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Exchange Rate, GDP and Inflation: Their Impact on Extreme Poverty in Indonesia

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Abstracts: Exchange Rate, GDP and Inflation: Their Impact on Extreme Poverty in Indonesia

This study simultaneously analyzes how the rupiah exchange rate, gross domestic product and inflation affect extreme poverty in Indonesia over the period 2003-2023. The novelty of this study lies in the long-term approach that examines the dynamic interaction of the three variables together, which has not been widely studied in the context of extreme poverty in Indonesia. The impact of this research in the future is expected to be the basis for a more comprehensive economic policy that focuses on exchange rate stability, overall economic growth, and inflation control to reduce extreme poverty sustainably. Using a quantitative approach and multiple linear regression analysis, it was found that exchange rate stability and GDP growth support poverty reduction, while inflation worsens the condition of vulnerable groups. This study found that exchange rate strengthening and GDP growth have a significant effect in reducing extreme poverty by increasing people's purchasing power and income. In contrast, inflation exacerbates extreme poverty by depressing the purchasing power of vulnerable groups. This emphasizes the importance of exchange rate stability, inclusive economic growth, and inflation control. The findings highlight the need for policies that maintain exchange rate stability, promote inclusive economic growth, and control inflation to effectively reduce extreme poverty in Indonesia. The implications of this study suggest that the government needs to integrate economic strategies that focus on stability and inflation control in poverty alleviation policies, especially to improve the welfare of low-income groups.
Keywords: Exchange Rate; Gross Domestic Product; Inflation; Extreme Poverty

INTRODUCTION

Poverty is the percentage of a country's population living on less than $1.25 (in US Dollars) daily throughout the year (Blau, 2018). Poverty development has been an exciting topic to discuss, but there is no explicit agreement on what exactly happens to poverty (Maitra, 2016). Sedlmayr et al. (2020) the leading indicators of poverty include per capita compensation, income, and assets owned. In addition, the structure of poverty is also seen from financial positions such as savings and debt, employment status of household members, and community welfare. Other aspects considered include nutrition, education, health, decision-making processes, cognitive development, and community life. Meanwhile, Mohanty & Vasishtha (2021) poverty in urban areas is measured based on four main aspects, namely education, health, living standards, and housing conditions.

Poverty alleviation is not only influenced by economic growth; a sector's contribution to poverty alleviation depends on its growth performance, the indirect impact it has on the growth of other sectors, the participation rate of the poor in the sector, and the size of the sector in the overall economy (Christiaensen et al., 2011). Meanwhile, Desai & Rudra (2019) stated that the sizeable presence of the agricultural sector (as well as the share of unskilled labor associated with this sector) creates the need for broader anti-poverty programs to protect the primary source of livelihood for this group (the rural poor). While most of the progress in poverty alleviation has been achieved through wage increases, globalization and its attendant shocks, especially in middle-income countries with large populations living in extreme poverty, have magnified the need for broader social protection.

Franzen & Bahr (2024) Economic growth and increased employment opportunities can help reduce poverty. However, the benefits of this growth are often unevenly distributed, especially to low-income groups, so poverty persists or even increases in some strata of society. Changes in the overall poverty rate in a population should reflect changes in smaller subgroups. For example, suppose poverty in a particular region of a country increases while poverty rates in other regions remain stable. In that case, subgroup consistency suggests that overall poverty in the country should not decrease (Dutta et al., 2021). Meanwhile, Kis-Katos & Sparrow (2015) Changes in poverty rates will also be affected by overall economic growth and targeted social policies. This factor can differ depending on the initial poverty level (due to convergence or policy focus) and economic conditions at the local level.

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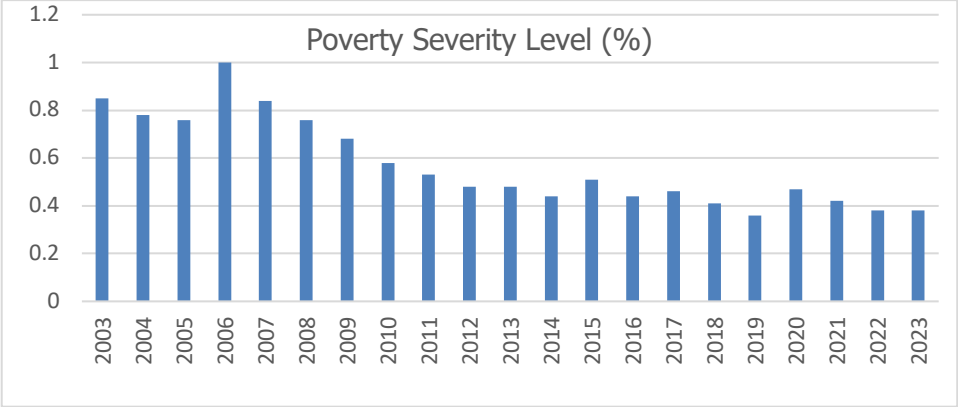

Figure 1. Poverty Severity Level 2003-2023

Source: Central Bureau of Statistics (BPS), processed by the author 2024

From Figure 1, it can be concluded that the poverty severity rate in Indonesia during the 2003-2023 period showed a significant downward trend, although there were fluctuations in specific years. At the beginning of the period, in 2003, the poverty severity rate was still around 0.8%. This reflected the relatively large inequality among the poor. In the following three years, the severity of poverty remained high and peaked in 2006, where the graph shows a figure of almost 1%. This spike can be attributed to various global economic factors or domestic policies that worsened the situation of the poor.

After reaching its peak in 2006, there was a gradual decline until 2011, when the poverty severity rate began to stabilize at around 0.4%. From 2012 to 2017, the graph shows slight fluctuations, but overall, it still shows stability, tending to increase from the previous year. In 2019, there was a slight increase, but it declined again in the following years, until in 2023, the poverty severity rate fell to close to 0.4%, lower than the beginning of the period shown on the graph. Overall, the graph shows that in the last two decades, despite Indonesia's global and domestic economic challenges, there has been an improvement in addressing the severity of poverty among the poor. From the graph data above, this study also agrees with the research conducted Estrades et al, (2023) which states that aided by solid economic resilience and sustainable growth in the RCEP region, extreme poverty in the baseline scenario is expected to fall from 0.98% in 2020 to 0.12% in 2035.

Exchange rate fluctuations deter investment and are a sign of economic instability, which makes some countries less attractive to foreign investors (Moraghen et al., 2021). Exchange rates are expressed in terms of the amount of domestic currency equivalent to one US dollar, so an increase in the exchange rate indicates a depreciation of the local currency compared to

the US dollar, developed countries' exchange rates appreciate in reaction to an increase in policy rates, while developing countries tend to depreciate (Hnatkovska et al., 2016). As a country becomes richer and wages increase, the price of non-traded goods that were previously much lower in poor countries than in rich countries will rise. Unless there are effects from exchange rate changes, the PLI (Price Level Index) will also increase, as all prices tend to converge to global prices (Deaton & Aten, 2017).

In a fixed exchange rate system, macroeconomic policies involving non-traded goods can have mixed impacts on economic stability, depending on how they treat the exchange rate and imported goods (Helpman, 2014). In the business cycle, FDI inflows tend to increase when the domestic currency depreciates. This is because a falling currency often influences foreign firms' decision to invest in the country by taking advantage of lower labor costs (Shi, 2019).

In research Fischer (2014) exchange rate appreciation reduces the output cost of disinflation by lowering import prices, accelerating the decline in the price level, and depressing wages. However, this appreciation also increases unemployment due to pressure from the trade deficit. The net impact may vary depending on the elasticity of demand and supply, with the cost of disinflation potentially lower or higher depending on the exchange rate policy and related economic responses. The findings Gagnon et al. (2014) show that changes in the exchange rate have a low effect on import prices of finished goods in the United States. From these differences, additional empirical studies can help understand the factors that impact exchange rate changes on import prices across countries and economic conditions so as to design more adaptive monetary and fiscal policies.

Gross Domestic Product (GDP) is measured as the total value of goods and services produced within the territory of a country within a certain period of time. The calculation of Gross Domestic Product (GDP) generally uses two methods, namely the production approach and the expenditure approach, taking into account price factors and appropriate deflators to reflect real changes in national output (Burstein & Cravino, 2015). Gross Domestic Product (GDP) is one of the most important aggregate indicators in assessing the size and performance of an economy. Therefore, statistical agencies strive to improve the accuracy of their measurements (Sekine, 2022).

According to Laborde Debucquet & Martin (2018) high Gross Domestic Product (GDP) growth in developing countries can reduce poverty, especially in rural areas. However, a slowdown in Gross Domestic Product (GDP) can increase poverty, as Gross Domestic Product

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(GDP) per capita has a direct impact on income and welfare. Every region shows high levels of welfare when measured by Gross Domestic Product (GDP) per capita and experiences significant inequalities (Ambarkhane et al., 2020). Macroeconomic indicators such as Gross Domestic Product (GDP) per capita play an important role in influencing individuals' subjective well-being, which reflects the level of progress and growth in the region where they live (Bernini et al., 2023). With positive growth rates, the greater the inequality initially, the slower the income-based poverty reduction. This suggests that reducing inequality can be an effective measure to reduce poverty (Apergis et al., 2024).

Inflation is a complex phenomenon where changes in monetary policy can have a significant impact on the public debt burden (Krause & Moyen, 2016). The inflation rate is also an indicator that reflects macroeconomic stability, which is a basic condition for the success of reforms. This macroeconomic stability is also an important factor in promoting economic growth (Pafadnam, 2024). Rising inflation can weaken a person's sense of control over his or her life, which can have an impact on an individual's well-being, as low perceived control is often associated with reduced quality of life (Nikolaev & Bennett, 2016).

Most policymakers and economists failed to predict how strong and persistent the inflation surge would be and took action too late. By 2022, inflation had become a pressing issue for central banks in many countries, prompting the most coordinated tightening of monetary policy in history. Both developed, and emerging economies raised their policy rates, and almost as quickly as inflation increased, global inflation began to subside, falling to 5.8 per cent in the fourth quarter of 2023 on an annualized basis (Dao et al., 2024).

Unexpected monetary tightening leads to a significant drop in output and a small and negligible drop in the price level (Gertler & Karadi, 2015). Monetary policy that focuses on improving welfare will be more effective if it provides a strong response to output rather than focusing on stabilizing inflation (Ikeda & Kurozumi, 2019). Monetary policy that keeps expectations of future marginal cost increases stable will be effective in avoiding prolonged deflation despite a significant decline in economic activity and increased financial stress (Del Negro et al., 2015)

It has been theoretically and empirically proven that inflation uncertainty tends to increase during periods of high inflation (Conrad & Hartmann, 2019). When inflation is high and volatile, prices tend to change more frequently with smaller magnitudes, whereas when inflation is low and stable, prices tend to change less frequently, but with larger magnitudes (Wulfsberg,

2016). Findings from Apergis et al.(2021) show that inflation contributes to inflation uncertainty, which means that one of the most significant impacts of a high inflation rate is increased inflation uncertainty. Meanwhile, according to Ajide & Alimi (2023) inflation instability creates economic uncertainty that has a stronger impact on social stability than fixed inflation.

These findings highlight that extreme poverty is a complex and multidimensional problem, requiring a holistic approach that is contextualized to local conditions. This study offers a novelty by analyzing the simultaneous effect of the Rupiah exchange rate, Gross Domestic Product (GDP), and inflation on extreme poverty in Indonesia, using 21 years of data (2003-2023). This long-term approach fills the gap of previous research that generally only studies the impact of each variable separately or over a shorter period. Unlike other studies that tend to focus on general macroeconomic aspects, this study specifically links macroeconomic dynamics with extreme poverty, which is rarely the main focus. As such, this study is expected to provide a new understanding of how the interaction between exchange rate stability, economic growth, and inflation can be geared towards reducing extreme poverty more effectively. Furthermore, this study also offers an empirical basis for designing more comprehensive and needs-oriented economic policies for the poor in Indonesia.

This research not only provides a deeper understanding of the relationship between economic variables and extreme poverty but also provides important implications for future policies. By providing evidence-based recommendations, this research can serve as a foundation for the government in formulating more effective poverty alleviation policies, especially in maintaining exchange rate stability, promoting inclusive economic growth, and controlling inflation. Going forward, this research is expected to encourage further development in exploring economic and social strategies to reduce extreme poverty in a sustainable manner.

LITERATURE REVIEW

The impact of exchange rates on extreme poverty can be explained through Keynesian theory. Cacciatore et al., (2016) outline how exchange rate policy contributes to economic stability, specifically through a New Keynesian economic model that focuses on the relationship between exchange rate policy and international financial market integration. Within this framework, flexible exchange rate fluctuations can improve international competitiveness, strengthen exports, and increase aggregate demand, which is important for economic growth. Yan & Yip, (2021) stated that active government intervention through effective exchange rate management can reduce the negative impact of external shocks, protect people's purchasing

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power, and reduce inflationary pressures. This theory reflects that exchange rate policy not only affects price stability but also plays an important role in poverty alleviation by maintaining people's purchasing power and minimizing the decline in output due to external economic turmoil.

Classical economic theory offers different views on the role of government in managing exchange rates. Classical economists argued that exchange rate equilibrium would be achieved naturally through market mechanisms without the need for government intervention. As noted by Canto & Wiese., (2018) experience with floating exchange rate systems shows that, although the economy is controlled by the government, the central bank still faces difficulties in managing inflation effectively. Therefore, Carriere-Swallow et al., (2021) when a fixed exchange rate is used without flexibility, the government may resort to internal devaluation, such as lowering overall prices, which could trigger a deflationary recession and exacerbate the decline in real income. This overly rigid exchange rate approach, when faced with external shocks, can actually prolong economic inequality, exacerbate poverty, and hamper economic growth.

Effective exchange rate policy requires a balance between the Keynesian interventionist approach and the free market mechanism proposed by classical theory. Moraghen et al. showed that the impact of exchange rate instability varies across sectors, with the construction, property, and telecommunications sectors being more vulnerable to fluctuations compared to the financial or manufacturing sectors. This instability can lead to job losses in labour-intensive sectors, exacerbating poverty. With this in mind, an exchange rate policy that is adaptive, flexible, and free to consider market conditions while still leaving room for intervention in times of crisis will create more sustainable economic stability. Thus, an approach that combines market flexibility with prudent government intervention can provide optimal benefits for economic stability and inclusive growth, reduce poverty, and promote more equitable welfare.

The impact of the gross domestic product on extreme poverty can be explained through the neo causal growth theory pioneered by the Solow-Swan growth model. According to this model, economic growth reflected through an increase in Gross Domestic Product (GDP) can improve people's welfare through efficient resource allocation and increased productivity. In the context of neoclassical theory Bandiera et al., (2022) shows that the transformation of labor from the agrarian sector to the industrial and service sectors contributes to an increase in labor productivity and living standards, thereby reducing extreme poverty through increased income. The theory also states that economic growth driven by an increase in Gross Domestic Product

(GDP) allows the government to allocate more budget to sectors such as education, health, and infrastructure that support low-income groups (Ajide & Alimi, 2023).

In contrast, Marxist economic growth theory offers the opposite perspective, emphasizing that Gross Domestic Product (GDP) growth does not necessarily reduce poverty due to the inequality created by unequal income distribution. Increases in Gross Domestic Product (GDP) are more likely to be enjoyed by the economic elite, while the poor may only have a limited impact (Tahir et al., 2020). This theory highlights that without effective redistribution policies, poverty will persist even if Gross Domestic Product (GDP) continues to increase. Khan et al. support this view by pointing out that the unequal distribution of the fruits of growth can be a challenge in addressing extreme poverty, especially if the sectors contributing to Gross Domestic Product (GDP) do not create inclusive employment.

The solution to extreme poverty through Gross Domestic Product (GDP) lies in a combination of inclusive economic growth and effective redistribution policies. This study argues that Gross Domestic Product (GDP) growth supported by equitable distribution of growth outcomes can have a more significant impact in alleviating extreme poverty in Indonesia. This confirms that a balanced approach between GDP growth and equity is needed to maximize the positive impact of GDP on poverty, especially through improving the quality of life and economic access for all people.

The impact of inflation on extreme poverty can be explained using Keynesian theory, according to this theory, inflation can be controlled through active monetary policy that keeps inflation expectations stable, thus preventing economic uncertainty that can adversely affect people's welfare (Del Negro et al., 2015). Policies that focus on price stability and inflation expectations can help minimize the negative impact of inflation on vulnerable groups and people's purchasing power. Next, Adam et al., (2024) state that the ideal monetary policy responds to natural interest rate declines and instability by setting a higher average inflation rate. Monetary policy also needs to play a role in stabilizing price fluctuations triggered by changes in demand, with reactions to price increases being stronger than to price decreases. This means that an effective monetary policy should be able to keep people's inflation expectations stable. This stability helps to prevent economic uncertainty that can interfere with investment and consumption decisions. When inflation expectations are maintained, people will feel more secure about their future purchasing power, which supports sustainable economic growth.

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In contrast, the quantity theory of money argues that inflation is caused by an increase in the amount of money in circulation, which in turn increases overall prices. This perspective is opposite to the Keynesian perspective as it emphasizes that rising inflation is more structural in nature and cannot be addressed by simply controlling inflation expectations. Research Sheremirov (2020) mentioned that price fluctuations in certain sectors, especially price-flexible goods such as energy and food, often trigger inflation uncertainty, making it difficult to maintain inflation expectations. Hatzius (2024) also highlights how disruptions in the supply of durable goods and the rental housing market can depress inflation, suggesting that sector-specific factors can exacerbate inflation stability and challenge the effectiveness of monetary policy in maintaining economic balance.

The stability of inflation expectations and control of the money supply plays a role in managing inflation. With policies that respond to both factors, the government can more effectively maintain price stability and prevent the adverse effects of inflation on vulnerable groups. For example, with monetary policy that stabilizes inflation expectations, people can plan their spending with more certainty, while controlling the quantity of money reduces the risk of too high inflation (Basu, 2024). This combination is expected to maintain people's purchasing power and support the reduction of extreme poverty in Indonesia. This study aims to determine how much influence the rupiah exchange rate, gross domestic product, and inflation have on extreme poverty in Indonesia. Therefore, the hypothesis that can be proposed is as follows:

H1: The Rupiah exchange rate has a significant negative impact on extreme poverty in Indonesia. Good exchange rate stability can increase people's purchasing power and attract foreign investment (Moraghen et al., 2021). A stronger exchange rate also reduces import prices, which in turn reduces the cost of living for the poor (Fischer, 2014).

H2: Gross Domestic Product (GDP) has a significant negative effect on extreme poverty in Indonesia. GDP growth is often associated with increased employment and household income, which supports poverty alleviation (Laborde Debucquet & Martin, 2018). A redistributive approach to economic growth can improve the welfare of the poor (Capuno, 2022).

H3: Inflation has a significant effect on extreme poverty in Indonesia. High inflation depresses the purchasing power of the poor due to rising prices of basic necessities, creating economic instability that adversely affects vulnerable groups. Inflation stability is necessary to maintain social welfare (Dao et al., 2024).

H4: The combination of macroeconomic factors such as exchange rates, economic growth, and

inflation affect people's welfare simultaneously, with an integrated impact (Estrades et al., 2023). Stability in these three variables is necessary to reduce extreme poverty in a sustainable manner.

METHODS

The method in this study, the approach used is quantitative. The data collection used comes from secondary data obtained from the publications of the Central Statistics Agency (BPS), World Bank International (WDI) and Bank Indonesia (BI). The data analyzed is time series data from Indonesia for the period 2003-2023. The secondary data used includes the Rupiah Exchange Rate (X1), Gross Domestic Product (GDP) (X2), Inflation (X3), and extreme poverty (Y) in Indonesia. For the independent variable X1, the data used is the rupiah exchange rate against the United States dollar (USD). The independent variable X2 uses the GDP growth indicator growth (%). The independent variable X3 uses the inflation indicator. Meanwhile, related to the dependent variable, the indicator used is the ratio of the population experiencing the severity of poverty in Indonesia.

Table 1 Author's Secondary Data Table 2003-2023

Variables	Total Data	Average	Std Deviation	Min	Max	Reach
Extreme Poverty (%)	21	0.57	0.19	0.36	1.00	0.64
Exchange Rate (USD)	21	11553.53	2451.23	8577.13	15236.88	6659.75
GDP (%)	21	5.16	0.95	2.07	6.34	4.27
Inflation (%)	21	5.63	2.96	1.56	13.33	11.77

Source: Secondary data output, processed by the author 2024

The data in Table 1 above presents descriptive statistics for four economic variables, namely extreme poverty, exchange rate, Gross Domestic Product (GDP), and inflation, over the analysis period covering 21 years 2003-2023. The average extreme poverty was recorded at 0.57%, with a standard deviation of 0.19, indicating relatively little variation around the mean. The average exchange rate over the period was 11,553.53 USD, with a standard deviation of 2,451.23, indicating significant fluctuations. GDP showed an average of 5.16% and a standard deviation of 0.95%, reflecting the stability of economic growth, while inflation averaged 5.63% with a standard deviation of 2.96% indicating that the inflation rate experienced considerable variation over the period. The range for each variable also shows a significant difference between the minimum and maximum values, reflecting the changing dynamics of the economy in this period of analysis.

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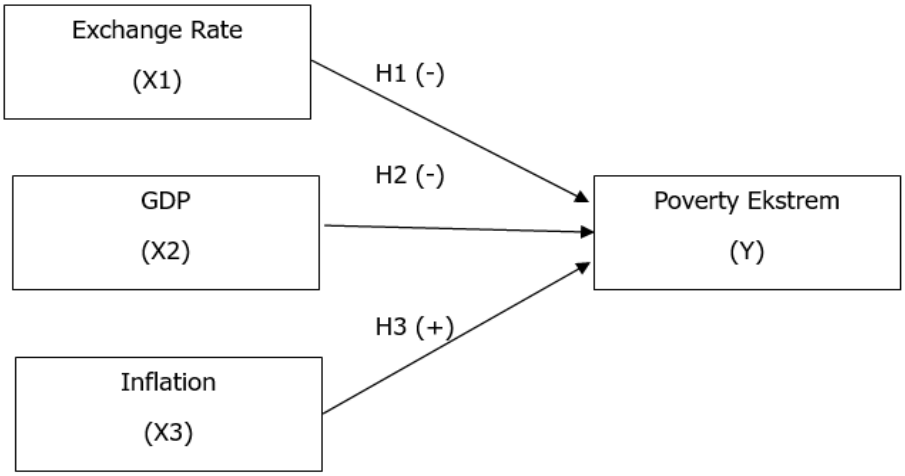

Image. 1 Research Design

Source: Author 2024

Sudariana & Yoedani (2022 Multiple Linear Regression is a linear regression model that involves more than one independent or predictor variable. In English, this term is known as multiple linear regression. In this study, the objects studied include the Rupiah Exchange Rate, Gross Domestic Product (GDP) and Inflation with a focus on Poverty. In this case, there are three independent variables and one dependent variable. Thus, Multiple Linear Regression is expressed in the mathematical equation as follows:

$$Y = a + b1X1 + b2X2 + b3X3 + e$$

This research design uses a regression model to analyze the relationship between poverty and economic factors such as the exchange rate (X1), Gross Domestic Product (GDP) (X2), and inflation (X3). In this model, the dependent variable is the poverty rate (Y) which is influenced by three independent variables: Exchange rate (b1) which reflects the impact of currency fluctuations, Gross Domestic Product (GDP) (b2) which shows the contribution of economic growth to poverty, and inflation (b3) which affects people's purchasing power. The coefficient of each variable provides information on how much it affects the poverty rate, while the error term (e) includes variations that are not explained by the model.

RESULTS AND DISCUSSION

Partial t test is used in regression analysis to determine whether the coefficient of each independent variable is significantly different from zero. The Rupiah Exchange Rate variable has a t value of -4.015193 with a prob. (significance) value of 0.0009 (>0.05), so it can be concluded that the Rupiah Exchange Rate variable has a negative but significant effect on Poverty. The Gross Domestic Product (GDP) variable has a t value of -2.357226 with a Prob. (significance)

value of 0.0307 (>0.05), so it can be concluded that the Gross Domestic Product (GDP) variable has a negative but significant effect on Poverty. The Inflation variable has a t value of 3.743959 with a Prob (significance) value of 0.0016 (<0.05), so it can be concluded that the Inflation variable has a significant effect on Poverty.

Furthermore, the F test is used to test the significance of the model as a whole. It is known that the F-statistic value is 22.50588 with a Prob. (F-statistic) value of 0.000005 (<0.05), it is concluded that the Independent variables (X) have a significant effect together (simultaneously) on the variable (Y).

And the Coefficient of Determination Test is used to assess how well the regression model explains data variation. It is known that the Adjusted R square value is 0.763363, so it can be concluded that the effect of the Independent Variable on the Dependent Variable simultaneously (together) is 76.3%. While the remaining 23.7% is influenced by other variables outside this study.

The following are the results of data processing:

Table 2 Estimation of the Effect of Rupiah Exchange Rate, Gross Domestic Product (GDP) Inflation on Extreme Poverty in Indonesia

Variables	Coefficient	Standard Error	t-Statistic	Probability	Sign	Hypothesized
Extreme Poverty	0.248013	0.324661	0.763913	0.4554		
Exchange Rate	-1.74E-05	1.44E-05	-1.207.178	0.2439	signifikan	Yes
GDP	9.94E-05	4.86E-05	2.044.363	0.0567	signifikan	Yes
Inflation	0.021909	0.010099	2.169.362	0.0445	signifikan	Yes
R-squared	0.785780	Average of dependent variables		0.571905		
Adjusted R-squared	0.747977	S.D. dependent variable		0.187926		
S.E. from regression	0.094342	Akaike info criteria		-1.714.127		
Log likelihood	2.199.834	Hannan-Quinn Critic.		-1.670.949		
F-statistics	2.078.592	Durbin-Watson Statistics		1.298.172		
Prob (F-statistic)	0.000006					

Source: Secondary data output after processing Author 2024

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The Effect of Rupiah Exchange Rate on Extreme Poverty

The findings of this study show that the Rupiah exchange rate has a significant negative effect on extreme poverty, with a t-statistic value of -4,015,193 and a probability of 0.0009. This result is in line with the proposed hypothesis, which is that strengthening the Rupiah exchange rate can reduce extreme poverty. Exchange rate stability helps maintain people's purchasing power by reducing the import price of basic goods so that the poor are better able to fulfil their basic needs.

Furthermore, the relationship between the exchange rate and extreme poverty reflects the important role of macroeconomic stability in improving people's welfare. When the exchange rate appreciates, the prices of imported goods become lower, having a positive impact on the purchasing power of the poor who rely heavily on these basic necessities. In addition, exchange rate appreciation incentivises foreign investors to enter the domestic market, which then contributes to the creation of new jobs and an increase in the income of poor households. However, this impact is asymmetric, as export-dependent rural areas tend to experience a decline in the competitiveness of local products due to the depreciation of the purchasing power of trading partner countries.

A strengthening exchange rate not only reduces the cost of living through reduced prices of imported goods but also supports government fiscal policies, such as budget allocations for poverty alleviation programs. Indirectly, exchange rate stability provides the basis for increased investment and production, which creates multiplier effects in the economy. However, to maximize these benefits, policies that support exchange rate stability must be accompanied by an equitable distribution of economic benefits, particularly to regions that are most vulnerable to the negative impacts of exchange rate strengthening. The relationship between a stronger Rupiah and reduced extreme poverty can be explained in terms of increased purchasing power and lower import costs. A stronger exchange rate makes imported goods more affordable so that people's basic needs, especially for low-income groups, can be obtained at a cheaper price. This is in line with the economic concept that domestic currency appreciation often reduces domestic inflationary pressures (Gona & Sahoo, 2020). This condition has an impact on reducing the extreme poverty rate because people can allocate more funds for other needs.

In addition, the real exchange rate is affected by various macroeconomic factors, including anticipated inflation trends, inflation gaps with trading partner countries, unemployment rates, and short-term interest rates (Huber & Kaufmann, 2020). When the price of a non-traded good rises faster than the price of other goods, an exchange rate appreciation

occurs (Souza et al., 2021). This then contributes to reducing extreme poverty through improving people's welfare.

In addition to the direct effect of the exchange rate on extreme poverty, the findings of this study also show that exchange rate stability supports overall macroeconomic stability, which has an impact on improving welfare. This effect is more pronounced for low-income groups, who tend to be more vulnerable to price fluctuations.

The Effect of Gross Domestic Product (GDP) on Extreme Poverty in Indonesia

The findings of this study show that Gross Domestic Product (GDP) has a significant negative effect on extreme poverty, with a t-statistic value of -2,357,226 and a probability of 0.0307. This result is consistent with the hypothesis, which is that an increase in GDP reduces extreme poverty. Higher GDP reflects economic growth that generates more jobs, increases household income, and strengthens the purchasing power of the poor.

The relationship between GDP and extreme poverty suggests that economic growth contributes directly to poverty alleviation. When GDP increases, national income increases, which allows the government to allocate more budget to sectors that are important for poverty reduction, such as education, health, and infrastructure. In addition, stable economic growth gives the private sector the confidence to invest more, thus creating new employment opportunities that can help the poor increase their income. However, these positive impacts are highly dependent on the inclusiveness of the growth. If economic growth is only enjoyed by a few elite groups without adequate redistribution, then the poor may not fully benefit.

Economic growth enables income redistribution through well-targeted social policies, such as cash transfers and community empowerment programs. This is important to ensure that the benefits of economic growth can be felt by all levels of society, especially those below the poverty line. In addition, higher GDP is often associated with overall economic stability, which helps create macroeconomic conditions conducive to social development.

The relationship between Gross Domestic Product (GDP) and extreme poverty reduction can be explained through economic growth theory. Economic growth increases national income, which allows the government to increase public spending in sectors that support the poor, such as education, health, and infrastructure. Capuno (2022) mentioned that economic growth plays a role in reducing poverty, especially when accompanied by progressive income redistribution. Well-targeted redistribution policies help ensure that the benefits of an increase in Gross Domestic Product (GDP) can be felt by all levels of society, especially those below the poverty line. In addition, higher Gross Domestic Product (GDP) growth is often associated with economic

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stability, which has a positive impact on social welfare. Farzanegan & Gholipour (2023) emphasized that a stable Gross Domestic Product (GDP) will reduce the risk of instability, which is important for creating economic conditions that support poverty alleviation.

Another interesting finding is that an increase in Gross Domestic Product (GDP) per capita driven by technological innovation and urbanization contributes to inclusive economic growth. Byaro & Rwezaula (2024) showed that technological innovation and urbanization increase productivity, create new jobs, and expand people's purchasing power. Urbanization, in particular, can improve people's access to public facilities and basic services, which supports poverty alleviation in the long run.

The Effect of Inflation on Extreme Poverty in Indonesia

The findings show that inflation has a significant positive effect on extreme poverty, with a t-statistic value of 3,743,959 and a probability of 0.0016. This result is consistent with the hypothesis, which is that high inflation worsens the condition of the poor by reducing their purchasing power. When inflation increases, the prices of basic necessities rise, making it more difficult for the poor to fulfil their basic needs, which worsens the level of extreme poverty.

The relationship between inflation and extreme poverty reflects the negative impact of price pressures on vulnerable groups. High inflation increases the prices of goods and services, especially basic needs such as food and energy, which are the main expenditures of the poor. As a result, their purchasing power decreases, and their allocation of funds for other needs, such as education and health, becomes increasingly limited. In addition, high inflation creates economic uncertainty, which can hamper investment and employment growth, thus worsening the economic situation of the poor.

High inflation is often caused by cost pressures in critical sectors, such as food and energy, which are felt more by vulnerable groups. This price instability disrupts the financial planning of poor households and increases the risk of economic insecurity. In addition, high inflation also affects people's price expectations, creating a cycle of instability that is difficult to control without effective monetary policy intervention.

Inflation is one of the most important economic indicators, the rate of change is always kept stable, so as not to cause economic instability (Sari et al., 2023). The relationship between inflation and price dispersion indicates that a lower and more stable inflation target can help anchor people's inflation expectations, thereby reducing future price uncertainty. In accordance with the findings of (Fukuda & Soma, 2019). Setting a clear inflation target can reduce uncertainty, but its effectiveness depends largely on the government's ability to keep inflation

around that target.

This increase in inflation and price dispersion indicates that the purchasing power of the community, especially vulnerable groups, is highly vulnerable to price increases in basic necessities that can increase extreme poverty. This is in line with the argument of Daoet al. (2024) which emphasizes that increases in the price of basic necessities are felt more by vulnerable groups. On the other hand, research by Sheremirov (2020) mentioned that inflation is also related to an increase in price dispersion, which has an impact on reducing general welfare, especially in developing countries such as Indonesia.

In this analysis, it was found that increased price volatility in the basic needs sector also has the potential to disrupt social and economic stability. This is because unexpected price changes can trigger public discontent and lead to demands for more effective and fair pricing policies.

CONCLUSION

This study finds that fluctuations in the Rupiah exchange rate, Gross Domestic Product (GDP) growth, and inflation significantly affect extreme poverty rates in Indonesia over the period 2003-2023. A strengthening Rupiah exchange rate helps reduce extreme poverty by increasing people's purchasing power and attracting foreign investment. An increase in Gross Domestic Product (GDP) creates new jobs and increases household income, while high inflation worsens the condition of the poor by depressing their purchasing power. These findings suggest that economic policies should be more specific. Exchange rate stability needs to focus on strengthening the Rupiah through interest rate control and export diversification. Economic growth should be directed to sectors that can absorb the labor of the poor, such as MSMEs and agriculture. Inflation must be controlled with a firmer food price policy and well-targeted subsidies for the basic needs of the poor. However, this study has several limitations, including the use of secondary data covering the period 2003-2023, which may not capture other relevant factors, and the use of linear regression models that may not fully reflect the complexity of relationships between variables such as lag effects or interactions between variables. Therefore, future research could expand the analysis by using a panel data approach involving provinces in Indonesia to understand regional dynamics. In addition, the influence of other variables such as social policies, access to education, or income inequality on extreme poverty can be further explored.

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