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The Effectiveness Of A Mixed Economic Model In Controlling The Financial System In 7 Emerging Market Countries

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Abstract. *This research aims to analyze the effectiveness of the mixed economic model in controlling financial system stability in 7 emerging market countries. Where the monetary policy variables are the money supply and interest rates. Then the microprudential variables are Return On Equity and Return On Assets, the macroprudential variables are Capital Adequacy Ratio and Non Performing Loans. The financial system stability variables are the inflation level and exchange rate. The data analysis model in this research is the Simultaneous model. This research uses secondary data or time series, namely from 2019 to 2023. This analysis is significant for controlling the financial system by ensuring the data meets normality assumptions through the Jarque-Bera test, which allows for more precise financial planning and risk management decisions. The absence of autocorrelation effects, as proven in the residual test, also strengthens the reliability of the model in understanding market trends. The Two-Stage Least Squares method in simultaneous regression analysis provides in-depth insight into the relationship between economic variables such as the inflation rate and the exchange rate, supporting effective economic policy making. Understanding the elasticity of key variables to the inflation rate and exchange rate is also important for optimizing risk control strategies and financial resource allocation.*
Keywords: *Emerging Market, Financial System, Mixed Economic Model.*

INTRODUCTION

Financial system stability is important for the economy and financial market players, although there is no standard international definition (Rusiadi; Ade Novalina, 2016). Bank Indonesia stated that financial system stability means that the economic mechanism is functioning well and supports economic growth (Novalina & Rusiadi, 2018a, 2018b). Over the last two decades, financial system stability has become an international focus because it helps allocate funds from surplus units to deficit units, increasing the efficiency of use of funds and the capacity of the national economy (Aprillia et al., 2024; Rusiadi, 2024). Monetary, macroprudential and microprudential policies all aim to support financial system stability. Monetary policy influences the macroeconomy through the money market, while macroprudentiality maintains the resilience of the financial sector and overcomes systemic risks (Nasution et al., 2022; Rusiadi, Hidayat, et al., 2024). Microprudential policies regulate individual financial institutions, measuring risk and performance (Djannah Rosadi & Rusiadi, 2024). Macroprudential addresses systemic risks from credit growth, liquidity and capital flows, especially in emerging market countries (Novalina et al., 2018; Pratiwi et al., 2024; Rusiadi, Yusuf, et al., 2024). The macroprudential approach developed to cover the weaknesses

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of the microprudential approach in anticipating financial crises, with a broader focus covering the entire financial system.

Emerging markets are countries with economies towards the middle level, covering 80% of the global population and 20% of the world economy (Aizenman, 2019; Gao et al., 2024; Lama & Medina, 2020). These countries emerged because of development and reform. This research covers seven leading emerging market countries from each continent, namely India (South Asia), China (Central Asia), Russia (Europe), Indonesia (Southeast Asia), South Africa (Africa), Mexico (North America), and Saudi Arabia (West Asia), namely 7 emerging market countries (Lama & Medina, 2020; Qadri et al., 2024). This research focuses on how macroeconomic variables respond to mixed economic models (monetary, microprudential and macroprudential policies) in maintaining financial system stability in 7 Emerging Market Countries.

According to 2023 World Bank data, inflation in Mexico, South Africa, Indonesia, Russia and Saudi Arabia has increased since 2019 but declined between 2020 and 2021 (L. Chen et al., 2024; Gao et al., 2024; Liu & Zhang, 2024). In China, inflation fell to 1,593% in 2021 from 2% the previous year, and in India it fell to 2.491% from 4.941% in the previous year. Inflation reduces purchasing power, especially harming fixed and low-income groups, and creates economic uncertainty that hinders investment and long-term economic growth. Currency exchange rates in 7 Emerging Market Countries fluctuated from 2019 to 2023 (Afshan et al., 2024; Akalibey et al., 2023). The exchange rate in China weakened due to the economic influence of Indonesia as the main partner, while other countries experienced weakening exchange rates due to high demand for dollars and large import needs. The money supply also varies. In China, Indonesia, South Africa, Mexico, and Saudi Arabia, the number continues to decline from 2019 to 2023. However, India experiences a sharp increase in 2023, and Russia increases from 2020 to 2023. The increase in the money supply is influenced by the demand for goods and interest rates low interest, encouraging increased loans and credit. The money supply in the narrow sense (M1) includes cash and savings that can be used for payments, such as time deposits and savings which have potential purchasing power even though they are not as practical as cash (Funke et al., 2023; Makondo, 2023; Novalina et al., 2023).

Based on the background of the problems described above and to obtain clarity on the problems to be discussed, the author identifies the following problems: first, inflation is increasing in 7 Emerging Market Countries due to rising global food prices, which creates

uncertainty (Afshan et al., 2024; Lama & Medina, 2020; Qadri et al., 2024; Rusiadi, 2024). Second, exchange rates declined in China, Indonesia, South Africa, Mexico and Saudi Arabia from 2020 to 2023 due to high demand for dollars compared to local currencies. Third, the money supply in India increased by $97.12 in 2020 due to rising prices and high demand for goods, as well as interest rates affecting the money supply (Nazliana Nasution, Novalina, & Mahrani Rangkuty, 2023; Nazliana Nasution, Novalina, Rusiadi, et al., 2023). This research aims to analyze the influence of Money Supply (JUB), Interest Rates (SB), Return On Equity (ROE), Return On Assets (ROA), Capital Adequacy Ratio (CAR), and Non-Performing Loans (NPL) on inflation and exchange rates in 7 Emerging Market Countries; evaluating the effectiveness of the mixed economic model in controlling the financial system in 7 emerging market countries.

THEORETICAL BASIS

The mixed economic model combines free markets with government intervention to regulate economic activities in seven emerging market countries (Sanusi et al., 2018; Tanjung et al., 2022; Q. Wang, 2024). This approach creates a balance between the efficiency of market resource allocation and the need for regulation to address structural inequalities and support financial infrastructure development (Hidayat et al., n.d.-a, n.d.-b). In addition, this model also aims to achieve long-term economic stability by monitoring systemic risks through macroprudential policy (Novalina et al., 2018). This helps maintain exchange rate stability, control inflation, and reduce financial market volatility, which is essential to support sustainable economic growth. In addition, the mixed economic model is directed at achieving social justice by redistributing wealth and opportunities (Tasya Apriany Hamba & Sofia Yanti, 2023; Wardani et al., n.d.). By using economic policy instruments, governments can reduce income disparities, promote financial inclusion, and improve overall prosperity. This is important in overcoming challenges such as coordinating monetary and fiscal policy, as well as improving regulatory and supervisory capacity. Continuous evaluation of the implementation of this model is needed to ensure that economic and social goals can be achieved sustainably in emerging market countries with unique needs and diverse local conditions (Haines et al et al., 2019; Setiawan, 2018; Suhel, 2008).

Financial system stability plays an important role in supporting the progress of the real sector in Indonesia, because the health of the financial sector depends on the development of

the real sector. This financial system includes relationships between financial institutions and markets, so that instability in one sector can have an impact on other sectors. This stability is also closely related to price stability and monetary policy, and is integrated with banking conditions that influence national economic stability. Bank Indonesia, together with financial services authorities and other financial institutions, has an important role in maintaining this stability, so cooperation between institutions is key to avoiding potential friction (Raihan et al., n.d.; Wu et al., 2022).

Inflation, as a process of continuous price increases, has a direct impact on people's purchasing power. Types of inflation are divided based on their nature, such as low, medium, heavy and very high inflation, each of which has different characteristics (Alvin Hatmadi & Trihadmini, n.d.; Ganguly & Acharyya, 2021). Apart from that, inflation can be divided based on its causes, such as demand-pull inflation which occurs due to high demand or cost-push inflation which is caused by increased production costs (Chi, 2021; Xu & Li, 2024). Theories about inflation, such as Irving Fisher's quantity theory, Keynesians, and structuralists, provide insight into the factors that drive price increases in the economy. By understanding the various types and theories of inflation, the government can design appropriate policies to control inflation and maintain national economic stability in Indonesia.

RESEARCH METHOD

The simultaneous method is an approach to statistical analysis that is used to model and estimate the relationship between two or more variables that influence each other simultaneously in a system (Novalina et al., 2018). This method is generally used in econometrics and regression analysis to deal with the problem of simultaneity or endogeneity between observed variables. In this context, the variables considered are interdependent on each other and influence the estimation results of each variable simultaneously (Novalina et al., 2018; Rusiadi; Ade Novalina, 2016). Simultaneous methods allow researchers to model complex interactions between these variables, thereby providing a deeper understanding of the dynamics of the system being analyzed (Valentine et al., 2024).

The conceptual framework of this research is placed on the use of the simlutant method with the main aim of the simultaneous model, both the simultaneous system of equations method and the Generalized Method of Moments (GMM), is to provide an analytical tool that allows users to estimate the relationship between variables that influence each other

simultaneously (Novalina & Rusiadi, 2018a, 2018b). Simultaneous models are used to analyze interdependent relationships between variables, overcome endogeneity problems, test causal hypotheses, use data efficiently, and support effective policy decision making. Thus, the simultaneous model helps in understanding and estimating complex relationships between variables in a system that influence each other, as follows:

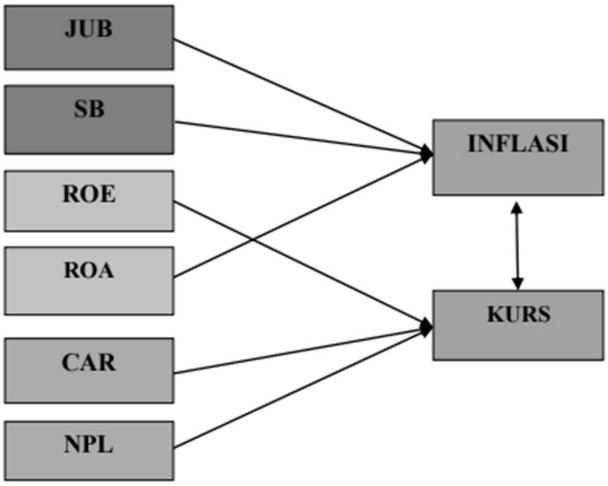

Figure 1. Research Conceptual Framework

Source: Author, 2023

In this research, it was obtained from Bank Indonesia and the World Bank. The data collection technique used is documentation study, where data is collected and analyzed from previous sources of information that are relevant to the research problem (Rusdianto et al., 2024). The data used in this research is secondary data taken and processed from the World Bank and Bank Indonesia, covering the period 2019 to 2023 for the last five years with the following model formulation:

Equation 1:

$$\mathbf{LOG(INF)=C(11)*LOG(JUB)+C(12)*LOG(SB)+C(13)*(ROA)+C(14)*(KURS)+}\varepsilon_1$$

Where :

INF = Inflation

JUB = Money Supply

SB = Interest Rate

ROA = Return On Assets

EXCHANGE = Exchange Rate

C(11), C(12), (13), (14) = Constants

α0-α3 = Regression coefficient 1

ε= Term error

Equation 2:

$$LOG(KURS)=C(21)*LOG(ROE)+C(22)*LOG(CAR)+C(23)*LOG(NPL)+C(24)*LOG(INF)+\varepsilon_2$$

Where :

EXCHANGE = Exchange Rate

ROE = Return on Equity

CAR = Capital Adequacy Ratio

NPL = Non-performing loans

INF = Inflation

C(21), C(22), (23),(24) = Constants

α0-α3 = Regression coefficient 2

ε= Term error

FINDINGS AND DUSCUSSION

Emerging Market Countries is a term that refers to countries from various continents that are included in the category of developing markets, which explains the latest economic developments throughout the world. Asia, as the largest continent in the world, plays a central role in this analysis, with four emerging market countries located in Central, Southeast, South and West Asia (Makondo, 2023; Novalina et al., 2023). Africa, as the second largest continent in the world, is known as the driest continent and is dominated by a black population. North America, the third largest continent in the world, has a land area of around 24,490,000 km2, or around 16.5% of the earth's total land area. Meanwhile, Europe, the second smallest continent

in the world in terms of area, is known for being advanced in civilization, culture and science (Novalina et al., 2018; Yiming et al., 2024). Each of these countries plays an important role in its regional economy and makes significant contributions to global economic dynamics.

India, under the leadership of Prime Minister Narendra Modi, is projected to experience substantial economic growth, with the potential to surpass other major economies. It is estimated that India will surpass the UK economy by the end of this year and Japan's economy in the next six years. This growth is driven by aggressive economic plans and is predicted to increase India's GDP from USD 3.1 trillion to USD 5.9 trillion by 2025, with the consumer market also expected to expand significantly. On the other hand, China is facing economic challenges amid the ongoing coronavirus outbreak, which has resulted in a decline in consumer spending in the transportation, retail, tourism and entertainment sectors. Despite this, China remains a key player in the global economy, with projected GDP growth of around 5.8% for 2020, influenced by fiscal and economic policies aimed at stabilizing its economic performance. Russia anticipates economic growth of around 3% between 2021-2022 despite facing financial market fluctuations, capital outflows and business pessimism due to new sanctions. The Russian economy, which is heavily dependent on the oil sector, is also affected by geopolitical tensions and demographic challenges, which affect its economic prospects (Lama & Medina, 2020; Qadri et al., 2024; Rusiadi, 2024).

Indonesia's economic growth is expected to improve to 5.1% - 5.5% in 2020, driven by global economic recovery and improved trade relations between the US and China. The country has benefited from increased exports and domestic consumption supported by fiscal stimulus and relaxed monetary policy (Mian et al., n.d.; Muttaqin, 2019). South Africa is experiencing an economic slowdown with GDP growth projected at only 0.6% amid domestic economic challenges, high unemployment rates, and declining investor confidence. The Central Bank of South Africa lowered interest rates to stimulate economic growth, emphasizing the need for structural reforms to revive the economy. Mexico is facing an economic downturn with projected GDP growth for 2019-2020 falling due to weak industrial production and continued uncertainty (Considine et al., 2023; Damayanti & Suhadak, 2016). The country's economy, which relies heavily on the automotive sector, anticipates a gradual recovery supported by domestic consumption and economic policies aimed at restoring investor confidence and in Saudi Arabia the country expects economic growth even though the global economic slowdown and oil market uncertainty may affect the growth rate of the Arab economy Saudi (Damayanti & Suhadak, 2016; Friedman et al., 2012). In its latest report, the Central Bank of

Saudi Arabia noted that Saudi Arabia's economy managed to grow 2.2% in 2018, compared to a decline of 0.7% in 2017. This growth was driven by the oil sector, although the country is also committed to increasing growth non-oil sector through expansionary fiscal policy and increased infrastructure investment. These seven countries reflect the diverse economic landscapes of their respective continents, reflecting their role as emerging market economies and their contributions to global economic stability and growth.

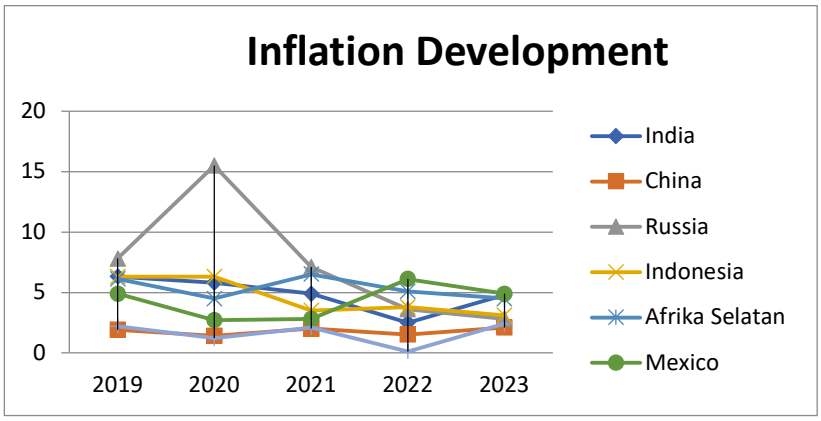

Figure 2. Inflation Development (%) in 7 Emerging Market Countries 2019-2023

Source: Worldbank, processed by the author (2023)

Based on table and graph data, it can be seen that inflation in 7 emerging market countries from 2019 to 2023 experienced significant fluctuations. There was a spike in inflation in several countries in 2020, for example inflation in Russia rose to 15.534%, but then started to slow down from 2021 to 2023 due to financial market turmoil, faster capital outflows, and pessimism in business, especially in the midst of implementing new sanctions by the US. In Mexico, inflation also experienced a spike in 2022, rising to 6.041% from 2.822% in the previous year.

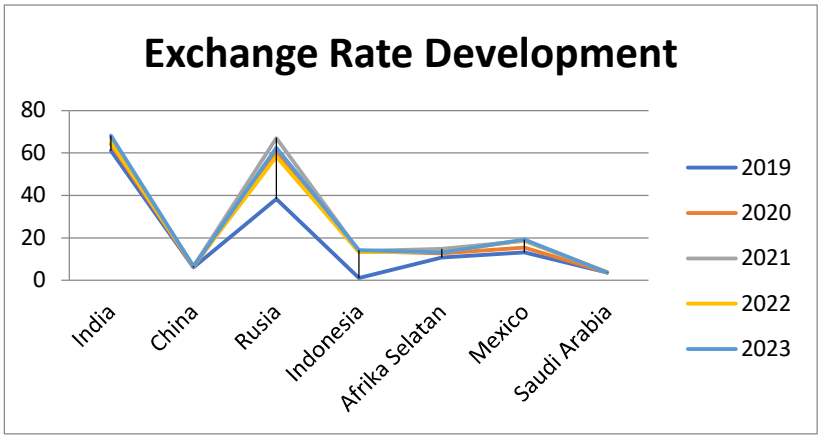

Figure 3. Exchange Rate Development (US$) 7 Emerging Market Countries 2019-2023

Source: Worldbank, processed by the author (2023)

Based on the table and graph above, it can be seen that currency exchange rates in 7 emerging market countries from 2019 to 2023 experienced various fluctuations. There was an increase in currency exchange rates in several countries in 2020, where India's exchange rate rose to 64,152 US$ from 61.03 US$ in the previous year, China rose to 6,227 US$ from 6,143 US$ the previous year, Russia rose to 60,938 US$ from 38,378 US$ the previous year, Indonesia rose to 13,389 US$ from 1,185 US$ the previous year, South Africa rose to 12,759 US$ from 10,853 US$ the previous year, and Mexico rose to 15,848 US$ from 13,292 US$ the previous year.

Simultaneous Output Results

Table 1. Residual Normality Test Results for INF and KURS

Component	Skewness	Chi-sq	Df	Prob.
1	1.021164	6.082856	1	0.0136
2	-0.277495	0.449186	1	0.5027
Joint		6.532042	2	0.0382

Component	Kurtosis	Chi-sq	Df	Prob.
1	4.674834	4.090723	1	0.0431
2	4.128454	1.857053	1	0.1730
Joint		5.947776	2	0.0511

Component	Jarque-Bera	Df	Prob.
1	10.17358	2	0.0062
2	2.306239	2	0.3157
Joint	12.47982	4	0.0141

Source: Eviews 2023 output

In this study, to check the normality of the data, the Jarque-Bera test was carried out. The criteria used are if the probability value from the Jarque-Bera (JB) test is greater than alpha 0.05, then the data is considered to be normally distributed. From the results of the table, a probability value of 0.3157 is found, which is greater than 0.05. Therefore, it can be concluded that the normality assumption is met. Next, an autocorrelation test is carried out as follows:

Table 2. Autocorrelation Test Results

Lags	Q-Stat	Prob.	Adj Q-Stat	Prob.	Df
1	10.59733	0.0315	10.90902	0.0276	4
2	14.05622	0.0803	14.57753	0.0679	8
3	18.17078	0.1106	19.07784	0.0867	12
4	22.67869	0.1226	24.16741	0.0859	16
5	29.01199	0.0875	31.55626	0.0483	20
6	29.53665	0.2006	32.18947	0.1224	24
7	32.70569	0.2468	36.15077	0.1388	28
8	34.71252	0.3399	38.75222	0.1913	32
9	36.73074	0.4348	41.46905	0.2444	36
10	38.70644	0.5285	44.23504	0.2975	40
11	41.84529	0.5644	48.81253	0.2857	44
12	45.10059	0.5924	53.76624	0.2631	48

Source: Eviews 2023 output

Based on the results of the degrees of freedom for the chi-square distribution (approximately), it can be concluded that all indicators of lag movement over time do not show any autocorrelation effects. This can be seen from the Q-statistic and Adj Q-statistic values which are all greater than 0.05, indicating that there is no significant autocorrelation effect in the data. The next analysis is a simultaneous test, as follows:

Table 3. Simultaneous Test Results

	Coefficient	Std. Error	t-Statistic	Prob.
C(10)	-0.027695	0.396027	-0.069933	0.9445
C(11)	-0.153185	0.054203	-2.826130	0.0064
C(12)	0.252444	0.125800	2.006699	0.0493
C(13)	0.032854	0.039342	0.835097	0.4070
C(14)	0.404933	0.101160	4.002903	0.0002
C(20)	3.020425	1.013882	2.979070	0.0042
C(21)	-0.039177	0.092323	-0.424341	0.6728
C(22)	-0.623035	0.388146	-1.605159	0.1137
C(23)	1.366030	0.216953	6.296420	0.0000
C(24)	-0.240877	0.350673	-0.686899	0.4948
Determinant residual covariance		0.040816		

Equation: INF = C(10)+ C(11)*JUB+ C(12)*SB+ C(13)*ROA+ C(14)*KURS
Instruments: JUB SB ROA ROE CAR NPL C
Observations: 35

R-squared	0.477855	Mean dependent var	1.303014
Adjusted R-squared	0.408235	S.D. dependent var	0.569688
S.E. of regression	0.438239	Sum squared resid	5.761611
Durbin-Watson stat	1.628328		

Equation: KURS = C(20)+ C(21)*ROE+ C(22)*CAR+ C(23)*NPL+ C(24)*INF

Instruments: JUB SB ROA ROE CAR NPL C
Observations: 35

R-squared	0.779907	Mean dependent var	2.701871
Adjusted R-squared	0.750562	S.D. dependent var	1.081137

Source: Eviews 2023 output

Estimates to evaluate the impact of variables simultaneously use the Two-Stage Least Squares model. The results of estimating the system of equations with Two-Stage Least

Squares can be seen in the following table. Based on the output of the structural equation, there are two equations which are explained as follows:

Equation Test Results 1:

The first equation is used to simultaneously evaluate the influence on Inflation (INF) and the Exchange Rate (KURS), with the following equation:

INF = C(10) + C(11)*JUB + C(12)*SB + C(13)*ROA

The output of the Two-Stage Least Squares model is as follows:

INF = -0.027695 - 0.153185*JUB + 0.252444*SB + 0.032854*ROA

Based on the estimation results, $R^2 = 0.477855$, which shows that the variables JUB, SB, and ROA can explain 47.78% of the variation in INF, while the remaining 52.22% is influenced by other factors not included in the model. From the estimation results, the t-value shows that there is one variable that is statistically significant in influencing INF at a significance level of 5%. This variable is KURS, with a probability value of 0.0042 < 0.05, indicating that KURS has a significant influence on INF.

1. JUB Coefficient and Elasticity of INF

   Based on the regression results, it was found that the regression coefficient for JUB was negative -0.153, which indicates that every 1 percent increase in JUB will cause a decrease in INF of -0.153 percent. JUB elasticity is calculated by the formula:

$$EJUB = \frac{dINF}{dJUB} \times \frac{JUB}{INF} = -0.153 \times \frac{9.631169}{8.013404} = -0.183 < 1 \text{ in Elastis}$$

   Negative elasticity results indicate that each increase in JUB will result in a greater percentage increase in INF.

2. Coefficient and Elasticity of SB to INF

   From the regression results, the regression coefficient for SB is positive 0.252, which means that every 1 percent increase in SB will result in a decrease in INF of 0.252 percent. SB elasticity is calculated as follows:

$$ESB = \frac{dINF}{dSB} \times \frac{SB}{INF} = 0.252 \times \frac{7.112883}{8.013404} = 0.223 < 1 \text{ in Elastis}$$

   Positive elasticity indicates that each increase in SB will result in a smaller percentage decrease in INF.

3. Coefficient and Elasticity of ROA to INF

   From the regression results, the regression coefficient for ROA is positive 0.032, which means that every 1 percent increase in ROA will result in a decrease in INF of 0.032 percent. ROA elasticity is calculated as follows:

$$EROA = \frac{dINF}{dROA} \times \frac{ROA}{INF} = 0.032 \frac{9.566979}{8.013404} = 0.038 < 1 \text{ in } \textbf{Elastis}$$

   Positive elasticity indicates that each increase in ROA will result in a smaller percentage decrease in INF.

Next are the Equation 2 Test Results as follows:

The second equation is used to simultaneously evaluate the influence of the Exchange Rate and Inflation, with the following formula:

EXCHANGE=C(20)+C(21)*ROE+C(22)*CAR+C(23)*NPL

Based on this equation, the output results from the Two Least Square model in Eviews are as follows:

EXCHANGE=3.020425–0.039177*ROE–0.623035*CAR+1.366030*NPL

Estimates show that $R^2 = 0.779907$, which means that the ROE, CAR and NPL variables can explain exchange rate variations of 77.99%, while the remaining 22.01% is influenced by other factors not included in the model. Based on the estimation results, the t-calculated value shows that only one variable significantly influences the exchange rate at a significance level of 5%, namely NPL, with a significant probability value. Other variables, such as INF, do not have a significant effect on the exchange rate because their probability values are greater than 0.05.

1. Coefficient and Elasticity of ROE to EXCHANGE

   Based on the regression results, it was found that the regression coefficient for ROE was negative -0.039, which indicates that every increase in ROE of 1 US$ will cause a decrease in the exchange rate of -0.039 US$. ROE elasticity can be calculated using the following formula:

$$EROE = \frac{dKURS}{dROE} \times \frac{ROE}{KURS} = -0.039 \times \frac{9.408076}{8.39709} = \text{-0.043<1 inElastis}$$

The negative regression coefficient results indicate that each increase in ROE will result in a smaller percentage decrease in the exchange rate.

2. CAR Coefficient and Elasticity of EXCHANGE

   The regression results show that the regression coefficient for CAR is negative -0.623, which means that every increase in CAR by 1 US$ will cause a decrease in the exchange rate of -0.623 US$. CAR elasticity is calculated as follows:

$$ECAR = \frac{dKURS}{dCAR} \times \frac{CAR}{KURS} = -0.623 \times \frac{9.210185}{8.39709} = \text{-48.182< 1 in Elastis}$$

   Even though the regression coefficient is negative, the CAR elasticity is also negative, indicating that an increase in CAR will result in a smaller percentage decrease in the exchange rate.

3. Coefficient and Elasticity of NPL to EXCHANGE

   From the regression results, it was found that the regression coefficient for NPL was positive 1,366, which means that every increase in NPL of 1 US$ will cause a decrease in the exchange rate of 1,366 US$. NPL elasticity can be calculated as follows:

$$ENPL = \frac{dKURS}{dNPL} \times \frac{NPL}{KURS} = 1.366 \times \frac{8.036859}{8.39709} = 1.307 > 1 \text{ Elastis}$$

   The results of a positive regression coefficient indicate that an increase in NPL will result in a larger increase in the exchange rate percentage.

Analysis of the two regression equations using the Two-Stage Least Squares method in a simultaneous model revealed significant findings in evaluating the relationship between variables related to financial system control at large (Novalina et al., 2018). The first equation examines the effect on Inflation (INF) with a focus on the variables JUB, SB, and ROA. The results show that this variable significantly influences changes in the Inflation rate (Hidayat et al., n.d.-a, n.d.-b). JUB, SB, and ROA each make a different contribution to reducing inflation, which is reflected in the regression coefficient and elasticity of each variable. This equation also shows that the KURS has a significant influence on inflation, confirming the importance of this variable in setting monetary policy,several key steps to improve effective control of the financial system (Alvin Hatmadi & Trihadmini, n.d.; Q. Chen, 2024; Khaliq, 2013; Wu et al.,

2022). First, in the context of controlling inflation (INF), variables such as JUB, SB, and ROA have been proven to have a significant influence on the level of inflation. The first step that can be taken is to understand in depth the impact of each variable on changes in inflation. With this understanding, the central bank or monetary authority can design more careful and effective policies to control inflation (He et al., 2024; Islam et al., 2017). In addition, because the exchange also influences inflation significantly, it is important to consider monetary policy that integrates the interaction between currency exchange rates and price stability (Novalina et al., 2023; Novalina & Rusiadi, 2018a, 2018b). Foreign exchange market intervention or interest rate adjustments can be instruments used to influence the inflation rate in accordance with national monetary policy objectives (Nasution et al., 2022; Nazliana Nasution, Novalina, & Mahrani Rangkuty, 2023; Nazliana Nasution, Novalina, Rusiadi, et al., 2023; Valentine et al., 2024).

The second equation places more emphasis on the influence on the exchange rate (KURS), with the ROE, CAR and NPL variables being the main focus. These findings illustrate how changes in ROE, CAR, and NPL can influence currency exchange rate fluctuations (Shang et al., 2023; Wu et al., 2022). The regression results show that ROE and CAR have a negative effect on the exchange rate, while NPL makes a positive contribution. The elasticity of each of these variables indicates how much the exchange rate responds to changes in ROE, CAR and NPL (Kirchherr et al., 2023; Tavares & Almeida, 2024). This analysis provides an in-depth understanding of the economic dynamics related to the variables studied, as well as the implications for monetary policy. By considering these results, policy makers can design more effective strategies in managing financial stability and currency exchange rates in the economic system (Kempa & Nelles, 1998; Novalina et al., 2023). An effective exchange rate control strategy requires coordination between fiscal and monetary policies. For example, by understanding that ROE and CAR tend to have a negative effect on the exchange rate, central banks can use policy instruments to encourage exports or regulate capital flows to influence the exchange rate according to the needs of the domestic economy (Gaies et al., 2024; C. Wang et al., 2024). On the other hand, special attention should also be paid to NPLs, which make a positive contribution to the exchange rate. Effective financial system management should focus efforts on improving the quality of banking assets and carefully managing credit risks to minimize their negative impact on currency exchange rates (Funke et al., 2023; Rusiadi, 2024; Rusiadi et al., 2021). By considering the results of this analysis, policy makers can adopt a coordinated strategic approach to managing financial stability and exchange rates in their

economic systems. These steps not only aim to strengthen control over inflation and exchange rates, but also to reduce economic uncertainty and increase the competitiveness of the national economy in the global market.

CONCLUSION AND RECOMMENDATION

The analysis carried out in this research provides a significant contribution to financial system control. By ensuring financial data meets the assumption of normality through the Jarque-Bera test, decisions in financial planning and risk management can be made more precisely and accurately. The detection of the absence of autocorrelation effects in the data, as proven through residual tests for autocorrelation, provides confidence that the model used can be relied upon in understanding actual market trends and movements.

In addition, the use of the Two-Stage Least Squares method in simultaneous regression analysis makes it possible to model complex relationships between variables, such as between inflation (INF) and currency exchange rates (KURS). The significant results of this analysis not only strengthen our understanding of the factors influencing economic conditions, but also provide valuable guidance in formulating effective economic policies to control inflation and maintain exchange rate stability. Understanding the elasticity of key variables towards INF and KURS also provides in-depth insights that can be used to optimize risk control strategies and financial resource allocation in the future. Thus, the results of this analysis provide a solid basis for making more informed decisions in financial system management, with further steps to continue expanding the model and monitoring data conditions to ensure the sustainability and accuracy of the financial analysis carried out.

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