mutual fund performance: The impact of the stock market, interest rate, and inflation," *Acad. Open*, vol. 7, pp. 1–6, 2022, doi: 10.21070/acopen.7.2022.3445.

[13] M. Ilyas and A. Shofawati, "The influence of inflation, IDR/USD exchange rate, and BI Rate on the net asset value of Shariah-protected mutual funds in Indonesia between 2014-2018," *J. Ekon. Syariah Teor. dan Terap.*, vol. 6, no. 9, pp. 1830–1839, 2019, doi: 10.20473/vol6iss20199pp1830-1839.

[14] M. Titi, U. Salim, S. Sumiati, and R. Wijayanti, "Indonesian mutual funds: Performance determinants and interaction of macroeconomic factors," *Int. J. Revenue Manag.*, vol. 12, no. 1–2, pp. 83–103, 2021, doi: 10.1504/ijrm.2021.114967.

[15] BRI Manajemen Investasi, “Layanan Jasa Keuangan,” Danareksa. [Online]. Available: https://danareksa.co.id/layanan/jasa-keuangan/pt-bri-manajemen-

investasi
[16] S. Basu and A. Joshi, "How does inflation affect fixed-income investments?," Forbes Advisor. [Online]. Available: https://www.forbes.com/advisor/in/investing/how-does-inflation-affect-fixed-income-investments/
[17] M. I. Permatasari, "The effect of inflation, BI rate, exchange rate of IDR/USD, economic growth, and operational expense ratio on the fixed-income mutual funds in the Indonesian capital market," *J. Ilm. Univ. Bakrie*, vol. 2, no. 5, 2014, [Online]. Available: https://media.neliti.com/media/publications/251709-pengaruh-inflasi-suku-bunga-bi-kurs-usd-13796f15.pdf
[18] S. Sukirno, *Macroeconomics: The introduction*, 3rd ed. Depok: Rajawali Pers, 2019.
[19] J. Hartono, *Business Research Methodology: Misunderstandings and Experiences*, 6th ed. Yogyakarta: Badan Penerbit Fakultas Ekonomi Universitas Gadjah Mada, 2014.
[20] F. Firdaus, *Quantitative Research Methodology*. Bengkalis: CV. DOTPLUS Publisher, 2021.
[21] I. Ghozali, *Multivariate Analysis Application by IBM SPSS 26*, 10th ed. Semarang: Badan Penerbit Universitas Diponegoro, 2021.