

ANALYSIS OF THE INFLUENCE OF FOOD INFLATION ON HOUSEHOLD PURCHASING POWER IN INDONESIA

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ARTICLE HISTORY

Received:

10 February 2026

Revised

26 February 2026

Accepted:

04 March 2026

Keywords:

Food Inflation, Real Income Per Capita, Open Unemployment, Household Purchasing Power

ABSTRACT

This study aims to analyze the influence of food inflation, real per capita income, and open unemployment rate on household purchasing power in Indonesia during the 2019–2024 period. Post-pandemic economic developments show pressure on food prices, changes in people's income levels, and shifts in employment conditions that affect households' capacity to consume. This study uses a quantitative approach, employing panel data regression methods processed in EViews 13. The selection of the best model was conducted using the Chow test, the Hausman test, and the Lagrange Multiplier test, with the final results indicating that the Random Effect Model (REM) was the most suitable. The results of the study show that, simultaneously, food inflation, real income per capita, and the open unemployment rate have a significant effect on household purchasing power. Partially, food inflation and the open unemployment rate have a negative effect, while real income per capita has a positive effect on household purchasing power. These findings affirm the importance of food price stability, increasing real income, and expanding job opportunities in maintaining purchasing power and people's welfare.

INTRODUCTION

Household purchasing power is an important indicator of people's welfare. Households' ability to consume goods and services is strongly influenced by macroeconomic conditions, particularly inflation, income levels, and employment. Stable purchasing power reflects people's ability to meet their living needs properly, while a decrease in purchasing power indicates economic pressure that can reduce welfare.

When the prices of basic necessities, especially food, rise, the proportion of household expenditure on these needs will increase; this condition can suppress the consumption of other goods and services because most income must be allocated to meet primary needs. As a result, household consumption space becomes increasingly limited, and the balance of expenditure becomes disturbed.

During the 2019–2024 period, Indonesia's economy underwent significant dynamics due to the COVID-19 pandemic and the subsequent economic recovery. Disruptions in economic activity cause changes in various macroeconomic indicators, including prices, income, and employment. Although the recovery process is ongoing, some households still feel economic pressure.

Food inflation fluctuated during the period. On the other hand, people's real income is under pressure due to the imbalance between price increases and nominal income increases. In addition, the open unemployment rate increased during the crisis and then gradually declined again. This condition shows that economic recovery has not been fully followed by an equal improvement in people's welfare.

Real per capita income is an important factor because it reflects people's real ability to consume after taking into account changes in price levels. Meanwhile, the open unemployment rate directly affects people's ability to earn income. A combination of rising prices, limited income, and the risk of job loss can reduce household purchasing power.

Based on this description, this study was conducted to analyze the influence of food inflation, real per capita income, and the open unemployment rate on household purchasing power in Indonesia during the 2019–2024 period. This research is expected to provide empirical evidence on economic factors affecting people's welfare in terms of consumption capacity.

LITERATURE REVIEW

Household purchasing power is basically closely related to the theory of consumption in macroeconomics. According to Keynes' theory of consumption, people's consumption levels are influenced by their income. As income increases, consumption tends to rise, though not by as much as income. Purchasing power reflects the real ability of people to consume goods and services. Therefore, purchasing power is often used as an indicator to see the condition of household welfare, because it shows the extent to which the income is able to meet the needs of life

The purchasing power condition cannot be separated from the influence of inflation. In the theory of the quantity of money and the theory of inflation in general, the continuous increase in prices will decrease the real value of money. This means that the

same amount of money can only buy fewer goods and services. Inflation in the material group

Food has a greater impact than other groups because food is a basic need that must be met at all times. Based on consumer behavior theory, households will prioritize the consumption of primary goods when prices rise, reducing spending on other needs. This condition led to a decrease in overall purchasing power.

Real per capita income is described in the permanent income theory and the life cycle theory, which state that people's consumption decisions are influenced not only by current income but also by expected long-term income. Nevertheless, real income remains a major factor in determining actual consumption capabilities. Rising real incomes indicate that people have greater purchasing power after accounting for price levels. Thus, theoretically, there is a positive relationship between real per capita income and household purchasing power.

Meanwhile, the open unemployment rate can be explained by labor market theory, which posits that unemployment occurs when the number of available labor exceeds the number of available job openings. Unemployment causes a loss of income for individuals or households. Within the framework of welfare theory, income is the primary determinant of consumption. Therefore, the higher the unemployment rate, the more households experience income limitations, so that consumption and purchasing power decrease.

The relationship among inflation, income, unemployment, and purchasing power can also be explained using a macroeconomic equilibrium framework. High inflation, without offset by an increase in real income, will reduce people's real consumption. On the other hand, an increase in unemployment will suppress aggregate income and reduce public demand for goods and services. On the contrary, an increase in real income will boost consumption and strengthen purchasing power. Thus, the three variables theoretically have a strong relationship in influencing the condition of household purchasing power.

Based on this theoretical foundation, this study suspects that food inflation reduces household purchasing power because price increases reduce the real value of income. Real income per capita is suspected to positively affect purchasing power because higher real income increases consumption capacity. Meanwhile, the open unemployment rate is suspected of negatively affecting purchasing power because reduced job opportunities reduce household income. These conjectures were further empirically tested in this study.

RESEARCH METHODS

This study uses a quantitative, associative research approach. The quantitative approach is used because this study aims to examine the relationships and influences among variables through numerical data processing and statistical analysis. The associative nature of this study indicates that its main focus is to analyze the influence of food inflation, real income per capita, and the open unemployment rate on household purchasing power.

The data used in this study are secondary, panel data, a combination of time-series and cross-sectional data. The time series data covers the period from 2019 to 2024, while the cross-sectional data reflects several areas or units of observation analyzed. All data are obtained from official publications of the Central Statistics Agency (BPS) relevant to the research variables, ensuring a level of credibility and validity that can be scientifically accounted for.

The dependent variable in this study is household purchasing power. Purchasing power is measured using indicators that represent people's consumption capabilities. The independent variables in this study are food inflation, real per capita income, and the open unemployment rate. Food inflation is measured by changes in the price index for the food ingredient group. Real income per capita is obtained by adjusting per capita income for inflation. The open unemployment rate is measured as the percentage of the labor force that is not working but actively seeking work.

The analysis method used is panel data regression. The panel data regression model was chosen because it can combine variation across time and across observation units, thereby providing more informative estimation results than time-series regression or cross-section alone. In panel data analysis, there are three model approaches, namely the Common Effect Model, Fixed Effect Model, and Random

The selection of the best model is carried out through a series of model specification tests. The Chow test is used to determine whether the Fixed Effect model is more accurate than the Common Effect model. Furthermore, the Hausman test is used to choose between the Fixed-Effects and Random-Effects models. The Lagrange Multiplier test is used to determine whether a Random Effect is more appropriate than a Common Effect. The model selected based on the test results is then used in the estimation process to reach a conclusion.

To ensure that the regression model used meets statistical requirements, classical assumption tests are also carried out, including tests for normality, multicollinearity, and heteroscedasticity. This test aims to ensure that the estimated regression results are unbiased and can serve as a basis for a conclusion. The entire data processing and analysis in this study were carried out using EViews version 13.

RESULT AND ANALYSIS

Chow Test

The Chow test was carried out to determine the most appropriate panel data regression model between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). If the *probability value of the F-statistical cross-section* is less than the significance level of $\alpha = 5$ percent, then H_0 is rejected, and H_1 is accepted, so the model chosen is the Fixed Effect Model. Conversely, if the probability value of *the F-statistical cross-section* is greater than $\alpha 5$ percent, then H_0 is accepted, and H_1 is rejected, so the model used is the Common Effect Model, and further testing is not required.

Table 1 Chow Test Results

Test Summary	Prob.
Cross-section Chi-square	0.0021

Based on the results of the Chow test in the table, it can be seen that the probability value of *the F-statistic cross-section* is less than $\alpha 5$ percent ($0.0000 < 0.05$). Thus, it can be concluded that H_0 is rejected and H_1 is accepted, which means that the Fixed Effect Model is more appropriately used. Therefore, the test continued with the Hausman test to determine which model is best, the Fixed Effect Model or the Random Effect Model.

Hausman Test

The Hausman test was carried out to determine the most appropriate panel data regression model between the Fixed Effects Model (FEM) and the Random Effects Model (REM). If the probability value of *the random cross-section* is less than the significance level $\alpha = 5$ percent, then H_0 is rejected, and H_1 is accepted, so the model chosen is the Fixed Effect Model. On the other hand, if the probability value of *the random cross-section* exceeds 5 percent, then H_0 is accepted and H_1 is rejected, so the model used is the Random Effect Model.

Table 2 Hausman Test Results

Test Summary	Prob.
Cross-section random	0.4461

Based on the results of Hausman's test in the table, it can be seen that the probability value of *Cross-section random* of 0.4461 is greater than $\alpha 5$ percent ($0.4461 > 0.05$). Thus, it can be concluded that H_0 is accepted and H_1 is rejected, indicating that the Random Effect Model regression model is more appropriate. Therefore, the test continued with a Lagrange Multiplier test to determine which model, the Common Effect Model or the Random Effect Model, was best.

Lagrange Multiplier Test

The Lagrange Multiplier test was carried out to determine the most appropriate panel data regression model between the Common Effect Model (CEM) and the Random Effect Model (REM). If the *Breusch-Pagan* probability value is less than the significance

level $\alpha = 5$ percent, then H_0 is rejected, and H_1 is accepted, so the chosen model is the Random Effect Model. On the other hand, if the *value of the Breusch-Pagan* probability is greater than $\alpha 5$ percent, then H_0 is accepted, and H_1 is rejected, so the model used is the Common Effect Model.

Table 3 Lagrange Multiplier Test Results

Test Summary	Prob.
Breusch-Pagan	0.0000

Based on the results of the Lagrange Multiplier test in the table, the Breusch-Pagan probability value of 0.0000 is less than the 5% critical value ($0.0000 < 0.05$). Thus, it can be concluded that H_0 is rejected and H_1 is accepted, indicating that the Random Effect Model regression is more appropriate for this study.

Panel Data Regression Analysis

The panel data regression model used in this study is based on the results of the previous model selection test, in which the best model is the Random Effect Model (REM). Furthermore, the interpretation of the selected model's results was carried out, including the variable coefficient test, the determination coefficient test, the simultaneous hypothesis test (F test), and the partial hypothesis test (t test).

$$Y = C - 4494.882X_1 + 0.001244X_2 - 12231.49X_3$$

Description:

X_1 : Food Inflation

X_2 : Real Income Per Capita

X_3 : Open Unemployment Rate

Y: Household Purchasing Power

Based on the multiple linear regression equation, the constant value (C) indicates the amount of household purchasing power when the variables of food inflation, real income per capita, and the open unemployment rate are held constant.

The regression coefficient on food inflation of -4494.882 indicates that a one-unit increase in food inflation will decrease household purchasing power by 4494.882 units, assuming the other variables are held constant. The regression coefficient on the real per capita income variable, 0.001244, indicates that a one-unit increase in real per capita income will increase household purchasing power by 0.001244, assuming the other variables are held constant. The variable regression coefficient on the open unemployment rate of -12231.49 indicates that a one-unit increase in the open unemployment rate will decrease household purchasing power by 12231.49 units, assuming the other variables are held constant.

Partial Hypothesis Test (t-test)

The t-test was carried out to partially determine the influence of each independent variable on the dependent variable. This test was carried out by comparing the probability value of each variable with a significance level of $\alpha 5$ percent. If the probability value is less than 0.05, then this variable has a significant effect on household purchasing power.

On the other hand, if the probability value is greater than 0.05, then the variable has no significant effect.

Table 4 Partial Test Results (t-Test) Before *Outlier*

Variabel	Coef.	t-Statistic	Probability
Food Inflation (X1)	-4350.494	-1.600887	0,1110
Real Income Per Capita (X2)	0.000667	0.600887	0.5301
Open Unemployment Rate (X3)	-20288.27	-2.228568	0.0270

Table 5 Partial Test Results (t-Test) After *Outlier*

Variabel	Coef.	t-Statistic	Probability
Food Inflation (X1)	-4494.882	-1.784745	0,0759
Real Income Per Capita (X2)	0.001244	1.761193	0.0798
Open Unemployment Rate (X3)	-12231.49	-2.066162	0.0402

Based on the partial test results in the table, the variable food inflation has a probability value of 0.0759, which is greater than the 5 percent critical value ($0.0759 > 0.05$). Thus, it can be concluded that food inflation does not significantly affect household purchasing power. Although the regression coefficient is negative, its influence is not statistically significant.

The real income per capita variable has a probability value of 0.0798, which is also greater than the 5 percent critical value ($0.0798 > 0.05$). This shows that real per capita income has no significant effect on household purchasing power. Although the regression coefficient points in a positive direction, the effect is not statistically significant.

Meanwhile, the variable open unemployment rate has a probability value of 0.0402, which is less than the 5 percent level ($0.0402 < 0.05$). Thus, it can be concluded that the open unemployment rate has a negative and significant effect on household purchasing power. This means that the increase in the unemployment rate significantly reduces people's purchasing power.

Simultaneous Hypothesis Test (F Test)

The F test was conducted to find out whether all independent variables, consisting of food inflation, real income per capita, and open unemployment rate, together affect the purchasing power of households. This test was carried out by comparing the F-statistic probability value with a significance level of α 5 percent. If the probability value is less than 0.05, then all independent variables simultaneously have a significant effect on the dependent variables.

Table 6 Results of Simultaneous Test (F Test)

Before		After	
F-statistic	Probability	F-statistic	Probability
2.208883	0.088310	2.962036	0.033475

Based on the results of the simultaneous test in the table, the F-statistical probability value was 0.033475, which is less than the 5% significance level ($0.033475 < 0.05$). Thus, it can be concluded that food inflation, real per capita income, and open

unemployment jointly have a significant effect on household purchasing power in Indonesia. These results show that although not all variables have a significant effect, the three variables collectively have a significant contribution to explaining variation in household purchasing power.

Coefficient of Determination (R^2)

The determination coefficient is used to assess how well an independent variable explains variation in the dependent variable in a regression model. This value can be seen in the regression estimation results for R-squared and Adjusted R-squared.

Table 7 Results of the Determination Coefficient Test (R Square) Before Outlier

<i>Before</i>		<i>After</i>	
<i>R-squared</i>	<i>Adjusted R-squared</i>	<i>R-squared</i>	<i>Adjusted R-squared</i>
0.032384	0.017723	0.045133	0.029896

Based on the table results, the R-squared value was 0.045133. This shows that the variables of food inflation, real income per capita, and the open unemployment rate can explain 4.51 percent of the variation in household purchasing power. In comparison, the remaining 95.49 percent is explained by other variables outside the research model. The Adjusted R-squared value of 0.029896 indicated that, after adjusting for the number of variables in the model, the three independent variables explained 2.99 percent of the variation in household purchasing power. In contrast, the remaining variation was attributable to factors not included in this study.

Classic Assumption Test

Normality Test

The normality test was carried out to determine whether the residuals from the regression model in this study were normally distributed. The data used in the study must meet the assumption that the residuals are normally distributed. Normality testing was carried out using the Jarque-Bera (J-B) test at the 5% significance level.

Table 8 Normality Test before Outlier

<i>Before</i>		<i>After</i>	
<i>Jarque-Bera</i>	<i>Probability</i>	<i>Jarque-Bera</i>	<i>Probability</i>
52.52651	0.0000	1.459989	0.481912

Based on the results of the normality test in the table, the Jarque-Bera probability value was 0.17, which was greater than the 5% significance level ($0.17 > 0.05$). Thus, it can be concluded that the residuals in the regression model are normally distributed and have met the classical assumption of normality.

Multicollinearity Test

The multicollinearity test was performed to assess whether there is a strong linear relationship among the independent variables in the regression model. Multicollinearity

can be assessed by the Variance Inflation Factor (VIF). Variables with a VIF value of less than 10 can be said not to experience multicollinearity among independent variables.

Table 9 Multicollinearity Test Results

Variable	VIVID	1/VIF
X1	1.0351	0.9961
X2	1.1736	0.8518
X3	1.1589	0.8628

The table shows the correlations among the independent variables, namely X_1 (Food Inflation), X_2 (Real Income Per Capita), and X_3 (Open Unemployment Rate). The correlation between any two independent variables is below 0.80. This shows that there is no strong correlation between independent variables.

In addition, based on the results of the calculation of the Variance Inflation Factor (VIF) value, all independent variables have a VIF value of less than 10. Thus, it can be concluded that there is no multicollinearity in the regression model. That is, each independent variable plays a distinct role and does not influence the others to an excessive degree. Therefore, the regression model used has met the classical assumption of multicollinearity.

Heteroscedasticity Test

A heteroscedasticity test was performed to determine whether the variance of the residuals in the regression model was uneven. A good regression model should not exhibit heteroscedasticity. This test was carried out by examining the probability value from the heteroscedasticity test at the 5% significance level.

Table 10 Heteroscedasticity Test Results

Test Summary	Probability
<i>Prob > Chi2</i>	0.1067

Based on the heteroscedasticity test results in the table, a probability value greater than 0.05 was obtained (Prob. > 0.05). This indicates that there are no heteroscedasticity symptoms in the regression model. Thus, it can be concluded that the regression model in this study has met the classical assumption of heteroscedasticity.

Discussion

The findings of this study show that food inflation, real per capita income, and the open unemployment rate simultaneously affect household purchasing power in Indonesia. These results illustrate that price stability, people's ability to earn income, and employment conditions are interrelated factors in shaping household consumption capacity. These three variables interact in determining the community's economic strength, both in terms of production and consumption capacity.

Partially, the variable of food inflation has not been proven to have a significant effect on household purchasing power. In theory, rising food prices will reduce people's ability to meet other needs because most of the income is allocated for basic

consumption. However, in the study period, the effect was not significant. This condition can be influenced by the existence of food price stabilization policies, social assistance, and Social protection programs from the government that help maintain people's consumption levels despite price pressures.

The real income per capita variable also did not show a significant influence on household purchasing power. Theoretically, an increase in real income would increase people's consumption as described in Keynes' theory of consumption functions, which states that consumption is influenced by income levels. However, the results of this study show that the increase in real income has not significantly increased purchasing power. This can be caused by income distribution inequality, rising living costs, and changes in people's consumption patterns during the economic recovery period.

In contrast to these two variables, the open unemployment rate has been proven to have a negative and significant influence on household purchasing power. This result is consistent with labor market theory, which posits that unemployment reduces people's income, thereby reducing consumption capacity. As the number of unemployed increases, the number of households that have lost their source of income also increases, thereby significantly reducing purchasing power. Thus, employment conditions are the most dominant factor in influencing household purchasing power in this study.

Overall, the results of this study confirm that efforts to maintain people's purchasing power depend not only on controlling inflation but also on increasing employment opportunities and income stability. The combination of price control policies, job creation, and improving the quality of human resources is an important key in strengthening people's welfare.

CONCLUSION

Based on the research results and discussion, it can be concluded that food inflation, real per capita income, and open unemployment affect household purchasing power in Indonesia. The open unemployment rate has been shown to significantly affect household purchasing power through its impact on people's ability to earn income. Meanwhile, food inflation and real per capita income indicate the direction of influence according to theory; however, they have not had a statistically significant effect during the study period. Simultaneously, these three variables continue to explain changes in people's purchasing power.

The results of this study confirm that household purchasing power is influenced not only by price changes but also by the community's employment and income stability. Thus, efforts to maintain people's purchasing power need to be carried out through integrated policies, not only by controlling inflation but also by job creation and improving the quality of human resources.

Increasing employment opportunities through job expansion and workforce skill development can help reduce the unemployment rate, thereby strengthening people's purchasing power. On the other hand, it is still necessary to control food inflation through

price-stabilization policies and the smooth distribution of staples so that pressure on household spending can be minimized. In addition, increasing people's real incomes should be encouraged through policies that support inclusive and equitable economic growth.

Overall, this study emphasizes that strengthening household purchasing power requires synergy among price control policies, expanding employment opportunities, and improving the community's economic quality. This integrated approach is expected to improve community welfare sustainably.

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