An Empirical Reassessment of the Relationship between Interest Rate and Net Export through ASEAN-5's Foreign Exchange Reserves

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Abstract: - The purpose of this study is to determine whether the real impact of interest rates and net exports through ASEAN-5's foreign exchange reserves was significant between 2009 and 2019. This study employs five ASEAN countries with the highest foreign exchange reserves: Indonesia, Malaysia, Singapore, Thailand, and the Philippines. During 2009-2019, the sample was determined using a saturated sampling technique with five countries. The data used is secondary data from the World Bank. In this study, hypothesis testing was performed using Panel Data Analysis with the Views 10 program and a significance level of 5%. (0.05). The findings indicate that interest rates and net exports have an impact on foreign exchange reserves. The findings also show that the two independent variables have an impact on foreign exchange reserves at the same time.

Key-Words: - foreign exchange reserves, interest rates, net export, ASEAN-5

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1 Introduction

According to the International Monetary Fund, the institution in charge of maintaining the international monetary system, a country is considered safe from economic shocks if it has foreign exchange reserves equal to at least three (three) months of imports. For the past 11 years, ASEAN's foreign exchange reserves have fluctuated but have tended to increase in the long run. Singapore maintained its trend of having the highest foreign exchange reserves for the past 11 years, with 285 billion USD in foreign exchange reserves in 2019, followed by Thailand in second place, with 224 billion USD in total foreign exchange reserves in 2019, and Indonesia with 129 billion USD in 2019, Malaysia's total foreign exchange reserve in 2019 was 103 billion USD, while the Philippines' total foreign exchange reserve was 89 billion USD. Indonesia's foreign exchange reserves increased from 2009 to 2012 before declining in 2013 as the Chinese economy weakened and the US dollar strengthened. In 2013, Indonesia's foreign exchange reserves fell, necessitating a dollar supply to support external sector resilience and maintain macroeconomic and financial system stability, [1].

Indonesia's foreign exchange reserves increased again in 2014 as China's economic growth stabilized and export activities increased, but decreased again in 2015 due to spending on foreign debt payments and the use of foreign exchange reserves to maintain the rupiah exchange rate's stability. Malaysia's foreign exchange reserves increased from 2009 to 2012, then decreased in 2013 due to the strengthening of the US dollar; from 2013 to 2016, Malaysia's foreign exchange reserves continued to decrease before increasing again in 2017. Singapore saw an increase between 2009 and 2013. Then, from 2014 to 2016, the level of exports and the value of export products decreased due to a slowdown in China's economic growth, which caused a decrease in the level of exports and a decrease in the value of export products due to a decline in global demand. Singapore's foreign exchange reserves increased again in 2017. Thailand's foreign exchange reserves fluctuate, but a significant decline occurred in 2013 due to the appreciation of the US dollar and the weakening Chinese economy, followed by a significant increase in 2017 that continued until 2019. The Philippines has large foreign exchange reserves that have fluctuated. The Philippines' foreign exchange reserves decreased in 2014 and

2018 due to the strengthening of the US dollar and the weakening of the Chinese economy. Foreign exchange reserves are an indicator of a country's resilience in the face of an economic crisis, so having an adequate amount of them is critical. According to the International Monetary Fund, a country is considered economically fundamentally safe if it has enough foreign exchange reserves to cover three months' worth of imports.

According to World Bank data, the movement of ASEAN-5 interest rates continued to fluctuate from 2009 to 2019. Indonesia's interest rates decreased in 2011, 2014, 2017, and 2019, but there was an increase in foreign exchange reserves in those years; on the other hand, interest rates increased in 2015, but Indonesia's foreign exchange reserves decreased due to spending on foreign debt payments. This contrasts with the Mundell-Flemming model, which asserts that interest rates and foreign exchange reserves have a positive relationship, [2]. The same thing happened in Malaysia with the Mundel Flemming model, where interest rates fell but foreign exchange reserves increased from 2010 to 2012, but conditions changed in 2016 and 2018 when interest rates rose but Malaysia's foreign exchange division increased.

In Singapore, unlike in Indonesia and Malaysia, there is only a small gap between Mundel Flemming's theory and the reality that occurred in 2017, namely Singapore's interest rates decreased while its foreign exchange reserves increased. The Singapore government reduced interest rates in 2017 to protect against economic conditions in 2016, which saw a deflation of -0.53, so the 2017 Singapore interest rate was lowered to stimulate economic growth and prevent a recession. Meanwhile, according to Mundel Flemming's theory, Thailand's interest rates and foreign exchange reserves were very inversely proportional from 2010 to 2019. If interest rates fell, Thailand's foreign exchange reserves increased, and vice versa if interest rates rose, Thailand's foreign exchange reserves decreased. In contrast to the Philippines, the phenomenon occurred only between 2010 and 2015, and then again in 2017. However, the phenomenon that has been observed in ASEAN-5 countries for some time occurs because a country's foreign exchange reserves are influenced by a variety of factors other than interest rates.

Seeing the gap between economic theory regarding the relationship between interest rates and foreign exchange reserves with the reality that is happening in ASEAN-5 countries. And look at the fact that there is a phenomenon in net exports with foreign exchange reserves in ASEAN-5 countries. Therefore, the authors limit the variables in this study, namely the dependent variable on foreign exchange reserves and the independent variables are interest rates and net exports of ASEAN-5 (Indonesia, Malaysia, Singapore, Thailand, and the Philippines) from 2009 to 2019.

2 Literature Review

The Mundell-Fleming economic model was created independently by Robert Mundell and Marcus Fleming, [3]. This model extends the IS-LM model. The Mundell-Fleming model describes an open economy, whereas the classic IS-LM model describes an autarky economy (or a closed economy). As a result, the Mundell-Fleming model takes this paradigm and applies it to an open economy. Domestically produced consumption and investment commodities, in particular, may be requested and acquired by foreign agents in an open economy. In this scenario, we're discussing "exports" (X). Domestic consumers and businesses can also demand and purchase foreign-made consumption and investment goods. In this scenario, we're discussing "Import" (M). "Net Exports" (NX = X - M) are represented by the difference between these values. The source of income for such an alternative measure is [4]:

$$Y = C + I = G + NX$$

Gross Domestic Product is significantly influenced by net exports, [5]. The Gross Domestic Product (GDP) of a country is quickly becoming a key indicator of its economy, [6]. Researchers frequently use the expenditure approach, which includes export and import data, when measuring GDP. Both exports and imports are important indicators of a country's economic progress. The GDP can then be compared to determine how quickly or slowly a country's economy is expanding. However, essential exports and imports are inextricably linked to the exchange rate. Lower exchange rates can encourage a country to export more and import less. The basic logic is that foreign currency income causes the exchange rate to fall. Transfers that include interests, on the other hand, are the inverse, [7]. Net exports are the difference between exports and imports. Both the export and import values are in US dollars (USD). The CIF (Cost, Insurance, and Freight) method is used to value imports. Positive net exports increase foreign currency reserves, while negative net exports decrease foreign exchange reserves, indicating a balance of payments deficit. As a result, to increase

net exports, a country must increase sales to buyers in other countries, [8].

Under flexible exchange rates, increased government spending cannot stimulate demand because the exchange rate appreciates and capital inflows prevent interest rates from rising, resulting in fewer net exports. Fiscal policy is more effective because the monetary policy at fixed exchange rates mitigates real exchange rate appreciation pressures. Along with the assumption of twin deficits, it is demonstrated that changes in government savings should result in changes in the current account, [9]. As a result of the capital account crises of the 1990s, particularly in Asian countries around 1997, capital account shock prevention has become critical, necessitating adequate foreign exchange reserves. The export booms that followed both crises demonstrated the benefits of undervalued currencies for export-led growth, [10].

Inflation causes interest rates and exchange rates to become unstable; inflation also affects interest rates and exchange rates. As part of its economic management, the central bank adjusts interest rates every three months. If the economy is experiencing inflationary pressures, the central bank will raise the base lending rate to limit the amount of money available to individuals and businesses, making borrowing more expensive. Assuming that the host country's interest rate remains constant, the increase in one country creates an imbalance in money demand and supply, causing the exchange rate to move to equilibrium. Borrowing and investing across borders can be profitable even when arbitrage benefits are not available. If both the home and host countries raise or lower interest rates at the same time, interest rates do not affect the exchange rate, [11]. Export competitiveness will deteriorate as interest rates rise, while it will improve as interest rates fall. This is because as borrowing rates rise, so does working capital. Exporters were hesitant to take out a loan because their working capital was shrinking as debt repayment obligations were added. Because of a lack of cash, the output will fall, resulting in a drop in export volume. A decrease in export volume will have an effect on the export value, which will decrease, lowering export competitiveness, [12].

Foreign exchange reserves are assets held by a country's central bank or monetary authority. The most common reserve currencies are the US dollar, euro, Japanese yen, and pound sterling. It is used by the domestic country to fulfill international responsibilities to the rest of the world. Foreign exchange reserves include foreign banknotes, foreign treasury bills, foreign bank deposits, long and short-term foreign government securities, gold reserves, IMF reserve positions, and IMF special drawing rights. In a broad sense, a foreign exchange reserve is an important component of a country's economic strength that is used to balance the balance of payments, stabilize the exchange rate, and repay foreign debts. In a broad sense, foreign exchange reserves refer to assets denominated in foreign currency, such as cash, foreign bank deposits, foreign securities, and so on, [13]. The goal of keeping foreign exchange reserves is to keep national currencies stable and liquid in the event of an economic downturn, as well as to ensure that a country meets its foreign obligations. As a result, maintaining adequate foreign exchange reserves while keeping a country's development needs in mind is critical. Foreign exchange reserve management is also critical, [14]. Foreign currency reserve management is a process that ensures that acceptable official public sector foreign assets are easily accessible and regulated by authorities to meet a country's or union's established set of objectives, [15].

3 Method Analysis

The descriptive research method was used, which focuses on the process of gathering empirical facts and continuing with data identification. Double the research begins with a description, then deep exploration and interpretation in a long and detailed sentence. The mathematical model is used to perform systematic and technical analysis on all data obtained through explanation in the form of images, histograms, pie charts, and tables or graphs that have been calculated and then expanded.

Data was collected from various sources with observation periods ranging from 2009 to 2019 in the form of secondary data at the World Bank in the form of foreign exchange reserves, interest rates, and net export data. I gathered data on the dependent variable and the independent variable by searching various websites such as the World Bank. Panel regression analysis was used to analyze the data, first analyzing the normality test data, then exploring the analysis of each variable used, and finally interpreting and testing the hypothesis test.

4 Results and Discussion

This study employs data on foreign exchange reserves derived from total ownership of liquid assets, monetary gold, and foreign exchange holdings under the control of monetary authorities

in the ASEAN-5 countries with the highest total foreign exchange reserves in the Southeast Asia region between 2009 and 2019.

Table 1. ASEAN-s'5 Foreign Exchange Reserves (USD) 2009-2019

Year	Foreign Exchange Reserves					
	Indonesia	**Malaysia**	**Singapore**	**Thailand**	**Philippines**	**Average**
2009	66,118,917,969	96,704,054,215	192,046,029,173	138,419,119,048	44,205,983,463	107,498,820,774
2010	96,210,980,584	106,528,123,470	231,259,743,357	172,027,935,377	62,326,286,865	133,670,613,931
2011	110,136,597,663	133,571,684,232	243,798,272,472	174,891,021,492	75,123,089,218	147,504,133,015
2012	112,797,627,833	139,730,782,666	265,910,197,709	181,481,264,054	83,788,600,501	156,741,694,553
2013	99,386,826,239	134,853,702,252	277,797,711,590	167,230,223,499	83,182,370,908	152,490,166,898
2014	111,862,594,562	115,958,875,076	261,582,777,243	157,162,740,027	79,629,428,309	145,239,283,044
2015	105,928,847,089	95,282,342,268	251,875,782,495	156,459,956,383	80,640,411,492	138,037,467,945
2016	116,369,601,851	94,481,267,075	251,058,293,462	171,772,074,487	80,666,223,157	142,869,492,007
2017	130,215,330,383	102,446,599,681	285,000,274,601	202,538,295,198	81,413,504,335	160,322,800,840
2018	120,660,974,091	101,452,531,756	292,715,632,357	205,640,628,938	79,195,598,850	159,933,073,198
2019	129,186,464,021	103,629,721,169	285,477,830,550	224,355,506,655	89,515,298,356	166,432,964,150
Average	108,988,614,753	111,330,880,351	258,047,504,092	177,452,615,014	76,335,163,223	

Data Source: World Bank

According to table 1, Singapore has the most foreign exchange reserves of the other four countries on average. This is due to Singapore's high level of exports. The greatest increase in Singapore's foreign exchange reserves occurred in 2010, with Singapore's foreign exchange reserves increasing by 20.42% from 2009. This is because Singapore's economy began to recover following the 2009 recession. Singapore's balance of payments in 2010 was driven by electronics exports, particularly consumer demand in China and IT investment firms in the United States. Capital flows have also recovered, indicating that foreign investor interest in Singapore has returned.

In comparison to the other four countries, the Philippines has the lowest average score. This is due to the Philippines having the lowest net exports compared to four other countries, importing more than exporting, and importing many raw materials and semi-finished goods. It differs from Indonesia, which has the ASEAN-5 countries' second-lowest average foreign exchange reserves. Indonesia had the highest increase in foreign exchange reserves in 2010, owing to a positive development in the exchange rate and inflation rate 2010, which maintained economic actors' expectations regarding macroeconomics while also providing certainty for economic actors in both the financial and real sectors, resulting in increased productivity, exports, and foreign exchange reserves of 45.51% in 2010. Meanwhile, the highest increase in foreign exchange reserves occurred in Malaysia in 2011, owing to the strengthening of the Ringgit exchange rate against the US dollar in 2011.

Meanwhile, according to the ASEAN-5 foreign exchange reserve data for 2009-2019, Singapore had the most foreign exchange reserves in 2018, with 292,715,632,357.01 USD, driven by an increase in Singapore's oil and gas exports of 17.1% and a 4.2% increase in non-oil exports. The Philippines had the lowest amount of foreign exchange reserves in ASEAN-5 from 2009 to 2019, with 44,205,983,462.39 USD.

An adequate amount of foreign exchange reserves is very important for ASEAN-5 as a country with an open economic system, namely foreign exchange reserves are used by Indonesia, Malaysia, Singapore, Thailand, and the Philippines to maintain a stable balance of payments, foreign exchange reserves can maintain exchange rates local currency by intervening in the foreign exchange market, foreign exchange reserves are also used to pay off foreign debts and the Philippines

Table 2. ASEAN-5's Interest Rates 2009 – 2019

Year	Interest Rates					
	Indonesia	**Malaysia**	**Singapore**	**Thailand**	**Philippines**	**Average**
2009	5.22	3.00	5.09	3.75	5.83	4.578
2010	6.24	2.50	5.17	3.13	4.45	4.298
2011	5.47	2.00	5.21	2.61	3.28	3.714
2012	5.85	1.81	5.24	2.59	2.52	3.602
2013	5.39	1.68	5.24	2.63	4.11	3.81
2014	3.85	1.54	5.21	3.20	4.30	3.62
2015	4.33	1.43	5.18	3.30	3.99	3.646
2016	4.72	1.50	5.16	3.17	4.05	3.72
2017	4.55	1.68	5.14	3.13	3.75	3.65
2018	4.41	1.78	5.17	2.86	3.00	3.444
2019	3.68	1.89	5.05	2.67	3.01	3.26
Average	4.882727	1.891818	5.169091	3.003636	3.844545	

Data Source: Bank of Indonesia

According to table 2, Singapore's interest rates continued to fluctuate but remained stable at 5% from 2009 to 2019. Meanwhile, Malaysia's interest rates were always the lowest among the ASEAN-5 countries from 2009 to 2019. This was due to Malaysia implementing a policy to increase domestic credit, which increased productivity. In terms of the state of Indonesia, the highest interest rate from 2009 to 2019 was set in 2010, by Bank Indonesia to suppress inflation. Meanwhile, Indonesia's lowest interest rate in 11 years, 3.68 percent, occurred in 2019. This is because Bank Indonesia hopes that the business world will implement an investment plan that will help the economy grow better, beginning with strengthening credit in the real sector, and this policy is also implemented to increase purchasing power. In contrast to Thailand, Thailand's highest interest rate from 2009 to 2019 occurred in 2009, when the interest rate was 3.75, due to Thailand implementing a strict economic policy to suppress inflation, while Thailand's lowest interest rate occurred in 2010 when it was 2.59, Thailand did this to boost domestic demand. In the Philippines, as in Thailand, the highest interest rate occurred in 2009 and the lowest interest rate occurred in 2012. This is due to a weakening of economic growth in the United States, Europe, and China in 2012 as a result of the US general election. Meanwhile, the United States experienced a severe recession in 2009 as a result of the collapse of the housing market, which was caused by low-interest rates and inadequate mortgage regulation.

Indonesia's interest rate has an inversely proportional or negative relationship, as seen in 2011, 2014, 2017, and 2019. This is due to Bank Indonesia implementing an expansionary monetary policy aimed at increasing productivity so that the economy grows, but what happened in those four years was that Indonesia's foreign exchange reserves decreased, which is not consistent with the Mundle Fleming theory, which states that interest rates are directly proportional to foreign exchange reserves.

Similar to Indonesia, Malaysia's interest rates exhibit an inverse relationship, as evidenced by an increase in foreign exchange reserves but a decrease in interest rates between 2010 and 2012. There was also a decrease in foreign exchange reserves accompanied by an increase in interest rates between 2016 and 2018. What happened in Indonesia and Malaysia can be explained by the

fact that when interest rates are high, people tend to use their money to save, which means that productive money is used to invest less, reducing the country's ability to increase foreign exchange reserves.

In contrast to Indonesia and Malaysia, Singapore exhibits a directly proportional relationship between foreign exchange reserves and interest rates; whenever interest rates rise, foreign exchange reserves rise as well, except in 2017. This conforms to Mundell Flemming's theory, according to which interest rates are directly proportional to foreign exchange reserves. This can be explained as follows: if a country's interest rates are high, it encourages investors to invest their capital; if the foreign capital is in the form of foreign currency, it increases foreign exchange reserves.

Turning to Thailand, the relationship between interest rates and foreign exchange reserves has remained negative from 2009 to 2019. If interest rates rise, Thailand's foreign exchange reserves fall, and vice versa if interest rates fall, Thailand's foreign exchange reserves rise. This is also true for Indonesia and Malaysia. The same thing happened in the Philippines, where interest rates and foreign exchange reserves had an inverse relationship from 2009 to 2019, except in 2016, 2018, and 2019. Except for Singapore, almost all of the ASEAN-5 countries show a relationship between interest rates and inversely proportional reserves.

Table 3. ASEAN-5's Net Export 2009 – 2019

Year	Net Export					
	Indonesia	**Malaysia**	**Singapore**	**Thailand**	**Filipina**	**Average**
2009	21,191,036,278	41,550,972,363	45,619,614,149	26,976,846,652	(8,962,220,915)	25,275,249,706
2010	21,212,148,896	40,434,591,220	63,099,137,642	19,684,244,162	(11,094,114,052)	26,667,201,574
2011	24,021,724,759	46,436,559,964	76,981,679,929	7,632,805,085	(13,866,049,882)	28,241,343,971
2012	(1,884,415,530)	33,875,653,964	71,489,958,547	880,051,502	(12,747,420,148)	18,322,765,667
2013	(6,237,109,752)	27,540,337,317	71,092,623,672	7,440,895,245	(10,647,205,111)	17,837,908,274
2014	(3,027,125,055)	31,341,554,661	73,803,243,756	23,908,777,048	(12,753,927,161)	22,654,504,650
2015	5,351,899,013	22,711,691,907	84,076,882,513	41,680,325,908	(17,854,385,030)	27,193,282,862
2016	8,234,324,960	19,990,335,309	83,419,784,550	56,051,035,538	(28,505,668,861)	27,837,962,299
2017	11,434,768,729	21,988,277,862	90,773,792,929	56,877,036,176	(31,521,653,140	29,910,444,511
2018	(6,713,373,308)	24,054,470,763	108,205,657,941	44,922,177,604	(39,364,380,326)	26,220,910,535
2019	(4,133,324,478)	27,150,908,125	105,830,750,341	51,047,439,796	(36,272,180,842)	28,724,718,589
Average	6,313,686,774	30,643,213,950	79,490,284,179	30,645,603,156	(20,326,291,406)	

According to table 3, the highest average net export of ASEAN-5 occurred in 2017, with a value of 29,210,444,511.01. Meanwhile, the ASEAN-5's average net export in 2013 was 17,837,908,274.05. Due to the import of oil and gas, Indonesia ran a trade balance deficit from 2012 to 2014 and again from 2018 to 2019. Malaysia has not had a trade balance deficit in 11 years because it has many natural resource processing factories, such as palm oil, and the products of natural resources are then exported. Singapore has the highest average net export among the ASEAN-5 countries, owing to the Singaporean economy's emphasis on exports of manufacturing and electronic machinery, port cargo, financial services, tourism, and other services. Thailand's economy was dependent on exports from 2009 to 2019, according to www.trade.gov, and the United States was Thailand's main export market. Thailand's export goods included cars, spare parts, accessories, goods, electronics and computers, precious stones and jewelry, rubber, and plastic products. In contrast to Thailand, the Philippines experienced a trade balance deficit for 11 years, owing to high

imports of raw materials and intermediate goods, according to the International Trade Administration. From 2016 to 2019, the Philippines experienced a current account deficit due to aggressive capital imports for government infrastructure programs.

Except in 2012 and 2015, the relationship between net exports and foreign exchange reserves in Indonesia is directly proportional; whenever net exports increase, so do Indonesia's foreign exchange reserves. Similarly to Indonesia, the relationship between net exports and Malaysia's foreign exchange reserves is positive; every increase in net exports in Malaysia is always accompanied by an increase in foreign exchange reserves, except in 2010, 2012, 2014, and 2018. Singapore, like Indonesia and Malaysia, has a directly proportional relationship between net exports and reserves, except for 2012-2015. Thailand and the Philippines, on the other hand, have an inversely proportional relationship between net exports and foreign exchange reserves. Thailand only had a positive relationship between net exports and foreign exchange reserves in 2010, 2016, 2017, and 2019. While the Philippines has had negative net exports for 11 years, its foreign exchange reserves have increased for several years. This can be explained by the fact that Thailand's and the Philippines' foreign exchange reserves are primarily supplied by government foreign debt for infrastructure development. Because three of the five ASEAN-5 countries, namely Indonesia, Malaysia, and Singapore, demonstrated a trend of a directly proportional relationship from 2009 to 2019, it can be concluded that net exports and foreign exchange reserves have a directly proportional relationship.

Here, the author can conclude that interest rates do indeed affect a country's foreign exchange reserves, and interest rates themselves can attract investors as a result of government policies; one of the driving factors attracting investor interest is the presence of low-interest rates in a country. The findings of this study can also be seen in one of the sample data sets, Malaysia from 2010 to 2012, as follows:

Table 4. Malaysia's Foreign Exchange Reserves and Interest Rate 2010 – 2012

Country	Year	FER	Interest Rate
Malaysia	2010	106,528,123,469.78	2
	2011	133,571,684,231.73	1.81
	2012	139,730,782,665.94	1.68

Source: World Bank

Based on the table above, it can be explained that Malaysia's foreign exchange reserves increased by 27,043,560,761.95 USD from 2010. An increase also occurred in 2012, namely Malaysia's foreign exchange reserves increased from 133,571,684,231.73 to 139,730,782,665.94, whereas Malaysian interest rates decreased from 2.00 to 1.81 in 2011 and then decreased again in 2012. Several studies have found that interest rates have a negative effect on foreign exchange reserves [16], [17].

Table 4. Singapore's Foreign Exchange Reserves and Net Export 2009 – 2011

Country	Year	FER	Net Export
Singapore	2009	192,046,029,172.21	45,619,614,148.23
	2010	231,259,743,357.53	63,099,137,641.26
	2011	243,798,272,471.04	76,981,679,928.61

Source: World Bank

According to the table above, there was a 20.42% increase in foreign exchange reserves in 2010 compared to the previous year, as well as a 38.31% increase in net exports. Foreign exchange reserves increased in 2011 from 231,259,743,357.53 USD to 243,798,272,471.04 USD, and net exports increased from 63,099,137,641.26 USD to 76,981,679,928.61 USD, indicating that net exports and foreign exchange reserves have a positive influence. This study's findings are supported by research conducted by [18], [19], [20], [21], [22].

Table 5. Panel Regression Analysis

Variable	Coefficient	T-Statistik	Prob
C	1.94E+11	11.93660	0.0000
IR	-1.85E+10	-4.326250	0.0001
NE	0.787714	4.299849	0.0001

Source: Data processed with Eviews

Table 6. R Square Test and Hypothesis Test

R-squared	0.944869	Mean dependent var	1.46E+11
Adjusted R-squared	0.936658	S.D. dependent var	6.84E+10
S.E. of regression	1.72E+10	Akaike info criterion	50.11109
Sum squared resid	1.39E+22	Schwarz criterion	50.40306
Log-likelihood	-1370.055	Hannan-Quinn criteria.	50.22399
F-statistic	115.0736	Durbin-Watson stat	0.953701
Prob(F-statistic)	0.000000		

Source: Data processed with EViews

1. Coefficient β

Beta The beta coefficient of the interest rate (IR) variable is -1.85E+10, which means that the interest rate variable can explain the dependent variable, namely foreign exchange reserves (FER), by -185%, or that every unit increase in the interest rate variable can result in a -185% decrease in FER. The net export (NE) variable's beta coefficient value is 0.787714, which means that the net export (NE) variable can explain the dependent variable, namely FER of 78%, or can be interpreted as every unit increase of a net export variable can increase FER of 78%.

2. Probability α

- For the interest rate (IR) variable probability of 0.0001 means, it is proven that it is significant because the probability value of the IR variable < compared to alpha / α
- For the net export (NE) variable probability of 0.0001 means, it is proven that it is significant because the probability value of the NE variable < compared to alpha / α

3. F-Statistics

F-Statistics value of 115.0736 with a probability of 0.000000 which is smaller than alpha, so it can be concluded that the independent variables simultaneously have a significant effect on the dependent variable (FER)

4. R-Square

Based on the R-Square regression of 0.944869, this means that the independent variable/predictor can explain the dependent variable (FER) of 94.49%

5. Adjusted R-Square

Based on the value of S.E Of Regression which is 1.72E+10 and S.D Dependent Var of 6.84E+10. Then this proved to be a valid regression as a predictor model because of the S.E of Regression < S.D Dependent Var.

5 Conclusion

According to the findings of this study, the interest rate has an impact on the ASEAN-5 foreign exchange reserves. These outcomes occur because interest rates, both high and low, influence the flow of foreign capital into a country, and the flow of foreign capital in the form of foreign currency can increase a country's foreign exchange reserves. Interest rates have a negative effect on foreign exchange reserves, according to this study. Low-interest rates in a country encourage people to invest their money, increasing productivity; high productivity in a country attracts foreign investors to invest; foreign investment can take the form of foreign currency, increasing the number of foreign exchange reserves. Furthermore, low-interest rates encourage domestic exporters to borrow capital, which is then used for capital for export activities, so that if exports increase more than imports, a trade balance surplus is created, increasing the number of foreign exchange reserves. These findings are also based on the hypothesis and previous research findings. According to the study's findings, net exports have an impact on ASEAN-5 foreign exchange reserves. Because positive net exports resulted in a trade balance surplus, the surplus increased the number of foreign exchange reserves. Negative net exports result in a trade balance deficit, which depletes foreign exchange

reserves. As a result, net exports have a positive effect on foreign exchange reserves. These findings are also based on the hypothesis and previous research findings.

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