Available online at http://www.iorajournal.org/index.php/ijgor/index

International Journal of Global Operations Research

e-ISSN: 2722-1016
p-ISSN: 2723-1739

Vol. 6, No. 1, pp. 40-45, 2025

Analysis of the Influence of Inflation on the Real Value of Deposits on Property Purchase Accessibility

Mukholifatun Azizah Zuhri[1*], Fidela Wanda Ammarilia[2]

[1,2]*Mathematics Undergraduate Study Program, Faculty of Mathematics and Natural Science, Padjadjaran University, Sumedang, Indonesia*

**Corresponding author email: fidela23001@mail.unpad.ac.id*

Abstract

Inflation is an economic phenomenon that has a significant impact on people's purchasing power. When the inflation rate increases, the real value of money saved in the form of savings, including deposits, tends to decrease. However, when inflation exceeds the deposit interest rate, the real value of these savings will be eroded, affecting customers' ability to invest, including in purchasing property. The increase in property prices that has continued to occur in recent years has added to the challenges for people in obtaining a house or other property. Uncontrolled inflation can affect the accessibility of property purchases, because property prices often rise faster than the growth rate of deposit savings. Therefore, this study was conducted which aims to analyze the relationship between inflation and deposit interest rates offered by banks and how inflation affects the real value of money saved in the form of deposit savings over a certain period of time. This study uses a quantitative method with descriptive analysis techniques and multiple linear regression for analysis purposes. The results of the study show that high inflation reduces people's purchasing power and reduces the real value of deposit savings, while deposit interest rates that are lower than the inflation rate can reduce people's ability to buy property. This study suggests that people consider inflation in planning long-term investments, especially in the form of property.

Keywords: Inflation, Real Value of Deposits, Property Purchases.

1. Introduction

Inflation is an economic phenomenon that occurs when the prices of goods and services increase generally and continuously over a period of time (Akinsola, 2017). In recent years, inflation in Indonesia has become a major concern in economic policy. According to several studies, inflation in Indonesia is often influenced by fluctuations in energy prices, food, and global economic instability (Farandy, 20120). The following is a graph of inflation that has occurred in Indonesia over the past 10 years.

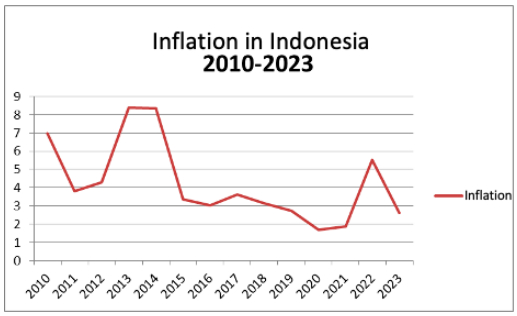

Figure 1: Inflation Graph in Indonesia 2010-2023

According to a graph taken from Bank Indonesia, annual inflation often ranges from 3-5%, although in certain periods, such as during the global economic crisis, this figure can increase drastically (Azis, 2001). The government usually responds to inflation with tighter fiscal and monetary policies, such as raising the benchmark interest rate to curb the rate of price increases. However, this action also has a long-term effect on the real value of savings, including deposit savings.

Deposits are a form of long-term savings offered by financial institutions, where customers deposit a certain amount of money for a certain period of time in return for a fixed interest rate. In conditions of high inflation, the real value of financial instruments such as deposits can decrease drastically, thus weakening people's ability to maintain their wealth and purchasing power (Sadoulet, 2006). Although the nominal balance of deposit savings can appear to increase, its purchasing power actually decreases. According to research conducted by Ghozali and Chariri (2016), deposits are often used by customers as a relatively safe investment tool because they have a low risk of volatility compared to other investment instruments, such as purchasing property. While property can experience price fluctuations influenced by external factors such as market conditions and government policies, deposits provide greater stability with a certain return over a certain period of time. This makes deposits an attractive option for customers looking for security and certainty of return without significant risk of decline in investment value.

Deposit savings and inflation have a strong relationship in influencing people's ability to buy property, especially in the current property market conditions. Currently, the property market in Indonesia is experiencing a significant increase in prices, driven by high demand, increasing construction costs, and limited land in several large cities. This condition makes property increasingly difficult to access for the public, especially for those who rely on conventional savings such as deposits as a source of funds to buy property. According to a report from Colliers International and Bank Indonesia, the increase in property prices, especially in urban areas, exceeds the growth of people's income, which narrows the opportunities for those who want to buy a house or apartment. At the same time, the relatively stable deposit interest rate is not comparable to the increase in property prices, so that deposits lose their competitiveness as an instrument to prepare funds for property purchases.

This study focuses on analyzing how inflation affects the real value of deposit savings and to what extent it impacts the accessibility of property purchases. The main question to be answered is: "How does inflation affect the real purchasing power of deposit savings and people's accessibility to property purchases?"

2. Literature review

Inflation is a condition in which the prices of goods and services generally increase over time (Anggadini et al., 2023). In recent years, Indonesia has experienced fluctuations in inflation rates that can affect people's daily lives. Changes in inflation rates can contribute significantly to fluctuations in people's purchasing power in Indonesia. When inflation increases, prices of goods and services tend to rise, reducing purchasing power, especially if price increases exceed income increases. During high inflation, purchasing power often falls drastically, especially in low-income groups, while controlled inflation has a more limited impact. (Rizani et al., 2023).

Mankiw (2020) explains that inflation reduces people's purchasing power by increasing the price of goods and services, which in turn reduces the real value of money. High inflation can also reduce the real returns from investments, including deposits, because nominal interest rates are not always able to keep up with inflation. In this case, deposit interest rates are important because they play a role in attracting people to save. However, if inflation is higher than the deposit interest rate, the real profits received by customers are limited. This impact worsens people's purchasing power, which ultimately affects their ability to buy property.

Deposit interest rates, as explained by Mankiw (2020), have a significant impact on people's savings and investment decisions. When deposit interest rates are low or inflation is high, people's purchasing power tends to decrease, making it more difficult for them to access property, the prices of which continue to increase. Thus, the relationship between inflation, deposit interest rates, and purchasing power becomes very relevant in analyzing people's ability to buy property.

3. Materials and Methodology

3.1. Materials

The data analyzed in this study include Indonesian inflation over the past 10 years, deposit interest rates offered by Bank BCA, and property prices in major cities in Indonesia, namely Jakarta. Inflation data was obtained from Bank Indonesia to identify its impact on people's purchasing power, while deposit interest rate data was collected from various financial institutions to analyze its impact on the real value of savings. On the other hand, property price data was used to see the trend of rising property prices that affect people's accessibility to buying property. The combination of these three data is expected to provide an overview of the challenges faced in saving and investing in property amid fluctuating inflation conditions.

3.2. Methods

This study uses a quantitative method, which is a systematic scientific method for studying phenomena and cause-and-effect relationships through the collection and analysis of measurable data (Rustamana et al., 2024). This study involves collecting and analyzing data to understand how inflation and deposit interest rates affect the real value of deposits and the accessibility of property purchases. Thus, the results of this method will identify the cause-and-effect relationships between the variables studied empirically.

As an approach, this study uses a case study method. Herdiansyah (2015) explains that research that is comprehensive, intense, detailed, in-depth, and more directed at examining contemporary problems or phenomena (limited in time) can use a case study approach. In this study, this approach is used to focus on BCA Bank deposit products and property accessibility in the area around Jakarta as research objects. This case study approach aims to explore in detail the deposit interest rate policy at BCA Bank and the trend of property price changes in the selected area. This case study provides a more in-depth analytical framework and allows research to consider specific contexts, such as the dynamics of the local property market and the characteristics of BCA Bank customers related to their investment choices.

In addition, this case study also helps explain how changes in inflation and deposit interest rates affect people's purchasing power in relation to property investment. By limiting the research to certain institutions and regions, the results obtained will provide more applicable and relevant insights for policy makers, property market players, and banking customers.

This research material will produce descriptive data, which aims to describe the relationship pattern between inflation, deposit interest rates, real deposit value, and accessibility of property purchases. This descriptive data will be presented in the form of statistics and graphic visualizations to provide a clearer understanding of the trends and phenomena studied.

For further analysis, deposit interest rate data from several banks will be used to calculate the final result using the future value formula. Then, with inflation data for the last 10 years, the average inflation will be calculated to determine the real value of the deposit. Furthermore, property price data will be calculated using the future value method based on the calculated inflation rate, so that a more accurate property price projection can be obtained in the future.

3.2.1. Formula

3.2.1.1. Real Value of Deposits

$$\boldsymbol{Rill}\, Value = \frac{\boldsymbol{FV}}{(\boldsymbol{1}+\boldsymbol{i})^{\boldsymbol{n}}}$$

Where:

FV = final value of deposit
i = average annual inflation (in decimal)
n = investment period (in years)

3.2.1.2. Future Value

$$FV = PV(1 + (r \times t))$$

Where,

FV = Final value
PV = Present value
r = Rate / annual interest rate
t = Time in years

3.2.2. Tabel

3.2.2.1. Inflation Data

Table 1: Annual Inflation Data (2014-2023)

Year	Inflation
2014	8.36%
2015	3.35%
2016	3.02%
2017	3.61%
2018	3.13%
2019	2.72%
2020	1.68%
2021	1.87%
2022	5.51%
2023	2.61%

3.2.2.2. BCA Bank Deposit Interest Rates

Table 2: BCA Bank Monthly Deposit Interest Rates

Bank Name	1 month (%)	3 months (%)	6 months (%)	12 Months (%)
BCA	3.25	3.25	2.25	2

3.2.2.3. Property Price Increase

Table 3 (a): Residential property price increases in the fourth quarter per year

Year	Property Price Percentage
2014	6.28%
2015	4.61%
2016	2.38%

2017	3.51%

Table 3 (b): Residential property price increases in the fourth quarter per year

Year	Property Price Percentage
2018	2.69%
2019	1.24%
2020	1.15%
2021	1.18%
2022	2.01%
2023	1.74%

4. Results and Discussion

4.1 Calculation of Deposit Savings

In this study, calculations were made to analyze the relationship between deposit interest rates, inflation, and people's ability to buy property. This study uses data from the period 2014 to 2023, assuming that someone saves regularly every year of IDR 50,000,000 with a deposit interest rate based on Table 3.2, which is 2% per year. To calculate the ability of savings to meet property prices in 2023, the future value formula is used which takes into account the inflation rate received each year.

$$Final\ value\ of\ deposit\ =\ savings\ \times \frac{(1+i)^n-1}{i}$$

where i is the deposit interest and n is the length of savings. so if the savings are IDR 50,000,000 with a deposit interest of 2% for 10 then the final value of the deposit is

$$Final\ value\ of\ deposit\ =\ 50{,}000{,}000\ \times \frac{(1+0.02)^{10}-1}{0.02}$$

$$Final\ value\ of\ deposit\ =\ 547{,}486{,}049$$

Then calculate the future value with an average inflation of 35.86%.

$$FV\ =\ 547{,}486{,}049\ (1+0.3586)^{10}$$

$$FV\ =\ 16{,}421{,}665{,}269{,}063$$

Then calculate the real value of the deposit

$$\boldsymbol{Rill}\ Value = \frac{16{,}421{,}665{,}269{,}063}{(\mathbf{1+0.02})^{\mathbf{10}}}$$

$$\boldsymbol{Rill}\ Value\ =\ \mathbf{13{,}471{,}485{,}184{,}595}$$

So, the money from the deposit savings for 10 years is

$$\boldsymbol{IDR\ 13{,}471{,}485{,}184{,}595}$$

4.2 House Price Calculation

In addition, property price changes from 2014 to 2023 are also taken into account, using annual property price increase data. Annual inflation during the same period is an important factor affecting people's purchasing power for property. Based on inflation data and property price increases, calculations are made to determine whether the savings generated from deposit interest are able to meet the desired property price in 2023. For example, the house price in 2014 was 100 million. From Table 3.3, the house price in the following year can be calculated, namely

$$House\ prices\ next\ year\ =\ previous\ house\ price\ \times (\mathbf{1} + price\ increases)$$

Thus, the house price in 2023 is IDR 766,200,958.

5. Conclusion

Based on the analysis that has been done, it can be concluded that saving in the form of a deposit with an interest rate of 2% per year for 10 years can provide quite significant results. However, to ensure that the savings can meet the price of property in the future, it is necessary to take into account inflation which will reduce the purchasing power of money, as well as the increase in property prices that continue to increase over time.

Using the future value formula to calculate the final value of the deposit, we see that by saving 70 million per year for 10 years with 2% interest per year, the total savings at the end of the period is 766 million. However, to find out whether this amount can buy a property worth 724 million in 2023, we must adjust for inflation during the period.

After calculating with the real value formula adjusted for the average inflation of 3.586%, the calculated real value of savings shows that although the total nominal savings increase, the purchasing power of money decreases due to inflation. By calculating the real value, we can see whether the deposit savings can meet the needs of purchasing increasingly expensive properties due to inflation and rising property prices.

The analysis results show that by considering the increase in property prices and inflation, savings can have enough real value to buy a house at the desired price after 10 years. This proves that saving in deposits, although not beating the inflation rate directly, can help keep the value of money relevant and purchasing power against property that continues to increase in price.

Thus, by saving regularly in deposits and considering both factors (deposit interest and inflation), it can be ensured that the savings owned in the long term can help to buy the desired property, even though there are economic fluctuations that affect the purchasing power of money.

Reference

Akinsola, F. A., & Odhiambo, N. M. (2017). Inflation and economic growth: A review of the international literature. *Comparative Economic Research. Central and Eastern Europe*, *20*(3), 41-56.

Azis, I., Azis, E. E., & Thorbecke, E. (2001). Modeling the socio-economic impact of the financial crisis: The case of Indonesia. *Project by IFPRI for the World Bank*.

Bank Indonesia (BI). (2024). Inflation target.

Farandy, A. R. (2020). Analyzing factors affecting Indonesian food price inflation. *Jurnal Ekonomi Dan Pembangunan*, *28*(1), 65-76.

Mankiw, N.G. (2020). Principles of economics (8th ed.). Cengage Learning.

Rizani, A., Norrahman, RA, Harsono, I., Yahya, AS, & Syifa, DM (2023). The Effect of Inflation on People's Purchasing Power in a Macroeconomic Review. *Journal of International Multidisciplinary Research, 1*.

Sadoulet, L. (2006). Savings and Deposit Services for the Poor. *Financial Services and Poverty Reduction in Latin America and the Caribbean*, 165.