The Effect of Income and Inflation on Household Consumption Expenditures in Indonesia (A Case Study of 34 Provinces)

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Abstract.

This study aims to analyze the effect of income and inflation on household consumption expenditure in 34 provinces in Indonesia. The main issue raised is the fluctuation in household consumption, which does not always move in line with changes in income and inflation, even though these two variables are generally considered to play an important role in determining the level of community welfare. This study uses secondary data obtained from the Central Statistics Agency (BPS) for the period 2016–2024. The method applied is a quantitative approach with panel data regression analysis to see the relationship between variables more comprehensively. The best model was determined through a series of model selection tests, namely the Chow, Hausman, and Lagrange Multiplier tests. Based on the results of these three tests, the Common Effect model was selected as the most appropriate model to describe the relationship between income, inflation, and household consumption. The analysis results show that income and inflation have no significant effect, either partially or simultaneously, on household consumption expenditure. In addition, the low coefficient of determination indicates that most of the variation in consumption is influenced by factors other than those included in this research model. These findings indicate the need for economic policies that focus more on increasing purchasing power and controlling prices in order to maintain the stability of household consumption in Indonesia.

Keywords: *Panel data; inflation; income and household consumption expenditure.*

I. INTRODUCTION

As a developing country, Indonesia continues to strive for economic stability and equitable growth as indicators of successful national development. Economic stability plays an important role in supporting the improvement of people's welfare. Economic instability in a country can have broad implications for various sectors, especially for people's purchasing power and consumption patterns [1]. The Indonesian government has formulated various development policies aimed at improving the welfare and quality of life of the community. The success of these policies can be reflected, among other things, in the increase in household income and consumption in line with national economic growth.Several previous studies have shown that income and inflation are two main variables that affect household consumption expenditure. [2] found that income has a significant effect on household consumption behavior. This finding is reinforced by [3] who stated that an increase in income can drive consumption positively and significantly. However, different results were presented by [4] who concluded that income does not have a significant effect on household consumption levels. Apart from income, inflation is also a factor that is often associated with household consumption expenditure. [5] found that inflation has a positive effect on household consumption, while [6] emphasized that inflation has a significant effect on consumption behavior. However, [7] reported different results, where inflation actually had a negative impact on household consumption expenditure. Several foreign studies also show that during periods of rising inflation, household consumption tends to decline due to weakening purchasing power, while in conditions of high inflation expectations, some people actually accelerate consumption [8].

The differences in results from previous studies indicate that the relationship between income, inflation, and household consumption is not entirely consistent. Some studies find a positive and significant effect, while others show no significant effect. This inconsistency indicates an empirical gap between consumption economics theory and socioeconomic reality in the field. In addition, most previous studies are still limited to certain regions or time periods, so they do not describe household consumption conditions nationally.Based on this, this study aims to update existing studies by using panel data from 34 provinces in

Indonesia during the 2016–2024 period. This approach is expected to provide a more comprehensive analysis of the effects of income and inflation on household consumption expenditure. Theoretically, this study is expected to contribute to the development of economic science, particularly in relation to household consumption behavior in developing countries. Practically, the results of this study are expected to be taken into consideration by the government in formulating economic policies that focus on increasing people's purchasing power and maintaining the stability of household consumption amid the dynamics of the national economy.

II. METHODS

Basic Research Framework

This study uses a quantitative model covering research areas in Indonesia.The data used is time series data from 2016-2024 using Eviews software. This study uses secondary data that is macro in nature and sourced from the Central Statistics Agency. The dependent variable in this study is household consumption expenditure, while the independent variables are income and inflation. This study uses a quantitative model covering 34 provinces in Indonesia.The data used is secondary data obtained from the Central Statistics Agency. The type of data in this study is panel data, which is a combination of time series and cross-sectional data from 2016 to 2024 with a total sample of 340. Basedon the theoretical explanation and empirical findings above, a conceptual framework can be developed which shows that income and inflation have a positive effect on household consumption expenditure.

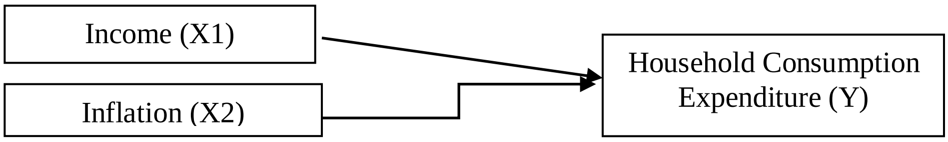

Fig 1. Conceptual framework

Conceptual Framework

Based on theoretical and empirical studies, income and inflation are assumed to influence household consumption expenditure. Income reflects households' economic capacity, while inflation affects purchasing power and consumption behavior.

Operational Definition of Variables

Income.

Income represents compensation received by households from economic activities. Higher income generally increases consumption capacity [8,9,].

Inflation.

Inflation is measured using the annual inflation rate based on the Consumer Price Index (CPI). Inflation reflects changes in the general price level and affects purchasing power [10]. Data are obtained from BPS and Bank Indonesia.

Household Consumption Expenditure.

Household consumption expenditure refers to total household spending on goods and services to meet daily needs [11]. The proxy used is the average household consumption expenditure per capita by province from BPS.

Hypotheses

H1: Income affects household consumption expenditure.

H2: Inflation affects household consumption expenditure.

Theoretical Review

Household Consumption Expenditure

Household consumption expenditure represents total spending on goods and services for daily needs [12]. Consumption plays a central role in economic activity and reflects welfare levels. It includes expenditures on durable goods, non-durable goods, and services [13]. Consumption patterns may vary due to seasonal, cultural, and socioeconomic factors [14]. Income levels strongly influence consumption, as higher income generally leads to higher consumption and improved welfare [15,16].

Consumption Theory

According to Keynesian theory, consumption is primarily determined by disposable income, where income increases raise consumption but not proportionally because part of the income is saved [17]. Modern consumption theory emphasizes expectations of future income. The permanent income hypothesis suggests that households smooth consumption over time by considering long-term income expectations [18].

Income

Income is compensation received by individuals or households for economic activities [19]. It is essential for meeting basic needs and improving welfare [20]. Differences in income influence consumption patterns, as higher income enables greater and more diversified consumption [21].

Inflation

Inflation refers to a sustained increase in the general price level of goods and services [22]. Inflation affects purchasing power, economic stability, and household consumption behavior [23]. Inflation may arise from demand pressures or cost-push factors such as increases in production costs [24,25]. Types of inflation include demand-pull, cost-push, expected inflation, and hyperinflation [26,27].

Relationship between Income, Inflation, and Household Consumption

Income is a key determinant of household consumption [2,3], although some studies report insignificant effects [4]. Inflation also affects consumption, either positively or negatively, depending on economic conditions [5,6,7] These mixed results indicate that the relationship between income, inflation, and consumption is complex and context-dependent.

III. RESULT AND DISCUSSION

Table 1. Specification Test (Chow Test)

Effects Test	Statistic	d.f.	Prob.
Cross-section F	1.327668	(32,234)	0.1218
Cross-section Chi-square	44.879108	32	0.0649

Source: BPS, Eviews 13 Output Results (processed)

Based on the Chow Test results in Table 1, the Cross-section Chi-square probability value is 0.0649, which is greater than the significance level of 0.05. This indicates that the null hypothesis (H_0) is accepted, so there is no significant difference between the Common Effect Model (CEM) and the Fixed Effect Model (FEM). Thus, the CEM model is more appropriate to use in the initial stage of panel data regression analysis. Furthermore, to determine the most efficient model between CEM and REM, the Lagrange Multiplier (LM) test was conducted as the next stage of testing [28].

Table 2. Hausman Test Results

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	2.458466	2	0.2925

Source: BPS, Eviews 13 Output Results (processed)

Based on the Hausman Test results shown in Table 2, a probability value of 0.2925 was obtained, which is greater than the significance level of 0.05. This result indicates that the null hypothesis (H_0) is accepted, so there is no significant difference between the Fixed Effect Model (FEM) and the Random Effect Model (REM). Thus, the most appropriate model to use in this study is the Random Effect Model (REM), because this model is considered more efficient in explaining the variation in the relationship between income, inflation, and household consumption expenditure in 34 provinces in Indonesia during the 2016–2024 period.

Test Hypothesis	Statistik LM	Probabilitas
Cross-section	1.103269	0.2935
Time	125.1316	0.0000***
Both	126.2348	0.0000***

Table 3. Lagrange Multiplier Test Results

Source: BPS, Eviews 13 Output Results (processed)

Based on the Lagrange Multiplier Test (Breusch–Pagan) results presented in Table 3, the cross-section probability value is 0.2935, the time value is 0.0000, and both values are 0.0000. Because the probability value for both is less than the 5% significance level (0.0000 < 0.05), the null hypothesis (H_0) is rejected and the alternative hypothesis (H_1) is accepted. Thus, the Random Effect Model (REM) is considered more appropriate than the Common Effect Model (CEM) in this study. These results are in line with the findings of [28] which show that the random effects model is more efficient for analyzing panel data with heterogeneous characteristics between provinces and over time. Hypothesis testing in this study was conducted through the F test (simultaneous) and t test (partial) based on the results of panel data regression estimation with the Random Effect Model. The F test was used to examine the combined effect of income and inflation on household consumption expenditure. The F test results are presented in Table 4 below.

Table 4. F Test (Simultaneous)

Statistics	Value
F-statistic	0.192208
Prob(F-stat)	0.825249

Source: BPS, Eviews 13 Output Results (processed)

Based on the simultaneous test results (F-test) shown in Table 4, the F-statistic value obtained is 0.192208 with a probability of 0.825249, which is greater than the significance level of 0.05. This result indicates that the null hypothesis (H_0) is accepted and the alternative hypothesis (H_a) is rejected. Thus, it can be concluded that simultaneously, income and inflation variables do not have a significant effect on household consumption expenditure in 34 provinces in Indonesia during the 2016–2024 period. This shows that changes in income and inflation together cannot explain the variation in household consumption between provinces. This finding is in line with the research by [28,29] which indicates that household consumption behavior is also influenced by factors other than income and inflation.

Furthermore, a t-test (partial) was used to analyze the effect of each independent variable on the dependent variable. The t-test results are shown in Table 5 below.

Table 5. Partial Hypothesis Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	2701888.	1250797.	2.160133	0.0317
X1	5.624974	11.70241	0.480668	0.6311
X2	-134957.9	343377.6	-0.393031	0.6946

Source: BPS, Eviews 13 Output Results (processed)

The partial test results show that the income variable has a probability value of 0.6311, which is greater than the significance level of 0.05, indicating that income does not have a significant effect on household consumption expenditure. This condition shows that an increase in income is not always followed by an increase in consumption, as some people may allocate additional income to savings or investments. This finding is in line with [9,29,30]. Meanwhile, the inflation variable has a probability value of 0.6946, which is also greater than 0.05, so it does not have a significant effect on household consumption expenditure. Inflation fluctuations during the study period did not directly change people's consumption patterns due to adjustments in consumption behavior and price stabilization policy interventions. These results are consistent with the studies by [31,32].

The analysis of the coefficient of determination is shown in Table 6 below.

Table 6. Coefficient of Determination Test (R2)

Statistics	Value	Other Statistics	Value
R-squared	0.001443	Mean dependent variable	2719477.
Adjusted R-squared	-0.006065	S.D. dependent variable	9753844.

Source: BPS, Eviews 13 Output Results (processed)

The R-squared value of 0.001443 indicates that the model is only able to explain 0.14 percent of the variation in household consumption expenditure in 34 provinces in Indonesia, while the remaining 99.86 percent is explained by factors other than income and inflation. This indicates that there are more dominant factors in determining household consumption, such as family size, prices of basic necessities, education level, financial access, macroeconomic conditions, fiscal policy, and social assistance. Further research is recommended to include these variables in order to produce a more comprehensive model.Based on the overall test results, income was found to have no significant effect on household consumption expenditure. These results are not in line with the initial hypothesis, which stated that there is a positive relationship between income and consumption. In the context of economic behavior, household consumption decisions are influenced by various other factors, such as preferences, income uncertainty, and demographic structure. International studies such as [33,34,35] found that factors such as wealth, education, and economic uncertainty also significantly affect household consumption.Inflation was also found to have no significant effect on household consumption, indicating that people engage in various adjustment mechanisms such as product substitution or changes in spending priorities. These findings are reinforced by research [36,37] which explain that moderate inflation does not always suppress consumption if there are income compensation and effective price stabilization policies.

IV. CONCLUSION

This study aims to analyze the effect of income and inflation on household consumption expenditure in 34 provinces in Indonesia during the period 2016–2024. Based on the results of panel data regression estimation using the Random Effect Model, this study found that neither income nor inflation had a significant effect on household consumption expenditure. These findings indicate that changes in household consumption during the study period were not directly determined by fluctuations in income and inflation, but were more influenced by other factors outside the scope of this study.These results indicate that the consumption behavior of Indonesians is influenced by other variables such as family size, prices of basic necessities, education level, access to finance, economic stability, and government policies that maintain purchasing power. Thus, broader economic and social factors need to be considered in understanding household consumption patterns in Indonesia.This study has limitations in the number of variables used, so it is not yet able to explain household consumption variations more comprehensively. Therefore, further research is recommended to include additional variables and expand the scope of analysis in order to produce more in-depth and representative conclusions.

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