The Role Of Monetary Policy In The Economic Crisis In Indonesia 2007-2009

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Abstract

Impacted by the global economic crisis in 2008, Indonesia grappled with economic slowdown, escalating prices, and depreciating currency values. In response, the government and Bank Indonesia enacted monetary policy measures, prominently reducing interest rates. The primary aim is to scrutinize how a judicious and adaptable monetary policy, coupled with fiscal strategies and other real-economy interventions, can alleviate adverse effects and expedite recovery from economic slumps and promote a more rapid recovery. This study, utilizing multiple linear regression, intricately examines the relationship between these variables, with a specific focus on the impact of monetary policy during Indonesia's economic downturn. Encouragingly, the results unveil Indonesia's economic resilience, illustrating a robust recovery by 2010. Statistical analyses underscore a substantial relationship between interest rates, inflation, and GDP. However, the study identifies potential challenges, noticing that interest rate reductions may trigger inflation and currency depreciation. This research contributes not only scientifically but also practically to economic development by emphasizing the importance of responsiveness, flexibility, and coordination of monetary policy in the face of economic crises. The findings emphasize the necessity of a well-calibrated monetary policy. Addressing the research gap, this article delves into the nuanced impact of monetary policy on Indonesia's 2008 economic recession, enriching our understanding of effective crisis management strategies. By navigating the complexities of economic dynamics, this research provides valuable insights for policymakers, emphasizing the importance of proactive and coordinated measures to mitigate the impact of economic downturns and foster sustainable recovery

Keywords: Global Economic Crisis, Monetary Policy, Interest Rate, GDP, Inflation, Exchange Rate

JEL Classification: A10, I20 , I32.

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Introduction

The global economic crisis that took place in 2008 was an event that greatly affected the world economy, including Indonesia. (Hertati, Widiyanti, Desfitrina, Syafarudin, & Safkaur, 2020). The crisis stems from the housing crisis in the United States, which caused the financial system to collapse and demand to drop worldwide. Declining economic growth, inflation, budget deficit, and weakening rupiah exchange rate are all problems experienced by Indonesia as a country integrated with international markets. . To overcome the crisis, the government and Bank Indonesia (BI) adopted various fiscal and monetary policies (Sugiharti, Esquivias, & Setyorani, 2020).

The actions carried out by a central bank to manage the money supply and interest rates, covering interest rates, foreign exchange rates, borrowing, and expectations, are recognized as monetary policy. (Papadamou, Siriopoulos, & Kyriazis, 2020). The existence of an economic crisis, which can disrupt economic stability and growth, is a challenge for central banks in carrying out monetary policy. Economic crises can originate from domestic or foreign sources, and can be financial crises, fiscal crises, exchange rate crises, or debt crises. (Ari, Chen, & Ratnovski, 2019). An economic crisis can result in a decrease in production, inflation, budget deficits, depreciation of the value of the currency, and a lack of confidence from investors. Bank Indonesia implemented several monetary policy measures, including reducing the benchmark interest rate (BI Rate) from 9.5% in October 2008 to 6.5% in July 2009. (Juhro & Njindan Iyke, 2019). Through increasing investment and consumption, this policy aims to boost economic growth. Thus, monetary policy can increase aggregate demand, investment, consumption and exports in Indonesia. Although these monetary policies can boost economic growth and reduce the risk of a financial crisis, they can also increase inflationary pressures and weaken the rupiah exchange rate. Hence, it is essential to assess the efficacy and results of this monetary strategy on the economic conditions of Indonesia. (Puspitasari, Sudiyatno, Hartoto, & WIDATI, 2021).
The research gap in the article on the impact of the economic crisis in Indonesia is the lack of specific mention of the impact of monetary policy on the 2008 economic recession in Indonesia, especially with the variables of inflation and interest rates on GDP . Thus, while this article discusses the impact of interest rates on GDP and inflation, it explicitly discusses the impact of monetary policy on the 2008 economic recession in Indonesia. This gap is significant as it does not address an important aspect of the relationship between monetary policy and economic performance in a particular economic event (Flatt & Jacobs, 2019). An agile and responsive monetary policy that is in harmony with fiscal policy and measures impacting the real sector can mitigate the adverse consequences of the economic downturn and expedite economic recovery (Amandha, 2023). This gap can be addressed by conducting a more focused study on the impact of monetary policy on the 2008 economic recession in Indonesia which will be addressed in this article. The goal of this research is to scrutinize the effects of monetary policy on the economic recession in Indonesia in 2008. Therefore, the objective of this investigation is to delve deeper into the function of monetary policy during the Indonesian economic crisis in 2007-2009. The analysis method used in this article is multiple linear regression, which is a statistical technique employed to elucidate the relationship between one dependent variable and two or more independent variables. This model is capable of illustrating the interplay between interest rates, national income, inflation, and economic output gaps, as well as demonstrating the effects of alterations in monetary policy on these variables. Anticipated outcomes of this study include scientific and practical contributions to the progression of economic science, particularly in the realm of monetary economics. Furthermore, it is envisaged to offer insights for policymakers in shaping monetary policy.

Literature Review

The global economic crisis of 2007-2009 affected Indonesia. The crisis reduced economic growth, foreign exchange reserves, the rupiah exchange rate, and inflation. To overcome the crisis, Bank Indonesia and the Indonesian government are collaborating to enact diverse monetary and fiscal stimulus measures (Sutarjo, Murti, & Saleh, 2021). A consequence of the global economic crisis was the decline in Indonesia's economic growth, falling from 6.1% in 2007 to 4.5% in 2009. This decline was predominantly associated with an 11.9% reduction in global demand in 2009. Moreover, there was a devaluation in the rupiah exchange rate against

the US dollar. At the close of 2007, the exchange rate was Rp 9,419 per US dollar, and by the conclusion of 2009, the rate had decreased to Rp 10,389 per US dollar. Escalated global economic uncertainty and the outward flow of foreign capital heightened the demand for US dollars, contributing to this impact. As a result, Indonesia witnessed a reduction in foreign exchange reserves, dropping from US $ 56.9 billion at the close of 2007 to US $ 66.1 billion by the conclusion of 2009. Bank Indonesia intervened to uphold the rupiah exchange rate, leading to a substantial reduction in inflation, declining from 6.59% in 2007 to 2.78% in 2009. This decline is attributed to a decrease in aggregate demand and a lowering of the prices of goods (Juhro, Sahminan, Wijoseno, Waluyo, & Bathaluddin, 2022).

Bank Indonesia and the Indonesian Government are collaborating to implement a variety of monetary and fiscal stimulus measures to address the consequences of the global economic crisis. (Sukaesih Kurniati & Suryanto, 2022). Bank Indonesia undertook several monetary policy actions, including reducing the policy interest rate (BI Rate) from 9.5% at the end of 2007 to 6.5% at the end of 2009. The aim of this reduction is to decrease lending rates, thereby stimulating credit demand in the face of global economic uncertainty. Additionally, monetary policy also encompasses lowering the reserve requirement from 10% at the end of 2007 to 5% at the end of 2009. This measure was adopted to enhance bank liquidity and ensure the availability of credit necessary to support national economic activity. Furthermore, Bank Indonesia increased its short-term liquidity facility (FLJP) from $25 trillion at the end of 2007 to $100 trillion at the end of 2009. The objective of this move is to uphold the stability of the banking sector by offering emergency loans to banks experiencing liquidity challenges. Moreover, Bank Indonesia augmented the quantity of government securities (SBN) integrated into its portfolio, rising from Rp 97.8 trillion at the conclusion of 2007 to Rp 216.4 trillion at the conclusion of 2009. This measure was taken to support government budget deficit financing and absorb excess liquidity in the money market, thereby fostering more stable economic conditions. Actively engaging in the foreign exchange market, Bank Indonesia observed an increase from US$ 8.6 billion in 2007 to US$ 15.1 billion in 2009. This initiative was implemented to bolster national economic growth amid global economic uncertainties and simultaneously stabilize the rupiah exchange rate, instilling confidence among investors (Casu, Di Pietro, & Trujillo-Ponce, 2019).

Central banks utilize monetary policy as a means to achieve objectives related to both price stability and economic growth. (Chugunov, Pasichnyi, Koroviy, Kaneva, & Nikitishin, 2021).This involves using a diverse array of tools, including interest rates, exchange rates, credit, and intervention in financial markets, to shape the macroeconomic environment. It's important to highlight, however, that monetary policy works in coordination with other policies like fiscal policy, real sector policy, and international policy, as it cannot operate efficiently in isolation. As a result, central banks face the challenge of facing an economic crisis that could disrupt economic growth and stability. Economic crises can have negative impacts such as falling output, inflation, budget deficits, currency depreciation, and investor distrust. To overcome the economic crisis, the central bank must be able to formulate and implement appropriate monetary policy, be responsive, flexible, and coordinate with other policies (Juhro, & Njindan Iyke, 2019).

Indonesia's experience during 2007-2009 serves as an illustration of the vital role played by monetary policy in maneuvering through an economic crisis. (Shapoval, 2022). At present, Indonesia is confronted with a multitude of intricate economic challenges, encompassing concerns like inflation, unemployment, and a deceleration in economic growth. This challenge is influenced by domestic and foreign factors, such as the surge in prices of goods such as oil and food in the world, the global financial crisis, and foreign capital outflows. To resolve this issue,

Bank Indonesia, as the central bank, implements various monetary policies in accordance with the conditions and difficulties faced. Monetary policy implemented by Bank Indonesia includes lowering the policy rate, lowering the minimum statutory reserve requirement, increasing short-term liquidity facilities, increasing the allocation of government securities, and intervening in the currency market. This monetary policy seeks to guarantee stability in prices, exchange rates, the financial system, and sustainable economic growth. (Palley, 2020). Bank Indonesia also cooperates with the government to offer fiscal support, encompassing augmenting government budgets, particularly in capital expenditure, social spending, and energy subsidies. (Sahela, Susanti, & Adjie, 2021).

Bank Indonesia has succeeded in mitigating the negative effects of the economic crisis and accelerating Indonesia's economic recovery by implementing a responsive, flexible monetary policy in coordination with other policies. (Amandha, 2023). Macroeconomic indicators like inflation, unemployment, and economic growth can serve as markers for this. (Adams, Adrian, Boyarchenko, & Giannone, 2021). In 2007, inflation rose to 6.59%, signifying the overall surge in prices for goods and services. Unemployment also stood at a high rate of 9.10%, illustrating the number of individuals seeking employment. However, the positive aspect is high economic growth, reaching 6.1%, the highest since the economic crisis of 1997-1998. Despite inflation surging to 11.06% in 2008 due to the global increase in oil and food prices, the unemployment rate decreased to 8.39% as a result of the monetary and fiscal stimuli implemented by the government and Bank Indonesia. Although economic growth remained positive, reaching 6.0%, the impact of the global economic crisis began to influence it by the end of the year. Inflation dropped to 2.78% in 2009 due to a decrease in total demand and a decline in the price of goods globally. However, the unemployment rate increased to 8.42% due to a slowdown in economic activity and foreign capital withdrawals. Economic growth, in comparison to some other countries also affected by the global economic crisis, such as China and India, slowed to 4.5%, reaching the lowest level since 2001. In this scenario, the Phillips curve pattern, illustrating the trade-off between inflation and unemployment, becomes apparent in the correlation between Indonesia's economic growth, inflation, and unemployment. (McLeay & Tenreyro, 2020). Based on the introduction and literature review, the hypothesis can be formulated as follows:

H1: Interest rates negatively affect Indonesia's GDP.

This hypothesis aims to evaluate how much influence Bank Indonesia's monetary policy has on Indonesia's macroeconomic performance. In Keynesian theory, it is explained that high interest will suppress people's consumption and investment, which can then cause output and national income to decrease.. Many empirical studies conducted in different countries support this theory. The study shows a negative relationship between interest rates and GDP. To test this hypothesis, researchers will use secondary data that includes annual data on real GDP growth and Indonesia's BI Rate from 2000 to 2020. This information can be retrieved from the official websites of Bank Indonesia and the Central Bureau of Statistics. The BI Rate will be employed as the independent variable, and real GDP growth will serve as the dependent variable. Subsequently, researchers will apply a simple linear regression analysis technique. This approach enables researchers to assess the magnitude of the regression coefficient, indicating the extent to which a change in the independent variable contributes to a change of one unit in the dependent variable (Palley, 2020).

The researchers will also incorporate various control variables that may influence the correlation between the BI Rate and real GDP growth, specifically inflation, exchange rates, and budget deficits. The assessment of the inflation component will involve the use of the consumer price

index (CPI), which mirrors fluctuations in the prices of goods and services consumed by the population. (Jany-Catrice, 2020). Concurrently, the examination of the exchange rate component will rely on the average exchange rate of the rupiah against the US dollar, providing insight into the purchasing power of the domestic currency relative to foreign currencies. The variable indicating the budget deficit is derived from the ratio of the budget deficit to GDP, revealing the extent to which government spending surpasses government revenue. (Suparjito, Sarungu, Soesilo, Samudro, & Hasanah, 2020). Information regarding this control variable can also be extracted from the official websites of Bank Indonesia and the Central Statistics Agency. Utilizing straightforward techniques in simple linear regression analysis and employing the previously mentioned secondary data, the researchers aim to evaluate this research hypothesis with a significant degree of accuracy and dependability. The examination of this hypothesis holds paramount importance, as it can provide valuable insights into the influence of Bank Indonesia's monetary policy on the economic growth of Indonesia, a vital measure of societal well-being. Furthermore, this hypothesis can aid relevant stakeholders, encompassing Bank Indonesia, the private sector, and the public, in making precise decisions in the midst of evolving economic conditions (Shrestha, 2020).

H2: Interest rates have a positive effect on inflation in Indonesia.

The second hypothesis in this study posits that interest rates positively influence the inflation rate in Indonesia. These findings are in accordance with Fisher's Theory, which states that nominal interest rates can be calculated by adding real interest rates to the predicted inflation rate. (Herrenbrueck, 2019). Put differently, if the real interest rate stays unchanged, an expected increase in the inflation rate will result in a rise in the nominal interest rate. This can be elucidated through the monetary transmission mechanism, which denotes the process whereby alterations in monetary policy impact economic activity and prices. One of the monetary transmission channels is the interest rate channel, signifying the influence of interest rate adjustments on aggregate demand through consumption and investment. (Kronick & Koeppl, 2022). If interest rates rise, then borrowing costs become more expensive, thus reducing the incentive to consume and invest. As a result, aggregate demand decreases, which has an impact on decreasing output and increasing unemployment. However, a decrease in aggregate demand can also create inflationary pressures, as aggregate supply cannot adjust quickly. (. In addition, rising interest rates can also increase inflation expectations, as people will anticipate future price increases. This hypothesis assumes that the inflationary effects of rising interest rates outweigh the effects of output and unemployment because high inflation expectations can lead to increases in production costs and wages Di Giovanni, Kalemli-Özcan, Silva, & Yildirim, 2022).

This hypothesis takes into account additional variables such as exchange rates, budget deficits, and GDP, which possess the capability to influence the relationship between interest rates and inflation. GDP measures the overall economic output of a country during a specific timeframe. (Angrist, Goldberg, & Jolliffe, 2021). The exchange rate represents a comparison of prices between two distinct currencies. A budget deficit arises when the government spends more money than it generates in a given period. These variables can impact the inflation rate through the mechanisms of aggregate demand and aggregate supply. Hence, it is crucial to integrate these variables into the regression model to manage potential spurious effects (Saraswati, Maski, Kaluge, & Sakti, 2020).

H3: Inflation negatively affects GDP in Indonesia.

This hypothesis has been formulated to examine the impact of inflation on the economic growth of Indonesia, specifically on its Gross Domestic Product (GDP). Inflation refers to the overall

rise in the prices of goods and services within an economy over a specified period, whereas Gross Domestic Product (GDP) signifies the total value of all final goods and services produced by a country within a defined timeframe. (Musarat, Alaloul, & Liew, 2021). The foundational principle of this hypothesis is grounded in the quantity theory of money, indicating that inflation occurs when the increase in the money supply exceeds real output growth. (Benetti & Cartelier, 2019) This implies that higher levels of inflation correspond to lower GDP. According to this theory, if the money supply expands more rapidly than real output, the demand for goods and services increases, leading to higher prices. Consequently, the purchasing power of money diminishes, subsequently reducing both consumption and investment integral components of GDP. (Nugroho, Amir, Maududy, & Marlina, 2021)

This hypothesis is consistent with various empirical studies that have identified an inverse correlation between inflation and GDP in diverse countries. For instance, research conducted by Khan and Senhadji (2001) argues that inflation has a detrimental and statistically significant impact on GDP growth in both developed and developing nations. To evaluate this hypothesis, the primary independent variable is inflation, calculated over a one-year period using the consumer price index (CPI). The CPI serves as an indicator measuring the average price change within a basket of goods and services consumed by households. One of the dependent variables is the growth of Gross Domestic Product (GDP), computed based on Indonesia's real GDP growth over a one-year period. The growth of real GDP represents the percentage change in GDP adjusted for inflation. (Balima, Kilama, & Tapsoba, 2020) This hypothesis can undergo testing through ordinary linear regression analysis methods, which are statistical techniques employed to elucidate the relationship between one dependent variable and one or more independent variables. This method is suitable for examining this hypothesis. Authoritative sources such as the Central Bureau of Statistics (BPS) and the World Bank can be used to obtain annual data related to Indonesia's CPI and real GDP growth spanning from 2000 to 2020. Moreover, this hypothesis takes into account control variables like interest rates, exchange rates, and budget deficits, all of which can influence the correlation between inflation and GDP. These control variables can also be assessed using data from the same sources. This research examines the impact of monetary policy on the 2008 economic recession in Indonesia. It aims to expedite economic recovery by aligning monetary policy with fiscal measures and the real sector. Using the IS-LM-Phillips curve model, the study analyzes the role of monetary policy during the 2007-2009 Indonesian economic crisis, providing insights for policymakers (Khan & Ssnhadji, 2001).

Research Methods

The methodology applied is quantitative research, because it applies data in the form of numerical numbers and statistical analysis to test research hypotheses. (Sürücü &; Maslakci. (2020). The population of this study is the condition of the Indonesian economy during the selected time period. The sample of this study consists of data on interest rates, inflation, and GDP of Indonesia from 2007 to 2009. Secondary information acquisition techniques come from relevant and credible sources such as the Central Bureau of Statistics, Bank Indonesia, and others. The data analysis method employs a statistical technique known as multiple linear regression, with a specific focus on investigating the effects of interest rates on GDP, the impact of interest rates on inflation, and the influence of inflation on GDP. The mathematical representation of multiple regression is as follows:

$$y = \beta_0 \ \ldots + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + + \beta_n x_n + \epsilon$$

Where:

y : variable dependen
β_0 : constant or intercept
$\beta_1, \beta_2, \beta_3 \ldots \beta_n$: regression coefficient or slope
x_1, x_2, x_3, x_n : variable independen
ϵ : Error

The hypothesis test employing multiple linear regression is a statistical analytical method employed to assess the relationship between a dependent variable and two or more independent variables. Its aim is to ascertain whether there is a significant correlation or influence among the variables considered and to quantify the degree of each variable's impact on the dependent variable. Conversely, the null hypothesis posits no association or contribution between the variables under investigation. On the other hand, the alternative hypothesis suggests a causal or contributory relationship between the variables being studied. The null hypothesis and the alternative hypothesis need to be contradictory and complementary to each other.

- H1: Interest rates negatively affect GDP
  - H0: Interest rates do not have a negative impact on Gross Domestic Product.$\beta_1 = 0$
  - Ha: Interest rates have a negative impact on Gross Domestic Product.$\beta_1 \neq 0$
- H2: Interest rates positively affect inflation
  - H0: There is no correlation between interest rates and changes in the inflation rate.$\beta_2 = 0$
  - Ha : Positive correlation between interest rates to changes in inflation rate$\beta_2 \neq 0$
- H3: Inflation negatively affects GDP
  - H0: Inflation has no effect on GDP$\beta_3 = 0$
  - Ha: Inflation negatively affects GDP$\beta_3 \neq 0$

Tabel 1. Variabel Description

Variable	Explanation	Data type	Source
GDP per capita	GDP per individual in a country reflecting the relative prosperity of the population.	US Dollar	macrotrends
Inflation	The rise in the overall cost of goods and services within an economy over time, resulting in a reduction of a currency's purchasing power.	Percent	macrotrends
Intrerest rate	The cost of borrowing or investment return, shaping financial decisions and pivotal for central banks in economic management.	Percent	Bank Indonesia

Results and Discussion

The performance of the Indonesian economy during 2007-2010 was remarkable. The table presented delineates the percentage values for Indonesia's GDP, inflation trends, and interest rates spanning from 2007 to 2010. GDP, representing the total value of goods and services produced by a country within a specific timeframe, acts as an indicator of economic activity and overall well-being. Inflation, characterized by a general increase in the prices of goods and services over time, serves as an indicator of the purchasing power of money. Interest rates, reflecting the cost of borrowing or the return on investments in a country during a given period, provide insights into monetary policy and the demand for money. Indonesia faced a worldwide crisis in 2008-2009 but successfully rebounded and achieved substantial growth in 2010. Various

elements, such as aggregate demand, aggregate supply, expectations, fiscal policy, monetary policy, and global conditions, exert an influence on Indonesia's Gross Domestic Product (GDP), inflation rate, and interest rates. The Government and Bank Indonesia strive to control inflation and maintain the right balance between economic growth and price stability by using appropriate fiscal and monetary policies.

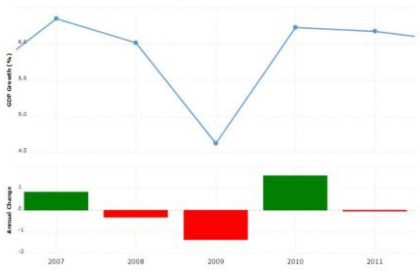

Figure 1. GDP per capita, Source :Macrotrends

Based on the data provided, there were fluctuations in the rate of economic growth in Indonesia between 2007 and 2010. In that year, 2007, the economic growth rate reached 6.35%, with an increase of 0.84% in comparison with the previous year. Nevertheless, in 2008, there was a downturn with an economic growth rate of 6.01%, experiencing a decline of 0.33% compared to the preceding year. This fluctuation persisted in 2009, with the economic growth rate dropping to 4.63%, reflecting a decrease of 1.38% compared to the previous year. Nevertheless, there was a noteworthy recovery in 2010, with the economic growth rate surging to 6.22%, marking an increase of 1.60% compared to the previous year. Variations in the economic growth rate can be attributed to various factors. One primary factor is the global economic environment. During the global financial crisis in 2008, numerous countries, including Indonesia, faced an economic slowdown. A decline in global demand for Indonesian export goods can lead to a reduction in the economic growth rate. Besides external factors, internal elements such as government policies, political stability, and domestic market conditions can also influence fluctuations in the economic growth rate. The economic growth rate can be influenced by the government's fiscal and monetary regulations, which have the potential to affect investment, consumption, and production levels in the country. Moreover, variations in the economic growth rate are additionally impacted by different factors, including shifts in commodity prices, inflation rates, and interest rates. An increase in commodity prices or inflation can alter people's purchasing power and influence overall economic activity. The fluctuations observed in Indonesia's economic growth dynamics between 2007 and 2010 resulted from a combination of external and internal factors. It is crucial for the government to oversee and regulate these factors to attain economic stability and ensure sustained growth. (Stern, 2019).

Figure 2. Inflation, Source : Macrotrends

From the given data, a clear trend in the inflation rate in Indonesia can be identified for the period 2007 to 2010. In 2007, the inflation rate stood at 6.41%, indicating a decline of 6.70% in comparison to the previous year. Subsequently, there was a substantial surge in 2008, registering an inflation rate of 10.23%, indicating an increase of 3.82% from the previous year. However, 2009 witnessed a sharp downturn, with the inflation rate plummeting to 4.39%, marking a considerable contraction of 5.84% compared to the prior year. The trend continued in 2010, with a further decrease as the inflation rate settled at 5.13%, showing a decline of 0.75% in comparison to the previous year. The decline in the inflation rate in 2009 and 2010 can be explained based on several factors. One of the key factors is the global economic slowdown that occurred due to the international financial shock of 2008. This crisis caused a depreciation of global demand for Indonesia's commodities and export products, so that inflationary pressure also eased. In addition, the Indonesian government has also taken effective solutive policy measures to overcome inflation, such as tight monetary policy and certain price controls. In addition to external factors and government policies, the decline in the inflation rate can also be caused by internal factors such as increased production and supply of domestic commodity business results and services. If the supply of commodities and services is sufficient to meet demand, inflationary pressure will be reduced. Overall, the decline in inflation rates in 2009 and 2010 occurred due to a combination of external factors and effective government policies in controlling inflation.

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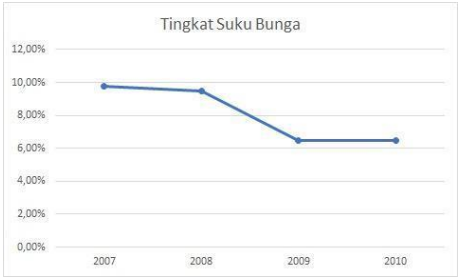

Figure 3. Interest Rate, Source: Bank Indonesia

During the period 2007-2010, Indonesia experienced significant changes in interest rates. In 2008, there was a worldwide financial crisis that occurred with the collapse of the Lehman Brothers economy in the American state. This crisis has far-reaching consequences in the global economy, including Indonesia. In the face of this crisis, in order to maintain economic stability, Bank Indonesia adopts various monetary policy instruments. In early 2008, the interest rate in Indonesia stood at 9.50%. Nevertheless, with the onset of the global financial crisis, Bank Indonesia faced the necessity of reducing interest rates to stimulate economic growth and alleviate the adverse effects of the crisis. Consequently, in 2009, the interest rate saw a decline to 6.50% in response to the global economic downturn. This reduction in interest rates was implemented with the objective of stimulating investment and consumption, as well as promoting economic growth amidst challenging circumstances. Additionally, Bank Indonesia undertook supplementary measures, including fortifying bank liquidity and upholding currency stability, to address the repercussions of the global economic crisis. In 2010, interest rates were maintained at 6.50% as a result of persisting apprehensions about the enduring consequences of the global crisis and endeavors to uphold economic stability. Amidst the global economic crisis in 2008, the reduction in interest rates implemented in Indonesia was one of the policy measures adopted to counteract the economic deceleration and alleviate the adverse effects of the crisis.

The objective was to invigorate economic growth and sustain financial stability in challenging circumstances.

Double linear regression test

Through the application of statistical analysis with multiple linear regression, the goal is to uncover the connection between interest rates and GDP, assess the influence of interest rates on the inflation rate, and scrutinize the consequences of inflation on GDP (Adaramola & Dada, 2020).

Table 2. The effect of interest rates on GDP

	Coefficients	Standard Error	t Stat	P-value
Intercept	0,039184848	0,016981525	2,307498747	0,147388893
Interest Rate	-0,208424242	0,219803702	-0,948228989	0,443098012

Table 1 displays the outcomes of multiple linear regression analysis performed to investigate the association between interest rates and GDP. The regression coefficient elucidates the connection between the independent variable (interest rate) and the dependent variable (GDP). Standard error indicates how much the regression coefficient varies from sample to sample. t Stat indicates the statistical value of the t-test technique to test the hypothetical assumption of zero that the regression coefficient is equal to zero. The P-value indicates the probability of getting the same or more extreme value of t Stat if the null hypothesis is true. After careful observation, it becomes evident that there exists an inverse correlation between interest rates and GDP; specifically, as interest rates rise, GDP tends to decrease, and conversely. This inference is drawn from the regression coefficient value for interest rates, which is -0.208424242. This implies that for each incremental unit increase in interest rates, there is a corresponding reduction in GDP by 0.208424242 units. However, this connection lacks statistical importance, implying there is inadequate evidence to suggest that interest rates impact GDP, assuming other variables remain constant. This is apparent from the P-value for the interest rate, which is 0.443098012, exceeding the alpha significance level of 0.05.

Table 3. The effect of interest rates on inflation.

	Coefficients	Standard Error	t State	P-value
Intercept	-0,068615152	0,0233454	-2,939129368	0,098887774
Interest Rate	1,757575758	0,302175765	5,816402115	0,028309882

The outcomes of an extensive multiple linear regression analysis, employed to explore the impact of interest rates on inflation, appear to be displayed in Table 2. The regression coefficient indicates the relationship between the independent variable (interest rate) and the dependent variable (inflation). Standard error indicates how much the regression coefficient varies from sample to sample. t Stat indicates the statistical value of the t test used to evaluate the hypothetical notion that the regression coefficient is equal to zero. The P-value indicates the probability of getting the same or more extreme value of t Stat if the null hypothesis is true. From Table 2, it is evident that the regression coefficient for the interest rate is presented as 1.757575758, implying that inflation will increase by 1.7575757588 units each time there is a one-unit increase in the interest rate. The P-value for the interest rate is 0.028309882, which falls below the 95% confidence level. This implies that there is substantial statistical evidence to reject the null hypothesis, signifying that the regression coefficient for interest rates is not zero. In essence, there is a notable influence of inflation attributed to interest rates. The positive

correlation between the inflation rate and interest rates implies that a rise in interest rates is associated with an increase in the inflation rate, and vice versa. This is apparent from the regression coefficient for the interest rate, which is 1.757575758, indicating that a one-unit increase in the interest rate leads to a simultaneous increase in inflation by 1.757575758 units. This relationship is statistically significant, as the P-value for the interest rate is 0.028309882, falling below the significance threshold of 0.05, assuming other variables remain constant.

Table 4. The effect of inflation on GDP.

	Coefficients	*Standard Error*	*t State*	*P-value*
Intercept	0,028152142	0,009443793	2,981020683	0,096514548
Inflation	-0,074306447	0,136547864	-0,544178762	0,640876932

Table 3 offers a comprehensive representation of multiple linear regression analysis crafted to improve our understanding of how inflation impacts gross domestic product (GDP). The regression coefficient elucidates the relationship between the independent variable (inflation) and the dependent variable (GDP). The standard error quantifies the degree to which the regression coefficient fluctuates across various samples. The t Stat indicates the statistical value of the t test used to assess the null hypothesis that the regression coefficient is zero. The P-value reflects the likelihood of obtaining the same or more extreme t Stat value assuming the null hypothesis is correct. In Table 3, the regression coefficient for inflation is -0.074306447, indicating that a one-unit increase in the inflation rate leads to a reduction in gross domestic product by 0.074306447 units. Nevertheless, the P-value for inflation is 0.640876932, surpassing the significance threshold of 0.05. This implies an absence of sufficient statistical evidence to reject the null hypothesis, implying that the regression coefficient for inflation is zero. In conclusion, there is no significant influence of inflation on GDP.

The correlation between inflation and GDP is adverse, meaning that an escalation in inflation corresponds to a decline in GDP, and conversely. It is illustrated from the value of the regression coefficient of the index to emphasize inflation which has a value of -0.074306447, which means there is a decrease in GDP of around 0.074306447 units when there is an increase in one unit of inflation. However, this relationship is not statistically significant, i.e. In addition, there is no strong enough statement that can convey an explanation that inflation affects GDP, assuming other variables remain constant. The significance level (P-value) shows that inflation is 0.640876932, which is above the established significance level of 0.05.

In the confines of this study, we examined how interest rates and inflation influenced Indonesia's total domestic production between 2007 and 2009, employing the methodologies of multiple linear regression analysis. Multiple linear regression methods can be elucidated as a statistical approach used to discern relationships among several dependent variables and two or more independent variables. In this study, interest rates and inflation operated as independent variables, while GDP was identified as the dependent variable. We also use regression coefficients, error standards, t Stats, and P-values as measuring tools in our analysis. Gross Domestic Product (GDP) is the aggregate value of assessments for products and services generated by the Indonesian economy within a defined timeframe, functioning as an indicator of economic activity and overall well-being. The inflation rate can be described as the average increase in the selling price of commodities and facilities in a country concerned, namely Indonesia in a certain period of time interval. This reflects the value of money borrowed or held within a nation during a specific time frame, serving as an indicator of monetary policy and the demand for money.

Indonesia's gross domestic product is developing in an optimistic trend. every year, with the only exception in 2009, which shows that the Indonesian economy is resilient enough to face the global economic downturn that lasted from 2008 to 2009. In the 2010 era, Indonesia's GDP reached a peak value, namely 3.09 percent, which shows that the Indonesian economy has successfully recovered from the impact of the crisis and continued its high growth trend.
Indonesia's inflation varies every year, with the most significant value for 2008, at 10.23 percent, and throughout 2009 recorded the largest impairment, at 4.39 percent. This indicates that Indonesia's economy is experiencing considerable fluctuations due to the global crisis and other factors, such as the increasing cost of world goods, domestic demand, and fiscal and monetary measures. Indonesia's inflation decreased significantly between 2008 and 2009, amounting to 5.84 percent, so that the government and Bank Indonesia managed to control inflation by using appropriate fiscal and monetary policies, such as raising benchmark interest rates, reducing fuel subsidies, and increasing public spending. Therefore, Indonesia's inflation increased again in 2010, to 5.13 percent, indicating that the Indonesian economy is recovering from the impact of the crisis and facing inflationary pressures from increasing domestic and external demand, as well as rising global commodity prices, such as oil and foodstuffs. Indonesia's interest rates also vary annually, with the highest value in 2008, at 9.50 percent, and the lowest value in 2009 and 2010, at 6.50 percent. This indicates that Bank Indonesia adjusts monetary policy in accordance with economic conditions and inflation. Indonesia's interest rate decreased significantly from 2008 to 2009 by 3 percent, thus providing monetary stimulus to stimulate economic growth and overcome the impact of the crisis. Furthermore, Indonesia's interest rate remained stable in 2010, at 6.50 percent, indicating that Bank Indonesia is trying to maintain a proper balance between economic growth and price stability.

Conclusion

A study called The Role of Monetary Policy in the Economic Crisis in Indonesia in 2007-2009, shows that the global economic crisis that occurred in 2008-2009 affected the Indonesian economy. However, it successfully bounced back through the implementation of suitable fiscal and monetary measures. It can be seen from the positive trend of Indonesia's GDP growth, except in 2009, which experienced a decline due to the crisis. Indonesia's GDP reached its highest value in 2010, which shows that Indonesia's economy is growing again at a high level. In addition, Indonesia's inflation experienced large fluctuations, with the highest value in 2008, caused by increased tariffs, international commodities, domestic demand, and fiscal and monetary measures. Indonesia's inflation declined significantly in 2009, indicating that the government and Bank Indonesia managed to control inflation. However, Indonesia's inflation picked up again in 2010, indicating that the Indonesian economy is facing inflationary pressures from domestic and external demand, as well as rising global commodity prices. Finally, Indonesia's interest rates adjust to economic conditions and inflation. Indonesia's interest rate declined significantly in 2009, indicating that Bank Indonesia provided monetary stimulus to boost economic growth. Indonesia's interest rate remained stable in 2010, indicating that Bank Indonesia maintains a proper balance between economic growth and price stability. That is why monetary strategy played a crucial role in overcoming Indonesia's economic downturn in 2007-2009.

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