

Analysis of Factors Affecting Foreign Portfolio Investment in Indonesia for the Period 2005-2023

Any Widayatsari¹, Cut Endang Kurniasih², Desrita Angelica³

^{1,2,3}Program Studi S1 Ekonomi Pembangunan, Universitas Riau, Indonesia

Corresponding Author: Desrita Angelica, e-mail: desrita.angelica2565@student.unri.ac.id

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ABSTRACT

This study aims to analyze the factors that affect foreign portfolio investment (FPI) in Indonesia. This research is motivated by the discovery of a phenomenon where there is a downward trend in portfolio investment and is not in line with the gross domestic product which has increased. This is not in accordance with asset demand theory and Harry Markowitz theory. The research method used is the Autoregressive Distributed Lag (ARDL) model processing technique which aims to see the factors that affect foreign portfolio investment in the long term and short term. The results showed that in the short term the BI Rate has a negative and significant effect on foreign portfolio investment in Indonesia and the exchange rate has a negative and significant effect on foreign portfolio investment in Indonesia. In the long term Gross Domestic Product (GDP) and Inflation have a negative and insignificant effect on foreign portfolio investment in Indonesia, interest rate BI Rate has a positive and significant effect on foreign portfolio investment in Indonesia and the exchange rate has a negative and significant effect on foreign portfolio investment in Indonesia. From these results it is suggested that the government needs to maintain the stability of the BI Rate and exchange rate, and the government also needs to create a conducive portfolio investment climate.

Keywords: *Foreign Portfolio Investment, Gross Domestic Product, Inflation, Interest Rate BI Rate, Exchange Rate*

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INTRODUCTION

Increasing globalization has encouraged foreign capital flows to various developing countries (Wardhono et al., 2020). Global economic openness has also mobilized cross-border capital flows, including in the ASEAN region, where Indonesia attracts investors due to its large population and low production costs. Foreign investment is divided into two types: Foreign Direct Investment (FDI), which is long-term, and Foreign Portfolio Investment (FPI), which is more liquid and volatile. FPI plays an important role in international financial flows and economic growth in various countries (Winona et al., 2016; Alhusna et al., 2016).

As an added benefit, foreign portfolio investment (FPI) increases capital market liquidity and helps develop efficiency and strengthen domestic markets and improve the functioning of monetary authorities in the country. The following table 1.1 presents an overview of Indonesia's foreign portfolio investment compared to other ASEAN member countries.

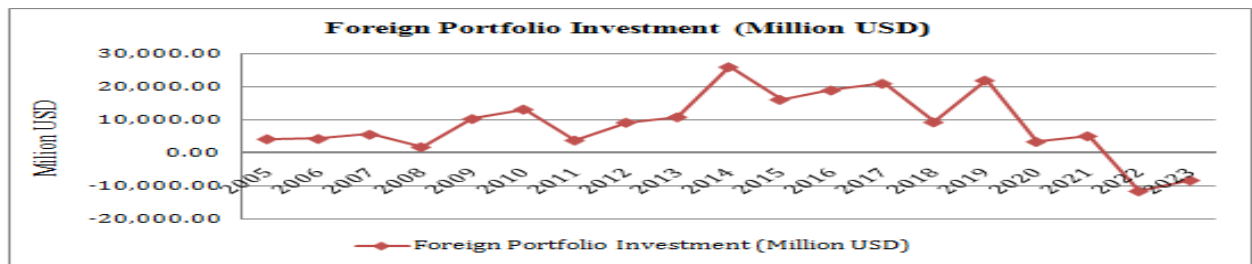
Table 1: Comparison of Foreign Portfolio Investment in Indonesia and ASEAN Countries 2022-2023

Country	Foreign Portfolio Investment In 2022 (US\$. Million)	Foreign Portfolio Investment In 2023 (US\$. Million)
Singapura	4,813,389	1,075,287
Filipina	-446,353	157,298
Malaysia	-32,882	-272,36
Thailand	2,174,018	-1,373,52
Vietnam	28,000	224,250
Indonesia	-11,631	-8,330

Source: CEIC Data, ASEAN secretariat and Author's Processed Data, 2023.

Based on the data in Table 1 above, Indonesia's foreign portfolio investment decreased by \$-11,631 million in 2022. However, this amount is much lower compared to Singapore which predominantly received FPI of \$4,813,389 million and Thailand which received FPI of \$2,174,018 million in the same period. From these figures, it can be concluded that there is an indication that Indonesia is not yet safe in making investments, this is due to the tightening of monetary policy by the government and the decline in FPI is also due to the pressure of foreign capital inflows into the government securities market and the uncertainty of global financial markets influenced by improving global risks and tightening monetary policy in developed countries, resulting in the level of investment risk in Indonesia at the level of 23.5% and making investors less interested in making portfolio investments in Indonesia (Financial Services Authority (OJK) and Ministry of Investment and Downstream, 2022). In this case, it is time or appropriate for the government to prioritize encouraging foreign portfolio investment (FPI) in Indonesia.

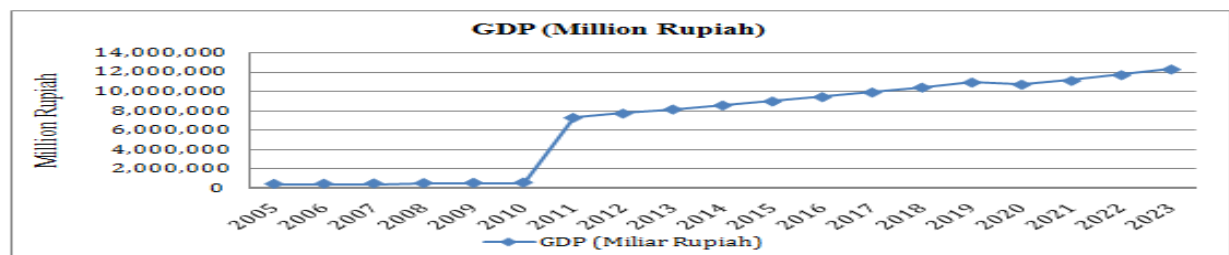
Based on the Decree of the Minister of Finance No. 455/KMK.01/1997 on the purchase of shares by foreign investors through the capital market, the Indonesian government made efforts to increase foreign portfolio investment. The Indonesian government also considers that foreign portfolio investment can be used as financing for domestic sector development and can also encourage the growth of the local stock exchange (Sinurat, 2010). To see the ups and downs or the size of investment in a country can be seen based on asset demand theory and Harry Markowitz theory. In making foreign portfolio investments, investors will definitely see or analyze the risk first to see the expected rate of return.



Source: Bank Indonesia, 2024

Figure 1: Indonesia's Foreign Portfolio Investment 2005-2023

Figure 1 below illustrates the current implementation of portfolio investment in Indonesia 2004-2023. It can be seen below that foreign portfolio investment in Indonesia fluctuates every year with the highest increase in foreign portfolio investment last in 2014 and experienced a significant decline starting from the beginning of 2020 at the beginning of the covid-19 pandemic entering Indonesia until the lowest decline occurred in 2022. Positive points can mean that foreign investors channel their funds (*inflow*) in foreign portfolio investment instruments in Indonesia while negative points mean that foreign investors withdraw funds (*outflow*) or sell their assets such as securities, bonds and others (Kurdiansyah *et al.*, 2018). Gross Domestic Product (GDP) is the monetary value of all goods and services produced by a country within a certain period. GDP is used to measure the size, structure, and stability of a country's economy. A high GDP indicates economic growth and attracts foreign investors, especially those who tend to avoid risk. Based on asset demand theory, GDP is positively correlated with asset demand in the form of wealth; the higher the wealth, the higher the demand for assets. Mustofa's (2024) research states that an increase in GDP reflects an increase in income and national development, which ultimately attracts more investors.

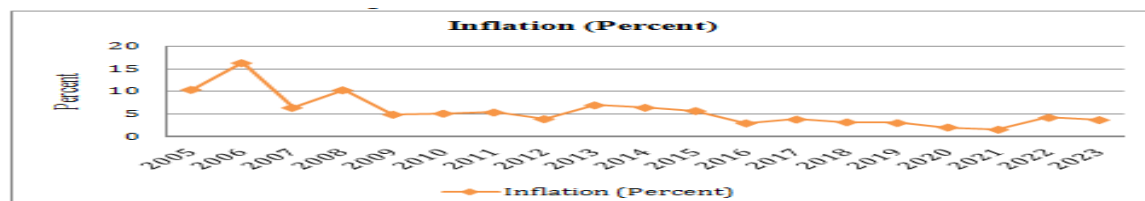


Source: Statistics Indonesia, 2024

Figure 1. 2: Indonesia's Gross Domestic Product 2005-2023

Based on figure 2 below in 2019 to 2020, GDP managed to stabilize even though there was a slight decline that was not too significant due to economic shocks due to the covid-19 pandemic which began to occur in early 2020 in Indonesia. Then Indonesia's GDP slowly increased in 2021. However, it can also be seen from the comparison between Figure 1 and Figure 2 where based on the asset demand theory, if GDP increases, FPI will also increase, but from the data obtained, there is a phenomenon in 2022 where GDP increases but in fact FPI actually experiences a significant decline at -11.631 and this is not in line with asset demand theory. As well as inflation is also closely related

to the FPI where based on asset demand theory and Markowitz theory also explains where inflation is one of the risk factors in making portfolio investments where inflation is related to expected return. if inflation expectations increase, the demand for real assets and portfolio investment increases.

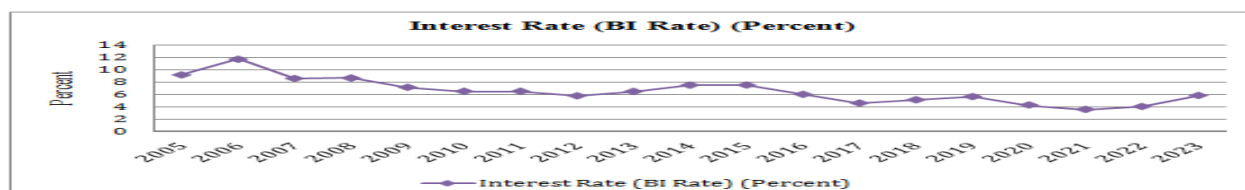


Source: Statistics Indonesia, 2024

Figure 3: Inflation In Indonesia Year 2005-2023

Referring to Figure 3 Indonesia's inflation is relatively fluctuating, in 2013 the highest inflation reached 6.97% where this increase occurred due to an increase in fuel oil (BBM) which is a form of subsidy reduction policy. And in 2021 the lowest inflation reached 1.56% due to the entry of the co-19 pandemic in Indonesia. Low and stable inflation will be an option for investors in making investments. Meanwhile, high inflation will reduce investor confidence because high inflation has a bad effect on the economy in Indonesia. According to Siregar in Dharmawa (2021), inflation refers to the vulnerability of a country's economy, which is one of the factors driving investor confidence in the prospect of income obtained from foreign portfolio investments made. inflation is a problem that is often experienced by various countries where inflation is defined as the tendency of prices to rise generally and continuously over a certain period. Referring to Figure 1 with Figure 3 where inflation has increased and FPI has also experienced a downward trend, this is in line with existing theory.

Another factor that can affect portfolio investment is interest rates (BI Rate). As well as interest rates are also closely related to FPI where based on asset demand theory and Markowitz theory also explains where interest rates are one of the risk factors in making portfolio investments, where interest rates are related to expected return. Where if interest rates increase or jump, the level of expected return will decrease. The BI rate is believed to have an impact on the level of portfolio investment in the economy. If the interest rate exceeds the potential profit from the planned investment, then the income earned from the investment will not be tangible, it will encourage the company to postpone or stop its investment plan (Sukirno, 2010). The BI rate can be used as a measure of monetary policy conducted by Bank Indonesia.

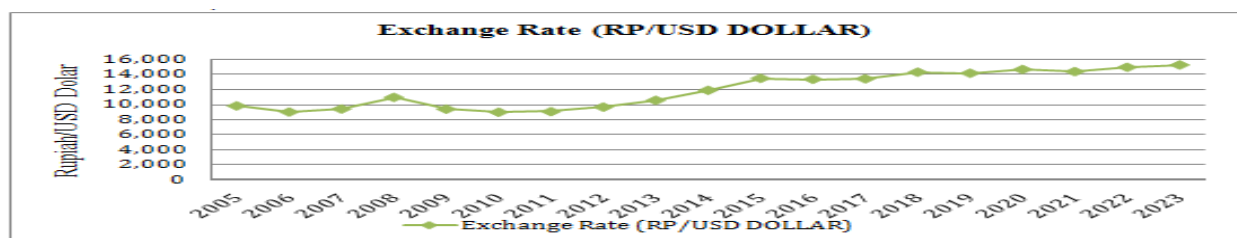


Source: Bank Indonesia 2024

Figure 4: Interest Rate (BI Rate) In Indonesia 2005-2023

In Figure 4 the BI rate experienced fluctuating movements. In 2014-2015 the BI rate experienced the highest increase to 7.50%-7.52%. Then, in 2021 it decreased to 3.52%, this was due to the covid-19 pandemic in Indonesia. High interest rates are very attractive to investors in making investments compared to countries with low interest rates. High interest rates can mean large returns (Suhendra and Istikomah, 2016). Referring to Figure 1 with Figure 4 where interest rates have increased and the FPI has also experienced a downward trend, this is in line with existing theory.

Exchange rates are one of the factors that influence portfolio investment. The depreciation of the rupiah against the US dollar can have a negative impact on the economy and capital markets, as it increases company costs and reduces profits. Based on asset demand theory and Markowitz theory, exchange rates are considered a risk factor in portfolio investment, as they affect expected returns. If exchange rates are unfavorable when converting currencies, investment income can be significantly affected (Thorbecke, 2021).



Source: Bank Indonesia 2024

Figure 5: Exchange Rate of Rupiah against US Dollar in 2005-2023

Figure 5 shows that the exchange rate is relatively stable, with the lowest value in 2013 at Rp10,563 per USD and the highest in 2023 at Rp15,219 per USD. Foreign portfolio investments are short-term and vulnerable to global and domestic economic dynamics. Even minor shocks can trigger high volatility, as was the case during the COVID-19 pandemic, which led to massive capital outflows. This, led to a sharp depreciation of the rupiah exchange rate. Referring to Figure 1 with Figure 5 where the exchange rate depreciates and the FPI also experiences a downward trend, this is in line with existing theory.

Moreover, this is in line with the findings of Suhendra and Istikomah (2016), who found that inflation significantly increases portfolio investment. Hadi *et al* (2018), reported that interest rates have a significant effect on portfolio investment. As well as Dharmawan (2021), reported a negative significant relationship of exchange rates and inflation to portfolio investment, and GDP a positive significant relationship to portfolio investment. similar research was also conducted by Ekeocha *et al* (2012), Waqas *et al* (2015), Alhusna *et al* (2016), and Saputra (2023).

Thus, based on the explanation above regarding the background of this study. researchers are interested in conducting this research in order to develop research on this topic with the title

“Analysis of Factors Affecting Foreign Portfolio Investment in Indonesia for the Period 2005-2023”.

Theoretical Foundation

Portfolio Investment

According to UNCTAD in Lane and Milesi (2007), portfolio investment refers to the transfer of financial assets or buying and selling of assets by individuals living or residing in certain countries, which is carried out in the form of direct acquisition of company assets or indirectly through participation in financial markets. In this portfolio investment also involves several parties, both individuals, companies and entities from one country that invest in securities published by other countries.

The investment theories that form the basis of this research are:

1. Asset Demand Theory

Asset demand theory is an economic theory that examines portfolio theory. Asset demand theory refers to different types of holdings that act as stores of value. Assets include a wide array of tangible and intangible resources, including but not limited to monetary funds, bonds, stocks, art creations, real estate properties, agricultural equipment, and industrial equipment (Mishkin, 2016).

2. Harry Markowitz Theory

According to Markowitz in Wen (2023), portfolio theory was first created by Harry Markowitz in 1952. Harry Markowitz officially established the basic principles of portfolio selection in the early 1950s, a framework commonly referred to as Markowitz Portfolio Theory. Portfolio theory is a widely recognized concept in finance that focuses on the optimal allocation of assets in an investment portfolio. Markowitz asserted that risk is perceived as an undesirable problem by investors. Markowitz emphasizes that a well-managed portfolio combines a balance of risk and return in the most optimal way. This theory proposes a model that generates a portfolio through a process based on the concept of mean-variance, which refers to the expected return and variance used as a measure of risk (Nurhaliza, 2021).

Gross Domestic Product (GDP)

Gross Domestic Product in an economy is the total market value of all goods or services produced from a country within a certain period of time. Gross Domestic Product is a measure of productivity and economic prospects in a country that describes economic growth (Mankiw, 2021). Gross Domestic Product or GDP is the total value of all goods and services produced by a country from all sectors in a certain period, usually in one year or per quarter. According to Mankiw (2004), Gross Domestic Product is the market value of all final goods and services produced in the economy

during a certain period of time, to measure the total income of an economy and the total expenditure on goods and services.

Inflation

According to Siregar in Titis and Dhea (2024), inflation is an indicator that shows the level of economic vulnerability in a country, which has a significant impact on the confidence of foreign investors in assessing the prospects for profit to be obtained when they invest in the country. According to Sukirno, inflation is a process when there is an increase in prices that apply to the economy. In economics, inflation is a process of increasing prices in general and continuously related to market mechanisms that can be caused by various factors, including increased public consumption, excess liquidity in the market that triggers consumption or even speculation, to include the effects of the uninterrupted distribution of goods.

Interest Rate (BI Rate)

Based on the decision of the Board of Governors Meeting (RDG), Bank Indonesia issues a decision on interest rates, which is one of the tools for conducting monetary policy to provide direction or guidance on interest rate references referred to as the BI Rate. This BI rate applies on a quarterly or monthly basis where the BI rate also functions as a reference or guideline and reference used by various financial and banking industries in setting interest rates on savings or loans.

Exchange Rate

According to Mankiw (2007), the exchange rate between two countries is the price of the currency used by residents of these countries to trade with each other. Abimanyu (2004) states that the exchange rate is the price of a currency relative to the currency of another country, and because this exchange rate includes two currencies, the equilibrium point is determined by the supply and demand of both currencies. The exchange rate or exchange rate is the exchange rate between two countries that the residents of the two countries agree to trade with each other.

RESEARCH METHOD

The research used to conduct the study is a linear regression model with the Autoregressive Distributed Lag (ARDL) model technique which is used to see the effect of dependent and independent variables over time including the effect of dependent variables from the past on the present dependent value and allows for modeling long and short-term relationships between relevant variables. In this study, taking into account the characteristics of this study, the ARDL method is considered a more appropriate and informative method to achieve the objectives of this study. In conducting this research also uses Eviews 10 computer software as a tool in conducting the analysis.

1. Stationer Test (Unit Root Test)

Before performing the ARDL model regression to determine whether or not the method is appropriate to use in this method. Stationarity test is used to determine whether the observed data is stationary before performing regression analysis. Stationarity is one of the important prerequisites in analyzing time series data. Time series data can be said to be stationary if it has a fixed mean and variance over time, and the covariance between two points in the time series is also fixed (Widarjono, 2018).

2. Lag Determination and Model Estimation

Lag determination is the process of determining the number of lags to be used in the ARDL model. Lag refers to the time lag between changes in the independent variable and its impact on the dependent variable. Selecting the appropriate lag is important to avoid inaccurate estimation results (Gujarati & Porter, 2012). Once the number of lags has been determined, the ARDL model can be estimated using the prepared data, where the dependent variable is explained by the independent variable and its lags through the ARDL regression equation (Laloan et al., 2023).

$$Y_t = \alpha + \alpha_1 Y_{(t-1)} + \dots + \alpha_p Y_{(t-p)} + \beta_1 GDP_{(t-1)} + \dots + \beta_1 GDP_{(t-q)} + \beta_2 INF_{(t-1)} + \dots + \beta_2 INF_{(t-q)} + \beta_3 IT_{(t-1)} + \dots + \beta_3 IT_{(t-q)} + \beta_4 ER_{(t-1)} + \dots + \beta_4 ER_{(t-q)} + \varepsilon_t$$

3. Diagnostic Test

Classical assumption test is used in providing certainty of consistency, accuracy in estimation, and unbiasedness of the regression equation obtained. The classical assumption test tests whether the residuals are normally distributed, detects normality, tests whether there is heteroscedasticity, and also whether or not there is an autocorrelation problem (Gujarati and Porter, 2012).

4. Cointegration Test

The ARDL model is used to analyze the long-term relationship between two or more variables. There are two types of cointegration tests that can be performed using the ARDL model, namely the Long Run Form cointegration test and the Bounds Test. The Long Run Form cointegration test is used to test the hypothesis of whether there is a stable long-term relationship between the variables in the ARDL model. While the Bounds Test is a stronger hypothesis test, as it can test whether there is one or more stable short-run relationships and whether the relationship is cointegrated (Gujarati and Porter, 2012).

5. Parameter Stability Test

The parameter stability test aims to evaluate whether the regression parameters in the ARDL regression model remain stable over the observed time period or not. This is important because if the regression parameters are unstable, then the prediction results produced by the model cannot be relied upon (Gujarati and Porter, 2012). Parameter stability testing in this study will use CUSUM and CUSUMQ because of their ability to measure the accumulated difference between the actual value and the predicted value in a period of time. In this test, a reference line will be formed based on the average value of regression coefficients in all observed time periods.

FINDINGS AND DISCUSSION

1. Stationarity Test (Unit Root Test)

The first stage that needs to be done in testing using the ARDL model is the stationarity test. In this study, the stationarity test was conducted using the unit root test proposed by Dickey and Fuller, namely the Augmented Dickey-Fuller (ADF) test. The ADF stationarity test results can be seen in the table below.

Table 1: Level Data Stationarity Results

Intermediate ADF test results DATA01

Series	Prob.	Lag	Max Lag	Obs	Keputusan
X1_GDP	0.7068	1	11	74	Not stationary
X2_IF	0.1150	1	11	74	Not stationary
X3_IRBIRATE	0.1766	2	11	73	Not stationary
X4_ER	0.9028	0	11	75	Not stationary
Y_IP	0.0000	0	11	75	Stationary

Source: Eviews output (Eviews 10), data processed (2025)

Table 2 shows the results of the unit root test using the Augmented Dickey-Fuller (ADF) method. Only variable Y is stationary at the level, while the other variables are not stationary because their probability values are greater than 0.05. This indicates that these variables still contain unit roots, so further stationarity tests are required at the first difference level, the results of which are shown in the next table.

Table 2: First Different Stationarity Results

Series	Prob.	Lag	Max Lag	Obs	Keputusan
D(X1_GDP)	0.0001	0	11	74	Stationary first different
D(X2_IF)	0.0000	5	11	69	Stationary first different
D(X3_IRBIRATE)	0.0000	1	11	73	Stationary first different
D(X4_ER)	0.0000	1	11	73	Stationary first different
D(Y_IP)	0.0000	1	11	73	Stationary first different

Source: Eviews output (Eviews 10), data processed (2025)

The table 3 above shows the results of the unit root test using the Augmented Dicky Fuller (ADF) testing model. This can be seen from the probability of each variable that has been stationary which is small than 0.05, so it can be said that the data above has been stationary in the first different, so it is assumed that cointegration will occur.

2. Cointegration Bounds Test

Table 3: Bound Test Result (Cointegration Test)

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	11.025574	10%	2.2	3.09
		5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Source: Eviews output (Eviews 10), data processed (2025)

The table 4 above shows the results F statistics value of 11.025574 is greater than the critical limit of 3.49, so it can be concluded that there is cointegration in this Eviews ARDL model. So far, all the analysis carried out has met the requirements so that the ARDL model.

3. Cointegration Johansen Test

The Johansen cointegration test is conducted to test whether variables that are not stationary at the data level are cointegrated between one variable and another..

Table 4: Result Cointegration Johansen Test

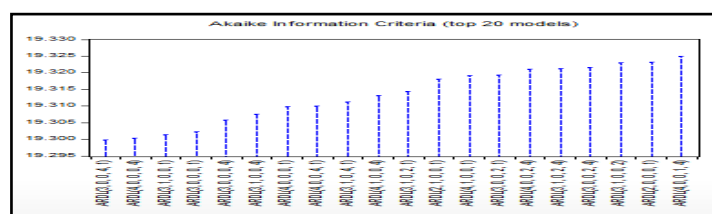
Hypothesized No. of CE(s)	Eigenvalue	Max-Eigen Statistic	0.05 Critical Value	Prob.**
None	0.362579	32.87372	33.87687	0.0655
At most 1	0.298632	25.89477	27.58434	0.0809
At most 2	0.122740	9.559448	21.13162	0.7849
At most 3	0.092289	7.068556	14.26460	0.4811
At most 4	0.005257	0.384787	3.841466	0.5351

Source: Eviews output (Eviews 10), data processed (2025)

Based on the results of the Johansen Test cointegration analysis table 5 above shows the results above, there is a p value greater than 0.05, namely at At most 4 of 0.5351, so it is concluded that there is no cointegration. So this result shows that the model fits the criteria, namely that there is no cointegration based on the Johansen Test.

4. Optimum Lag Test

In testing with the ARDL model, the research is faced with selecting the number of lags that will be used as a reference in the next testing stage. The optimum lag test is needed in order to obtain the best results in the ARDL model. To determine the optimal lag in the test, the Akaike Information Criteria (AIC) is used. Based on these criteria, the test results on the optimal lag length obtained are:



Source: Eviews output, data processed (2025)

Figure 6: Optimum Lag Testing Results

Based on the test results figure 6 above, the estimated lag selection criteria by looking at the smallest Akaike Information Criteria (AIC) value of the 20 best models. It appears based on the graph above, that the Optimum Lag used with the lowest AIC criteria is the ARDL (3,0,0,4,1) model.

5. Model Estimation

After all variables are stationary, then proceed with the ARDL estimation of the Akaike Info Criterion (AIC) model. In this study using the ARDL model (3,0,0, 4,1), the following results were obtained:

Table 5: ARDL Model Estimation

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
D(Y_IP(-1))	-0.728886	0.120206	-6.063644	0.0000
D(Y_IP(-2))	-0.407169	0.137045	-2.971066	0.0043
D(Y_IP(-3))	-0.246806	0.114357	-2.158205	0.0351
D(X1_GDP)	-0.000324	0.001338	-0.242224	0.8095
D(X2_IF)	-152.7997	243.8302	-0.626664	0.5333
D(X3_IRBIRATE)	1091.136	1298.565	0.840263	0.4042
D(X3_IRBIRATE(-1))	2609.128	1650.704	1.580615	0.1194
D(X3_IRBIRATE(-2))	-1952.884	1339.523	-1.457895	0.1503
D(X3_IRBIRATE(-3))	-405.0397	1278.188	-0.316886	0.7525
D(X3_IRBIRATE(-4))	1810.706	988.3077	1.832128	0.0721
D(X4_ER)	-5.136664	1.081391	-4.750051	0.0000
D(X4_ER(-1))	2.267677	1.152617	1.967416	0.0539
C	494.8156	457.4547	1.081671	0.2839
R-squared	0.581284	Mean dependent var		16.95338
Adjusted R-squared	0.494654	S.D. dependent var		4866.813
S.E. of regression	3459.706	Akaike info criterion		19.29972
Sum squared resid	6.94E+08	Schwarz criterion		19.71401
Log likelihood	-672.1399	Hannan-Quinn criter.		19.46447
F-statistic	6.709905	Durbin-Watson stat		2.059380
Prob(F-statistic)	0.000000			

Source: Eviews output (Eviews 10), data processed (2025)

Substitute the parameter coefficient values into the model estimates that have been obtained, the ARDL model regression equation is as follows:

$$Y_t = 494.8156 - 0.728886 Y_{t-1} - 0.407169 Y_{t-2} - 0.246806 Y_{t-3} - 0.000324 X_1 - 152.7997 X_2 + 1091.136 X_3 + 2609.128 X_{3(t-1)} - 1952.884 X_{3(t-2)} - 405.0397 X_{3(t-3)} + 1810.706 X_{3(t-4)} - 5.136664 X_4 + 2.267677 X_{4(t-1)}$$

6. Short-Term Hypothesis Testing

After seeing the cointegration between the variables under study, short-term ARDL estimation is then conducted. The test is conducted to determine the short-term relationship between the independent variable and the dependent variable. The short-term ARDL estimation results usually only illustrate the imbalance condition. The results are obtained as follows:

Table 6: Short-Term Testing Results

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(Y_IP(-1), 2)	0.653975	0.205841	3.177090	0.0024
D(Y_IP(-2), 2)	0.246806	0.105264	2.344634	0.0225
D(X3_IRBIRATE, 2)	1091.136	1045.294	1.043856	0.3009
D(X3_IRBIRATE(-1), 2)	547.2176	881.6253	0.620692	0.5372
D(X3_IRBIRATE(-2), 2)	-1405.666	813.3162	-1.728315	0.0893
D(X3_IRBIRATE(-3), 2)	-1810.706	829.1002	-2.183941	0.0330
D(X4_ER, 2)	-5.136664	0.745714	-6.888250	0.0000
CointEq(-1)*	-2.382860	0.281103	-8.476811	0.0000

Source: Eviews output (Eviews 10), data processed (2025)

So based on the output of the short-term equation table 7 above, it can be concluded as follows:

- If X3_IRBIRATE in the current period is 1091.136. with P value of 0.3009 > 0.05. this indicates a positive and insignificant effect of interest rate on FPI. It means, 1 percent increase in FPI leads to 1091.136 billion USD increase, with insignificant effect at 5% level.
- If X3_IRBIRATE (-1) in one period is 547.2176. with P value of 0.5372 > 0.05. this indicates a positive and insignificant effect of the previous quarter's interest rate on FPI. It means, 1

percent increase in quarterly interest rate increases FPI by 547.2176 billion USD in the current period, with insignificant effect at 5% level.

- c) If X3_IRBIRATE (-2) in the second period is -1405.666. with P value of $0.0893 > 0.05$. this indicates a negative and insignificant effect of interest rates on FPI. It means, 1 percent increase in interest rate two quarters earlier reduces FPI by -1405.666 billion USD, with insignificant effect at 5% level.
- d) If X3_IRBIRATE (-3) in the third period is -1810.706. with a P value of $0.0330 \leq 0.05$. this indicates a negative and significant effect of interest rates on FPI. This means, a 1 percent increase in interest rates three quarters earlier reduces FPI by -1810.706 billion USD, with a significant effect at the 5% level.
- e) If X4_ER in the current period is -5.136664. with a P value of $0.0000 \leq 0.05$. this indicates a negative and significant effect of exchange rates on FPI. This means, an increase of 1 IDR/USD Dollar reduces FPI by -5.136664 billion USD, with significant effect at 5% level.

7. Long-Term Hypothesis Testing

After conducting the short-term ARDL test, the next is the long-term ARDL test. The test is used to determine the long-term relationship between the independent variable and the dependent variable. The results are obtained as follows:

Table 7: Long-term Testing Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(X1_GDP)	-0.000136	0.000565	-0.240904	0.8105
D(X2_IF)	-64.12448	101.5828	-0.631254	0.5304
D(X3_IRBIRATE)	1323.219	623.4298	2.122483	0.0381
D(X4_ER)	-1.204010	0.590665	-2.038399	0.0461
C	207.6562	191.5167	1.084272	0.2827

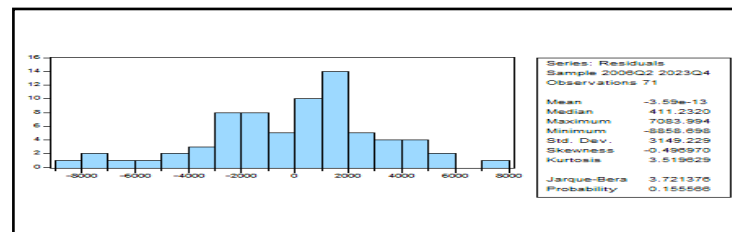
Source: Eviews output (Eviews 10), data processed (2025)

So based on the output of the long-term equation table 8 above, it can be concluded as follows:

1. If X1 increases by one unit and X1_GDP is assumed constant, then in the long run Y will increase by -0.000136. However, this long-term effect is not significant or rejected H0 because the prob value or p value is $0.8105 > 0.05$.
2. If X2 increases by one unit and X2_IF is assumed constant, then in the long run Y will decrease by -64.12448. And this long-term effect is not significant or rejected H1 because the prob value or p value is $0.5304 > 0.05$.
3. If X3 increases by one unit and X3_IRBIRATE is assumed constant, then in the long run LN_Y will increase by 1323.219. And this long-term effect is significant or accept H1 because the prob value or p value is $0.0381 \leq 0.05$.
4. If X4 increases by one unit and X4_ER is assumed constant, then in the long run Y will increase by -1.204010. And this long-term effect is significant or accept H1 because the prob value or p value is $0.0461 \leq 0.05$.

8. Normality Test

The significance test of the effect of the independent variable on the dependent variable will be valid if the research data is normally distributed. The normality test in this study was carried out using the Jarque-Bera (JB) method. Normality test results



Source: Eviews output (Eviews 10), data processed (2025)

Figure 7: Normality Test Results

Based on the output figure 7 above, the p value or probability Jarque Bera Test on the residuals is $0.155566 > 0.05$, so it meets the normality requirements. However, if not normality can be ignored, because the number is large which is more than 30, then this problem can be ignored.

9. Heteroscedasticity Test

The heteroscedasticity test in this study uses Breusch-Pagan-Godfrey by comparing the probability value of Obs*R-Square with its critical value ($\alpha = 5\%$).

Table 8: Heteroscedasticity Test Results

Heteroskedasticity Test: Breusch-Pagan-Godfrey			
F-statistic	0.167692	Prob. F(12,58)	0.9991
Obs*R-squared	2.380739	Prob. Chi-Square(12)	0.9986
Scaled explained SS	2.001509	Prob. Chi-Square(12)	0.9994

Source: Eviews output (Eviews 10), data processed (2025)

Based on the output of heteroscedasticity analysis using Breusch Pagan Godfrey as above, the p value of 0.9994 is greater than 0.05, so there is no heteroscedasticity problem.

10. Autocorrelation Test

The autocorrelation test aims to see the correlation between the error variables of one observation and another observation. This serial correlation test is carried out using the Breusch-Godfrey Serial Correlation LM Test method. The results of the autocorrelation test can be seen in the table below.

Table 9: Autocorrelation Test Results

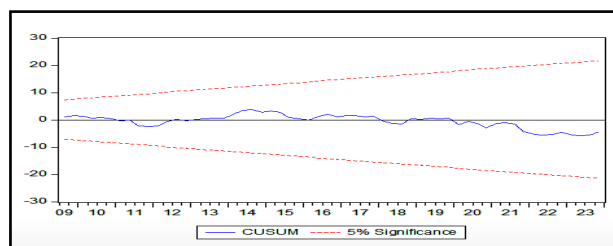
Breusch-Godfrey Serial Correlation LM Test:			
F-statistic	0.759484	Prob. F(2,56)	0.4727
Obs*R-squared	1.874977	Prob. Chi-Square(2)	0.3916

Source: Eviews output (Eviews 10), data processed (2025)

in Figure 8 also show the same results. Therefore, it can be concluded that the research model is stable. Based on the output of the autocorrelation analysis using the Breusch Godfrey LM Test as table 9 above, the p value of 0.3916 is greater than 0.05, so there is no autocorrelation problem.

11. Model Stability Test

The results of the CUSUM model stability test in 8 show that the model is stable and suitable for use as a reference in determining the long-term relationship between variables. The results of the model stability test are shown by the CUSUM line (blue) which is still between the 5% significance line (red). The CUSUMQ test results



Source: Eviews output (Eviews 10), data processed (2025)

Figure 8: CUSUM Test Results

DISCUSSION

1. Effect of GDP on Foreign Portfolio Investment

In this study found ARDL analysis shows that the GDP variable has a maximum lag of 0, which means it is not influenced by the previous quarter's data. The statistical processing results show that in the short term GDP does not appear in the model. This can be interpreted that GDP cannot directly explain or describe the effect on FPI in the short term. Meanwhile, in the long term, GDP has a negative and insignificant effect. This is not in line with asset demand theory, where based on asset demand theory GDP is positively correlated to portfolio investment. Asset demand theory explains that if GDP increases, FPI will also increase because an increasing GDP indicates a well-growing economy, which increases foreign investors' confidence in the domestic financial market. As a result, FPI inflows tend to increase. Likewise, on the contrary, if GDP decreases, FPI will also decrease because a declining GDP indicates an economic slowdown and increased investment risk, which can cause FPI outflows (Putri and Sitorus, 2023). Markowitz's theory also explains the same thing where if GDP increases, FPI will also increase because an increasing GDP indicates better investment opportunities in the domestic market, encouraging foreign investors to put FPI into stocks and bonds. Likewise, on the other hand, if GDP decreases, FPI will also decrease because GDP growth is accompanied by economic instability or high risk increases, and foreign investors may withdraw their funds or allocate them to other countries with lower risk profiles (Dharmawan, 2021).

This research is in accordance with previous research conducted by Halifah Hadi et al. (2018), Saputra (2016) and Kurdiansyah Wisandani, and Nasrulloh (2021) found that GDP has an insignificant effect on Foreign Portfolio Investment in Indonesia because the increase in GDP is not accompanied by policies that provide legal certainty in investing such as frequent and inconsistent

changes in regulations can create uncertainty for investors. This uncertainty can reduce investor interest in investing in Indonesia's financial markets and Lack of transparency and adequate information disclosure can hinder making the right investment decisions. Investors need accurate and complete information to make informed investment decisions (Bank Indonesia, 2023).

2. The Effect of Inflation on Foreign Portfolio Investment

In this study found ARDL analysis shows that the inflation variable has a maximum lag of 0. The statistical processing results show that in the short term inflation does not appear in the model. This can be interpreted that inflation cannot directly explain or describe the effect on FPI in the short term. Meanwhile, in the long term, inflation has a negative and insignificant effect. This is in line with asset demand theory and Markowitz theory, both of which explain that inflation is negatively correlated with portfolio investment. Where inflation on the side of asset demand theory, if inflation increases then the portfolio also decreases because purchasing power decreases and economic risk becomes high. Thus inflation must be kept stable and under control so that portfolio investment will increase because foreign investors are more interested or more confident to invest in the country's financial assets that are more stable inflation whose value of money and investment returns are more predictable (Putri and Sitorus 2023). And also inflation on the Markowitz theory side explains High inflation increases economic uncertainty, which makes domestic assets less attractive because the real value of returns can decrease due to rising prices of goods and services. If inflation is too low or deflation occurs, it can signal weak economic demand, which can also reduce the interest of foreign investors (Dharmawan, 2021).

This is in accordance with the results of previous research in the long term has a negative and insignificant effect conducted by Dewi and Cahyono (2016), Andreano (2018), and Setiawan and Gunarsih (2023) research which says that the inflation rate has an insignificant effect on foreign portfolio investment in Indonesia, it is caused by fluctuations in inflation not directly affecting foreign investors' decisions to invest in Indonesia so that inflation is not the main factor considered by foreign investors in portfolio investment decisions in Indonesia.

3. Effect of BI Rate on Foreign Portfolio Investment

In this study found ARDL analysis shows that the bi rate variable has a maximum lag of 4 meaning it is influenced by the previous quarter's data. The statistical processing results show that in the current year and one previous period, the BI rate has a positive and insignificant effect on portfolio investment in the short term. But in the second previous period and the third previous period, the BI rate has a negative and significant effect at the 10% level on portfolio investment. This significant result is in line with Markowitz theory from the risk side which explains that if interest rates increase, the risk becomes high and the FPI also decreases, on the contrary, where the increase

in interest rates increases makes the FPI less attractive to investors due to too high a risk in making investments. Forms of risk such as: price risk and market volatility risk. So low and relatively stable interest rates make FPI more attractive to investors due to the low risk of making investments (Dharmawan, 2021). This is also in accordance with the research of Indra Suhendra and Navik Istikomah (2016), and Rio Oktarino et al (2024) who found that an increase in interest rates has a significant negative effect on portfolio investment.

However, this also contradicts the long term has a positive and significant effect on portfolio investment. So, this is in line with Markowitz theory and asset demand theory in terms of expected return, both of which explain that if interest rates increase, the FPI will also increase and vice versa. Where rising interest rates make bonds and other financial instruments in Indonesia more attractive because they provide higher yields, thereby increasing FPI inflows (Dharmawan, 2021; Putri and Sitorus 2023). This is in accordance with the research of Yudhoyono and Yudha (2024), which states that it is positive and significant for portfolio investment. The Bank Indonesia interest rate as a domestic interest rate is the basis for decision making for investors in financial asset transactions such as stocks and bonds (portfolio investment).

4. The Effect of RP/USD Dollar Exchange Rate on Foreign Portfolio Investment

In this study found ARDL analysis shows that the exchange rate variable has a maximum lag of 1. The statistical processing results show that if the exchange rate has a negative and significant effect in the long run and short run on portfolio investment. This is in line with Markowitz theory where if the fluctuation in exchange rate depreciation increases investment risk for foreign investors, if volatility is high then investors may avoid the country to reduce currency risk. If the exchange rate is stable or tends to strengthen, the investment risk is reduced, thereby increasing the attractiveness of domestic assets for foreign investors and encouraging FPI inflows (Dharmawan, 2021).

This is in accordance with research conducted by Seabra, Frach, and Santos (2007); Brana and Lahet (2008); Ekeocha et.al. (2012), and Putri and Sitorus (2023) which states that the exchange rate has a negative and significant effect on Foreign Portfolio Investment because when there is an increase in the exchange rate (depreciation) it will cause foreign portfolio investment in Indonesia to decline. Conversely, if there is a decrease in the exchange rate (appreciation) it will cause foreign portfolio investment to increase. When the rupiah depreciates, companies that use raw materials from abroad will incur greater costs to import these goods. So that this will result in a decrease in the company's revenue. Furthermore, the decrease in revenue will reduce the level of return offered by the company to investors. Thus, rupiah depreciation will reduce foreign portfolio investment.

CONCLUSIONS

Based on the results of data processing that has been examined regarding the analysis of factors affecting foreign portfolio investment in Indonesia for the period 2005-2023, it can be concluded in this study that in the long run GDP and inflation have a negative and insignificant effect on foreign portfolio investment in Indonesia for the period 2005-2023. Because it is not one of the main factors in influencing foreign investors' decisions to invest in Indonesia and the desire of investors to invest in Indonesia is constrained by legal certainty in investing and GDP and inflation.

In the long term, the BI Rate has a positive and significant effect on foreign portfolio investment in Indonesia for the period 2005-2023 in accordance with the theory of asset demand and Markowitz theory says interest rates have a significant relationship to the FPI in terms of expected returns. In addition, the short-term results of the BI Rate interest rate have varying results on foreign portfolio investment in Indonesia.

For the exchange rate, the results show that both in the long term and short term have a negative and significant effect on foreign portfolio investment in Indonesia. This is in accordance with Markowitz theory which states that the exchange rate has a significant relationship to the FPI in terms of risk.

REFERENCES

- Aggarwal, R., Klapper, L. F., & Wysocki, P. D. (2005). Portfolio Preferences of Foreign Institutional Investors. *Journal of Banking & Finance*, 29(12), 2919–2946. <https://doi.org/10.2139/ssrn.424262>
- Andreano, Dicky. 2018. “Pengaruh Ekspor, Nilai Tukar dan BI Rate Terhadap Investasi Portofolio Asing Di Indonesia”. Malang: FEB Universitas Brawijaya. *Jurnal Ekonomi, Keuangan, Perbankan, Dan Akuntansi*, 13(2), 160–168
- Astuti, Puspasari Windy. (2018). Analisis Pengaruh Investasi Terhadap Pertumbuhan Ekonomi (Studi Pada 33 Provinsi di Indonesia). *Jurnal Ilmiah Mahasiswa FEB*, 6(2), 11. <https://jimfeb.ub.ac.id/index.php/jimfeb/article/view/4629/4058>
- Alhusna, Ifa., Moh, Roy., dan Suseno, Deky Aji. (2016). Determinan Investasi Portofolio Asing Di Indonesia dan Pengaruhnya Terhadap PDB. *Stie Semarang*, 8(3), 143 162. <https://media.neliti.com/media/publications/131770-ID-determinan-investasi-portofolio-asing-di.pdf>
- Bank Indonesia. (2020). Laporan Perekonomian Indonesia 2020. Bauran Kebijakan Bank Indonesia 2020: Menjaga Stabilitas, Mendukung Pertumbuhan Keberlanjutan. <https://www.bi.go.id/id/publikasi/laporan/Pages/LTBI-2020.aspx>

- Bank Indonesia. (2021). Laporan Perekonomian Indonesia 2021. Bauran Kebijakan Bank Indonesia 2021: Menjaga Stabilitas, Mendukung Pertumbuhan Keberlanjutan. <https://www.bi.go.id/id/publikasi/laporan/Pages/LTBI-2021.aspx>
- Baghebo, M., dan Thankgod O. Apere. (2014). "Foreign Portfolio Investment and Economic Growth in Nigeria (1986-2011)". *International Journal of Business and Social Science*, 5(11). https://ijbssnet.com/view.php?u=https://ijbssnet.com/journals/Vol_5_No_11_1_October_2014/12.pdf
- Brana, Sophie., dan Lahet, Delphine. 2008, Determinants of capital inflows into Asia: The relevance of contagion effects as push factors, *Larefi Working Paper* CR08-EFI/05. pp. 1-24, <https://doi.org/10.1016/j.ememar.2010.03.003>
- David, John. (2013). Analisis Pengaruh PDB, Inflasi, Suku Bunga, Dan Krisis Moneter Terhadap Fdi Di Indonesia Tahun 1981-2012. *Diponegoro Journal of Economics*, 2(4), 1–10. <http://ejournal-s1.undip.ac.id/index.php/jme>
- Desiyanti, Rika. (2017). Teori Investasi dan Portofolio. In *Id.Scribd.Com*. <https://id.scribd.com/document/511938794/Strategi-Investasi-Obligasi>
- Dharmawan, Handaru. (2021). Pengaruh Nilai Tukar Rupiah, Produk Domestik Bruto Dan Tingkat Inflasi Terhadap Investasi Portofolio Asing Di Pasar Modal Indonesia. *Jurnal Ilmiah Mahasiswa FEB Universitas Brawijaya*, 9(2), 1–14.
- Dewi, Tania Melinda., dan Cahyono, Hendry. (2016). Pengaruh Pertumbuhan Ekonomi, Bi Rate, Dan Infasi Terhadap Investasi Asing Langsung Di Indonesia. *Jurnal Pendidikan Ekonomi*, 4(3), 1–7.
- Ekeocha, Patterson Chukwuemeka., Ekeocha, Chidinma Stella., Malaolu, Victor., dan Moses, Onyema Oduh. (2012). Modelling the Long Run Determinants of Foreign Portfolio. *Journal of Economics and Sustainable Development*. Vol.3, No.8, pp. 194-205
- Eni, Su1harti., dan Edawati, Lena. (2016). *Manajemen Investasi Dan Teori Portofolio*. hal 77. Purbalingga.
- Fahrika, A Ika., dan Roy, Juliansyah. (2020). Dampak pandemi covid 19 terhadap perkembangan makro ekonomi di indonesia dan respon kebijakan yang ditempuh. *Inovasi*, 16(2), 206–213.
- Gujarati, Damodar N., and Porter, Dawn. (2012). *Basic Ecomometirics Buku II: Dasar-Dasar Ekonometrika. Edisi ke-5*. Salemba Empat, Jakarta.
- Haider, Muhammad Afaq., Khan, Muhammad Asif., dan Abdulahi, Elyas. (2016). Determinants of Foreign Portfolio Investment and Its Effects on China. *International Journal of Economics and Finance*, 8(12), 143. <https://doi.org/10.5539/ijef.v8n12p143>
- Hadi, Halifah., Aimon, Hasdi., dan Putri, Dewi Zaini (2018). “Analisis Pengaruh Variabel Makroekonomi Dan Country Risk Terhadap Investasi Portofolio Asing Di Indonesia”. *Padang: FE Universitas Negeri Padang*.

- Hady, Hamdy. (2001). *Ekonomi Internasional: Teori dan Kebijakan Keuangan Internasional*, Jakarta: Ghalia Indonesia.
- Hartono, Jogiyanto. (2017). *Teori Portofolio dan Analisis Investasi, Edisi Kesebelas*. BPFE-Yogyakarta.
- Inrawan, Ady (2005). *Dasar-Dasar Teori Portofolio Dan Analisis Sekuritas*, Bandung: Penerbit Widina Bhakti Persada Bandung.
- Jansen, W. J., & Stokman, A. C. J. (2004). Foreign direct investment and international business cycle comovement (ECB Working Paper No. 401). *European Central Bank*.
<https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp401.pdf>
- Kurdiansyah., Wisandani, Iwan., and Nasrulloh, Agus Ahmad. (2021). Pengaruh PDB Dan Kurs Rupiah-Usd Terhadap Investasi Portofolio Asing Di Indonesia. Ekspansi: *Jurnal Ekonomi, Keuangan, Perbankan, Dan Akuntansi*, 13(2), 170–178.
<https://doi.org/10.35313/ekspansi.v13i2.3456>
- Lane, P. R., & Milesi-Ferretti, G. M. (2007). The external wealth of nations mark II: Revised and extended estimates of foreign assets and liabilities, 1970–2004. *Journal of International Economics*, 73(2), 223–250.
- Krugman, Paul and Obstfeld, Maurice. (1996). *Ekonomi Internasional :Teori dan Kebijakan*, Jakarta: PT Raja Grafindo Persada.
- Krugman, P. R., & Obstfeld, M. (2018). *International economics: Theory and policy* (10th ed.). Pearson Education.
- Laloan, E. E. T., Nainggolan, N., & Hatidja, D. (2023). Penerapan Autoregressive Distributed Lag (ARDL) Dalam Memodelkan Pengaruh Lama Sekolah Dan Tingkat Pengangguran Terbuka Terhadap Kemiskinan di Kota Manado. *d'CartesiaN Jurnal Matematika Dan Aplikasi P-ISSN:2302-4224*, Vol. 12, N.
- Lozovyi, O., and Kudina, A. (2009). Determinants of Portfolio Flows into CIS Countries. *CASE Network Studies and Analyses No. 354*. Diakses dari <https://ssrn.com/abstract=1389519>
- Mankiw, N. G. (2021). *Principles of Economics* (9th ed.). Cengage Learning.
- Markowitz, Harry Max. (1991). Foundations of Portfolio Theory. *The Journal of Finance*, 46(2), 469–477. JSTOR. <https://doi.org/10.2307/2328831>.
- Mishkin, Frederic. (2017). *Ekonomi uang, perbankan, dan pasar keuangan (11 ed.)*. Salemba Empat.
- Mustofa, Hafidz. (2024). Investasi Asing Langsung Di Indonesia Pada Tahun 2007-2022. *JKBM: Jurnal Konsep Bisnis Dan Manajemen*, 8(1), 11–25. <https://doi.org/10.31289/jkbm.v7i2.5422>
- Nanga, M. (2005). *Makroekonomi: Teori, Masalah, dan Kebijakan*. Jakarta: PT Raja Grafindo Persada.
- Nurhaliza. (2021, Mei 14). Apa Itu Pasar Modal? Cek Yuk Fungsi, Contoh dan Manfaatnya. Retrieved from Indonesia Stock Exchange: <https://www.idx channel .com/>

- Putri, Livia Danisha., and Sitorus, Nurbetty Herlina. (2023). Implikasi Variabel Makroekonomi dan Country Risk Terhadap Investasi Portofolio Asing di Indonesia Tahun 2010:Q1 – 2021:Q4. *Economics and Digital Business Review*, 4(2), 432-449.
- Putri, Nadya., Komara., dan Setyowati. (2021). The Effect of Exchange Rate, Economic Growth, Inflation, and Interest Rate on Foreign Direct Investment in Indonesia. *JKBM: Jurnal Konsep Bisnis Dan Manajemen*, 8(1), 11–25. <https://doi.org/10.31289/jkbm.v7i2.5422>
- Oktarino, Rio., Akbar, Ali., dan Irawan, Andri. (2023). Analisis Pengaruh Suku Bunga dan Inflasi Terhadap Investasi di Indonesia Tahun 2006-2021. *Palembang: FEB Universitas Baturaja*.
- Saputra, Paulus. (2023). Desterrninan Investasi Portofolio Asing di Indonesia. At-Tawassuth: *Jurnal Ekonomi Islam*, VIII(I), 1–19.
- Sari, Titis Nistia., dan Zatira, Dhea. (2024). Dampak Makroekonomi Terhadap Investasi Portofolio Asing di Indonesia. *Manajemen Bisnis*, 1(2), 47–56. non-dwnldmngn-download-dont-retry2download
- Sahiti, Arben., dan Rina, Zeqiri. (2015). The Determinants Of Foreign Direct Investment: Empirical Evidence From Kosovo. *Advances in Business Related Scientific Research Journal*, 11(1), 67–76.
- Seabra, Claudia., Fernando., Lisandra, Frach., dan Tatiana, Santos. (2007). Foreign Portfolio Investment, the European Monetary Union and Exchange Rate Uncertainty. *Journal of Risk and Financial Management*, 2(23), https://www.researchgate.net/publication/330909449_Foreign_portfolio_investment_the_European_Monetary_Union_and_exchange_rate_uncertainty
- Salvatore, D. (2019). *International economics* (13th ed.). Wiley.
- Siska, Elmira., dan Arigawati, Desy. (2020). Reaksi Ramadhan Effect Terhadap Saham Perusahaan Makanan dan Minuman di Indonesia. *Journal of Applied Business and Economics (JABE)*. 6 (4) : 330-340.
- Siregar, Enni Sari. (2016). Pengaruh Tingkat Inflasi Terhadap Investasi Daerah Sumatera Utara. *Jurnal Education and Development STKIP Tapanuli Selatan*, 1(4), 2527–4295.
- Subekti, Retno. (2009). Keunikan Model Black Litterman Dalam Pembentukan Portofolio. Seminar Nasional Penelitian, Pendidikan Dan Penerapan MIPA, 147–150.
- Suhendra, Indra., & Istikomah, Navik. (2016). Faktor Penentu Investasi Portofolio Di Indonesia. *Jurnal Riset Akuntansi Terpadu*, 9(2). <https://doi.org/10.35448/jrat.v9i2.4314>
- Sukirno, Sadono. (2010). *Makroekonomi: Teori Pengantar. Edisi Ketiga*. Rajawali Pers.
- Sukirno, S. (2016). *Makroekonomi Teori Pengantar* (Edisi Ketiga). Jakarta: Rajawali Pers.
- Sugiyono. (2013). *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Journal of Chemical Information and Modeling, 53(9).

- Tambunan, Kristopel., dan Fauzie, Syarief. (2014). Pengaruh Capital Inflow dan Capital Outflow Di Indonesia Terhadap Nilai Tukar Rupiah. *Jurnal Ekonomi Dan Keuangan*, Vol.2 No.5(1980), 296–298.
- Tandelilin, Eduardus .2010. *Portofolio dan Investasi : Teori dan Aplikasi Edisi 1*. Yogyakarta: Kanisius.
- Thorbecke, Willem. (2021). The Exposure of French and South Korean Firm Stock Returns to Exchange Rates and the COVID-19 Pandemic. *Journal of Risk and Financial Management*, 14(4), 154
- Thorbecke, Willem. (2021). The weak rupiah: Catching the tailwinds and avoiding the shoals. *Journal of Social and Economic Development*, 23(S3), 521–539. <https://doi.org/10.1007/s40847-020-00111-3>
- Wardhono, Adhitya., Qori'ah, Ciplis Gema., Nasir., dan Aprilia. (2020). Analisis Dampak Indikator Makroekonomi terhadap Investasi Portofolio di ASEAN. *Jurnal Ekonomi Indonesia*, 9(1), 81–97. <https://doi.org/10.52813/jei.v9i1.43>
- Waqas, Yahya., Hashmi, Shujahat Haider., dan Nazir, Muhammad Imar. (2015). Macroeconomic factors and foreign portfolio investment volatility: A case of South Asian countries. *Future Business Journal* 1 (2015) 65-74. <https://www.sciencedirect.com/science/article/pii/S2314721015000067>
- Wen, Zhijian. (2023). Theoretical analysis of modern portfolio theory. *BC Publishing Corporation, Business and Management Research*, 17(2), 146–150. <https://bcpublishing.org/index.php/BM/article/view/5177/5038>
- Widarjono, Agus. (2018). *Ekonometrika Pengantar dan Aplikasinya disertai Panduan E-Views*. In Upp Stim Ykpn. UPP STIM YKPN.
- Wijaya, Adidarma., dan Purwanti, Dwi. (2017). Analisis Faktor-Faktor Yang Mempengaruhi Nilai Tukar Dollar Amerika Serikat Di Indonesia. *E-Jurnal EP Unud*, 10(5), 1774–1800.
- Yudhoyono, Andika Dwi., dan Yudha, I Made Endra Kartika. (2024). Pengaruh Tingkat Suku Bunga The Fed Dan Suku Bunga Bank Indonesia Terhadap Portofolio Investasi di Indonesia. *Denpasar: FEB Universitas Udayana*.