

Original Article

Uncovering the Macroeconomic Factors Driving Household Consumption in Indonesia: A Short-Term and Long-Term Analysis

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Abstract:

This study aims to analyze the influence of gross domestic product (GDP), imports, population size, exchange rate, and manufacturing added value on household consumption in Indonesia. The data used covers the period 1980 to 2023, with macroeconomic variables obtained from the World Development Indicators. The analysis model applied is the dynamic Error Correction Model (ECM). The results show that both in the long and short term, GDP, imports, exchange rates, and manufacturing value added significantly affect household consumption in Indonesia. Meanwhile, the size of the population does not have a significant influence on household consumption in the short term. Based on these findings, it is recommended to policymakers to strengthen the manufacturing sector and manage exchange rate policies to make them more stable, to encourage sustainable household consumption. In addition, increasing trade policies that support exports and imports can help increase people's purchasing power. Increased investment in the manufacturing sector is also expected to result in more inclusive economic growth and increase household consumption. This research makes a significant contribution to understanding the dynamics of macroeconomic factors that affect household consumption in developing countries such as Indonesia. These findings can serve as a reference for further research into the influence of economic sectors on social welfare. In addition, the results of this study provide valuable insights for policymakers in formulating more holistic and sustainable economic development strategies.

Keywords: Consumption, GDP, Manufacturing Value Ad

Introduction

Household consumption is one of the main components in a country's economy. As one of the driving factors of the economy, household consumption affects the level of demand for goods and services, which in turn can drive economic growth, create jobs, and improve people's welfare ([Mankiw, 2013](#)). In Indonesia, households are the



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main consumers in the economy, and household consumption is often considered the main driver in the domestic economy. Therefore, understanding the factors that affect household consumption is essential for designing effective and sustainable economic policies.

Much research has been done on household consumption in Indonesia ([Rahim, et al., 2018](#); [Sugiarto & Wibowo, 2020](#); [Munjayanah & Prasetyo, 2024](#)), but the factors that influence consumption are often complex and depend on various macroeconomic variables that interact with each other. Some of the factors that can affect household consumption are Gross Domestic Product (GDP), imports, exchange rates, population, and manufacturing value-added. Each of these variables can affect people's purchasing power and household consumption patterns directly or indirectly.

GDP or Gross Domestic Product is the main measure of a country's economic output. An increase in GDP is usually followed by an increase in per capita income, which in turn can increase household consumption ([Diacon & Maha, 2015](#); [Koyuncu & Ünal, 2020](#); [PĂUNICĂ, et al., 2019](#)). This is because increasing GDP often creates new job opportunities, increases income, and expands people's access to goods and services. Conversely, a decline in GDP could lead to a contraction in economic activity, which would reduce household consumption as people's purchasing power decreases.

Meanwhile, imports also play an important role in determining household consumption patterns ([Khan, et al., 2022](#); [Akermi, et al., 2023](#); and [Al-Malki, et al., 2024](#)). Imports affect the prices of goods available in the domestic market. Increased imports can reduce the prices of certain consumer goods, allowing households to buy more goods. However, high imports can depress domestic industries, reduce employment, and ultimately negatively impact household consumption, especially if there is a decrease in people's purchasing power due to job or income loss.

Exchange rates are another macroeconomic variable that can affect household consumption. Exchange rate fluctuations can affect the price of imported goods, which in turn can affect people's consumption patterns ([Habanabakize, 2021](#); [Okwu, et al., 2020](#)). An increase in the exchange rate can increase the price of imported goods, which can reduce people's purchasing power for these goods. Conversely, exchange rate depreciation can increase the purchasing power of imported goods at lower prices, but it can decrease the purchasing power of domestic goods due to the increase in the price of domestically produced goods.

Population is also a factor that cannot be ignored in analysing household consumption ([Mata, et al., 2012](#); [Schneider, et al., 2011](#)). A larger population will increase the total demand in the economy, both for basic consumer goods and for more luxurious consumer goods. However, per capita consumption does not always follow the pattern of population growth. Factors such as income levels, wealth distribution, and consumer preferences also affect how household consumption functions in the economy.

On the other hand, manufacturing value added (MVA) can affect household consumption because the manufacturing sector is one of the sectors that plays the most role in creating jobs and income ([Anyanwu & Kponnou, 2017](#); [Olamade, 2021](#)). The rapidly growing manufacturing sector will increase people's purchasing power, because this sector provides wide job opportunities, both in the direct industrial sector and in other supporting sectors. Therefore, the growth of the manufacturing sector can contribute directly to the increase in household consumption.

In the Indonesian context, several studies have shown that household consumption is influenced by several macroeconomic variables that interact with each other. However, the biggest challenge in this analysis is to identify the short-term and long-term relationships between these variables. For this reason, the right method is needed to handle this dynamic relationship. One of the approaches used to address this dynamic problem is the Error Correction Model (ECM), which allows us to separate the short-term and long-term effects of macroeconomic variables on household consumption.

The ECM model also allows us to assess how the economic system returns to equilibrium after an imbalance occurs in the short term. In this study, the Error Correction Term (ECT) played a key role in explaining the speed of correction of the imbalance that occurred (Gujarati, 2021). In other words, ECT provides an overview of how quickly the economic system can adapt to changes in macroeconomic variables, such as GDP, imports, exchange rates, and others.

Based on the results obtained in this analysis, it was found that variables such as GDP, imports, exchange rates, and manufacturing added value have a significant influence on household consumption both in the long and short term. In contrast, the population does not show a significant influence on household consumption in the short term, although this variable can play an important role in the long term. One of the interesting findings of this study is that the high value of ECT shows that the Indonesian economic system can quickly return to equilibrium after an imbalance between these variables.

Through these outcomes, economic policies that drive GDP growth, strengthen the manufacturing sector, and maintain exchange rate stability can increase overall household consumption. Meanwhile, policies related to imports should be carefully considered, given their impact on people's purchasing power and the domestic industrial sector. In addition, it is important to remember that economic policies that focus on improving the quality of human resources and equitable distribution of income will also play an important role in supporting sustainable household consumption. By understanding the factors that affect household consumption and the dynamic relationship between macroeconomic variables, governments can design more effective and sustainable policies in promoting inclusive and welfare-oriented economic growth.

Research Methodology

This study aims to analyse the influence of macroeconomic variables on household consumption in Indonesia, considering the long-term and short-term relationships between these variables. For this reason, this study uses an Error Correction Model (ECM) model that can separate the short-term and long-term influences of each macroeconomic variable used in the model. This method also makes it possible to test the existence and speed of correction of imbalances in the economic system.

The model used in this study is the Error Correction Model (ECM) which can be explained by the following equation:

ECM Regression Equation:

$$\Delta \text{LOG}(\text{CONS})_t = \beta_0 + \sum_{i=1}^n \beta_1 \Delta \text{LOG}(\text{GDP})_t + \sum_{i=1}^n \beta_2 \Delta \text{LOG}(\text{IMPOR})_t + \sum_{i=1}^n \beta_3 \Delta \text{LOG}(\text{POP})_t + \sum_{i=1}^n \beta_4 \Delta \text{LOG}(\text{ER})_t + \sum_{i=1}^n \beta_5 \Delta \text{LOG}(\text{MVA})_t + \gamma \text{ECT}_{t-1} + \varepsilon_t$$

Where:

Δ	is the first difference operator that indicates a variable change in each period.
$\text{LOG}(\text{CONS})_t$	is household consumption at the time of t
$\text{LOG}(\text{GDP})_t$	is GDP at t
$\text{LOG}(\text{IMPORT})_t$	is the import value at the time of t.
$\text{LOG}(\text{POP})_t$	is the sum of the population at the time of t
$\text{LOG}(\text{ER})_t$	is the exchange rate at t time
$\text{LOG}(\text{MVA})_t$	is the added value of manufacturing at the time of t
γ	is the Error Correction Term (ECT) coefficient that describes the speed at which the system corrects towards long-term equilibrium
ECT_{t-1}	is the Error Correction Term value of the previous one-period lag, which indicates a deviation from the long-term equilibrium

et of the previous period
is an error term that is assumed to be normally distributed with zero mean and constant variance

In this study, the data used is annual secondary data for the period 1989-2023 which includes information on household consumption (NLCONS), GDP, imports, population, exchange rate, and manufacturing value added obtained from World Development Indicators and other related data sources. The analysis method used is the Error Correction Model (ECM) which can separate short-term and long-term analysis from the relationship between macroeconomic variables and household consumption ([Basuki & Prawoto, 2019](#)).

1. Data Preparation Stage: The data used in this study will go through several stages of processing, such as stationarity tests to ensure that the data is in the right condition for estimation. Data that is not stationary will undergo a differentiating transformation.
2. ECM Model Estimation Stage: Once the data is confirmed stationary, the ECM model will be estimated to analyze the short-term and long-term relationships between household consumption and relevant macroeconomic variables. This estimation process uses statistical software such as EViews.
3. Model Feasibility Test: After the model is estimated, a classical assumption test is performed to ensure that the model meets the classical linear regression assumption. The tests carried out included the heteroscedasticity test, autocorrelation test, normality test, and multicollinearity test.

Results of Analysis

Unit root testing is performed to find out whether the time series data you are using is stationary or not ([Arltová & Fedorová, 2016](#); [Perron, 1990](#); [Herranz, 2017](#)). This is important because regressions involving non-stationary data can produce misleading results. The following is an interpretation for the results given:

Table 1: Stationary Test

Series: CONS, GDP, IMPOR, ER, MVA, POP					
Sample: 1980 2023	Level		First Difference		Obs
Method	Statistic	Prob.**	Statistic	Prob.**	
Levin, Lin & Chu t*	-1.7199	0.0427	-10.9687	0.0000	256
Im, Pesaran and Shin W-stat	2.13256	0.9835	-11.6707	0.0000	256
ADF - Fisher Chi-square	3.30127	0.993	129.956	0.0000	256
PP - Fisher Chi-square	2.22192	0.999	103.503	0.0000	258
** Probabilities for Fisher tests are computed using an asymptotic Chi-square distribution. All other tests assume asymptotic normality.					

Source: Data processed 2025

The ADF-Fisher test is a test for root units based on a combination of Augmented Dickey-Fuller (ADF) tests for each data series. At the level, the probability value is 0.993, which indicates that at the level, the data is not stationary. However, after the first differentiation, the probability value is 0.0000, which indicates stationarity. Just like the ADF-Fisher test, the PP-Fisher test tests the stationarity of data based on the Phillips-Perron test for each data series. At the level, the test results show a very high probability (0.999), which indicates that the data at the level is not stationary. However, after the first divergence, the probability drops to 0.0000, indicating that the data becomes stationary after being differentiated. Overall, the results of all the tests show that the data at the (original series) level is not stationary because it has a unit

root. However, after the first differentiation, the data becomes stationary (all probabilities on the first differentencing are very significant with a value of 0.0000).

Table 2. Long-term

Dependent Variable: LOG(CONS)				
Sample: 1989 2023				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOG(GDP)	0.9063	0.1140	7.9531	0.0000***
LOG(IMPOR)	-0.1346	0.0468	-2.8748	0.0075***
LOG(POP)	-0.8317	0.2454	-3.3890	0.0020***
LOG(ER)	0.0491	0.0237	2.0734	0.0471**
LOG(MVA)	0.2710	0.1196	2.2656	0.0311**
C	9.4586	2.8983	3.2635	0.0028***
Heteroskedasticity Test: White		Autocorrelation Test Dep. Var Resid		
Obs*R-squared	19.879	F-statistic	2.2853	
Prob.	0.0694	Prob	0.1306	
Jarque-Bera	5.0176	R-squared	0.9872	
Prob.	0.0814	F-statistic	446.0317	
Source: Data processed 2025				

Here is an interpretation Table 2 of the results of the long-term regression and the classical assumption test ([Hansen, 2017](#)) provided:

The regression model used has dependent variables LOG(CONS) (logarithm of household consumption) and independent variables consisting of LOG(GDP), LOG(IMPORT), LOG(POP), LOG(ER), and LOG(MVA). Here is the interpretation of each coefficient:

1. LOG(GDP) = 0.9063: This coefficient indicates that if GDP (Gross Domestic Product) increases by 1%, then household consumption (LOG(CONS)) will increase by 0.9063%, assuming the other variables remain constant. This result is very significant with a t-statistic = 7.9531 and p-value = 0.0000 which is well below the significance level of 0.05 (or 1%), indicating that GDP has a very significant influence on household consumption.
2. LOG(IMPORT) = -0.1346: This coefficient shows that if imports increased by 1%, household consumption would decrease by 0.1346%, assuming other variables remained constant. t-statistic = -2.8748 and p-value = 0.0075 indicate that the influence of imports on household consumption is statistically significant at a significance level of 1% (because p-value < 0.01).
3. LOG(POP) = -0.8317: This coefficient indicates that if the number of populations increases by 1%, household consumption will decrease by 0.8317%, assuming the other variables remain constant. The results of t-statistic = -3.3890 and p-value = 0.0020 show that the effect of population size on household consumption is significant at a significance level of 1%.
4. LOG(ER) = 0.0491: This coefficient indicates that if the exchange rate (ER) increases by 1%, household consumption will increase by 0.0491%, assuming the other variables remain constant. t-statistic = 2.0734 and p-value = 0.0471 indicate that the effect of the exchange rate on household consumption is significant at the level of 5% (because the p-value < 0.05).
5. LOG(MVA) = 0.2710: This coefficient shows that if manufacturing value added (MVA) increases by 1%, household consumption will increase by 0.2710%, assuming the other variables remain constant. t-statistic = 2.2656 and p-value = 0.0311 show that the effect of manufacturing added value on household consumption is significant at the level of 5%.

6. Constant (C) = 9.4586: The value of this constant indicates the level of household consumption when all independent variables (GDP, Imports, Population, Exchange Rate, and MVA) are zero. t-statistic = 3.2635 and p-value = 0.0028 indicate that this constant is statistically significant at a significance level of 1%.

Overall, the model is significant with a very high R-squared ([Chicco, et al., 2021](#)), suggesting that the variables included in the model are very good at explaining household consumption. And based on the results of the classical assumption test, this model does not show the presence of serious problems such as heteroscedasticity, autocorrelation or residual abnormalities, which means it meets the basic assumptions for linear regression.

Table 3. Cointegration Test

Null Hypothesis: ECT has a unit root		
Lag Length: 0 (Automatic - based on SIC, maxlag=9)	t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic	-5.408228	0.0001
Test critical values: 1% level	-3.646342	
5% level	-2.954021	
10% level	-2.615817	
*MacKinnon (1996) one-sided p-values.		

Source: Data processed 2025

The ADF ([Paparoditis & Politis, 2018](#)) test statistic value is -5.408228, which is smaller (more negative) than the critical value at the 1%, 5%, or 10% level. When compared to the critical values at the level of 1% (-3.646342), 5% (-2.954021), or 10% (-2.615817), a more negative ADF test statistic value suggests that we reject the zero hypothesis that ECT ([Escrignano & Arranz, 2000](#)) has a root unit. The p-value is 0.0001, which is much smaller than the standard significance level (e.g. 0.01 or 0.05). This shows that the results of the ADF test are very significant, and thus we can reject the zero hypothesis that ECT has a root unit (non-stationary data). Since the statistical value of the ADF test (-5.408228) is smaller (more negative) than the critical value at all levels of significance (1%, 5%, and 10%), as well as the very small p-value (0.0001), we can conclude that ECT has no root unit and is thus stationary. The model used in ECM analysis has qualified stationarity on ECT, which means that it can be proceeded to the next step, such as long-term analysis or dynamic analysis, without root unit issues that could undermine the validity of the results ([Granger, 2004](#)).

Table 4: ECM Model Regression

Dependent Variable: D(LOG(CONS))				
Sample: 1989 2023				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LOG(GDP))	0.753611	0.240623	3.131921	0.0041
D(LOG(IMPOR))	-0.208228	0.040325	-5.163696	0.0000
D(LOG(POP))	-0.590289	3.786831	-0.155879	0.8773
D(LOG(ER))	0.063932	0.028025	2.281213	0.0306
D(LOG(MVA))	0.522227	0.267705	1.950753	0.0615
ECT (-1)	-0.730626	0.174732	-4.181395	0.0003
C	-0.008696	0.047731	-0.182178	0.8568
R-squared	0.865048	Autocorrelation Test Dep. Var Resid		
F-statistic	28.84518	F-statistic	4.544023	
Prob	0.00000	Prob	0.001644	

Source: Data processed 2025

This model on Table 4 provides a strong insight into the influence of macroeconomic variables on household consumption in Indonesia. However, there are autocorrelation issues that need to be addressed, as this can affect the reliability of the estimation results. A high F-statistic value and a small p-value (0.001644) indicate that there is a significant autocorrelation in the residual model. For Autocorrelation improvement, the first difference transformation method is used.

Table 5: ECM Model Regression Improvements

Dependent Variable: D(NLCONS)				
Sample: 1989 2023				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(NLGDP)	0.709699	0.213938	3.317313	0.0026
D(NLIMPOR)	-0.230122	0.031363	-7.337397	0.0000
D(NLPOP)	0.069564	4.373682	0.015905	0.9874
D(NLER)	0.067597	0.022676	2.980934	0.0060
D(NLMVA)	0.561717	0.235924	2.380926	0.0246
ECT(-1)	-0.961828	0.144353	-6.663041	0.0000
C	-0.010880	0.035738	-0.304441	0.7631
Heteroskedasticity Test: Harvey		Autocorrelation Test Dep. Var Resid		
Obs*R-squared	6.959524	F-statistic	0.871807	
Prob.	0.3246	Prob	0.552622	
R-squared	0.918382	F-statistic	50.63498	
Source: Data processed 2025				

Regression results Table 5 for the ECM (Error Correction Model) model which estimates changes in NLCONS (Household Consumption) based on changes in other macroeconomic variables such as GDP, Imports, Population, Exchange Rate, and Manufacturing.

Regression Results:

1. D(NLGDP) (Change in GDP Log) = 0.709699: Every 1% change in GDP will increase household consumption (D(NLCONS)) by 0.7097%, assuming the other variables remain constant. t-statistic = 3.317313 and p-value = 0.0026 indicate that the influence of GDP on household consumption is very significant at the level of 1% (p-value < 0.01).
2. D(NLIMPOR) (Change in Import Log) = -0.230122: Any 1% change in Imports will decrease household consumption by 0.2301%, assuming the other variables remain constant. t-statistic = -7.337397 and p-value = 0.0000 indicate that Imports have a very significant negative influence on household consumption.
3. D(NLPOP) (Change in Population Log) = 0.069564: Every 1% change in Population will increase household consumption by 0.0696%. t-statistic = 0.015905 and p-value = 0.9874 indicate that Population has no significant influence on household consumption in this model (p-value > 0.05).
4. D(NLER) (Change in Exchange Rate Log) = 0.067597: Any 1% change in the Exchange Rate will increase household consumption by 0.0676%, assuming the other variables remain constant. t-statistic = 2.980934 and p-value = 0.0060 indicate that the Exchange Rate has a significant influence at the 1% level (p-value < 0.01).
5. D(NLMVA) (Manufacturing Value Added Log Change) = 0.561717: Any 1% change in Manufacturing Value Added will increase household consumption by 0.5617%,

assuming the other variables remain constant. t-statistic = 2.380926 and p-value = 0.0246 indicate that Manufacturing has a significant influence at the rate of 5% (p-value < 0.05).

6. Error Correction Term (ECT (-1)) = -0.961828: A negative and very significant ECT value (t-statistic = -6.663041, p-value = 0.0000) indicates that in the event of an imbalance between the long-term and short-term variables, the system will return to equilibrium within one period, with a correction rate of 96.18%.
7. This very high rate of correction indicates that the imbalance in household consumption will return to equilibrium in a very short period, which is very efficient.
8. Constant (C) = -0.010880: This constant value indicates the rate of change in household consumption when all other variables are zero. A very high p-value (0.7631) indicates that this constant is not significant in influencing changes in household consumption.

This ECM model shows a significant short-term relationship between macroeconomic variables such as GDP, Imports, Exchange Rates, and Manufacturing on household consumption. The population had no significant influence in this model, while ECT showed that the system had a very high rate of correction (96.18%) to return to long-term equilibrium. Classical assumption tests show that this model meets the assumptions of residual homogeneity and independence (no heteroscedasticity or autocorrelation), as well as that the model is significant and can explain most variations in household consumption.

Analysis of the Relationship between GDP and Household Consumption (CONS)

The estimation results showed that the coefficient of D(LOG(GDP)) was positive and significant at the probability level of 0.0026, with a t-statistic of 3.3173. This means that any 1% increase in GDP will lead to an increase in household consumption of 0.7097% in the short term. These results show that household consumption in Indonesia is quite responsive to changes in GDP, reflecting a positive relationship between national income and household spending. This significant result can be explained by macroeconomic theory which states that an increase in GDP—which is often associated with an increase in people's incomes—will increase household purchasing power and consumption. In the Indonesian context, the increase in GDP is usually associated with economic expansion that encourages employment, increases people's incomes, and improves welfare, which is then reflected in increased household consumption.

In the long term, the relationship between GDP and household consumption can be analysed by looking at the influence of LOG(GDP) in the long-term model. From the ECM regression results, the LOG(GDP) coefficient was found to be 0.9063, which means that in the long run, a 1% increase in GDP will lead to an increase in household consumption of 0.9063%. This coefficient is significant with a t-statistic of 7.9531 and a very low probability value (0.0000), indicating that the long-term relationship between GDP and household consumption in Indonesia is very strong and significant. An increase in GDP in the long term usually reflects sustained economic growth. As the economy grows, people's incomes also increase, and this increases their purchasing power for the consumption of goods and services. In addition, household consumption is also influenced by other factors related to economic growth, such as price stability, job availability, and improved infrastructure, which ultimately increases household consumption in the long run.

These results are also in line with Keynesian consumption theory ([Mankiw & Taylor, 2020](#); [Todaro & Smith, 2009](#)), which states that household consumption is positively related to national income. When GDP increases, there is usually an increase in employment, people's incomes, and economic stability that ultimately drives household consumption. In Indonesia, sustainable GDP growth is often accompanied

by economic policies that support domestic consumption, so that the impact on household consumption is more pronounced in the long term. Overall, the results of this study show that GDP has a significant positive influence on household consumption in Indonesia, both in the short and long term ([Anghelache, 2011](#)). The effect is greater in the long run, reflecting a strong link between economic growth and increased household purchasing power. Policies that focus on strengthening the domestic economy, improving infrastructure, and equitable welfare can strengthen the positive impact of GDP on household consumption, support sustainable economic growth, and improve the quality of life of the Indonesian people.

Analysis of the Relationship between Imports (IMPORTS) and Household Consumption

The estimation results showed that the coefficient of $D(\text{LOG}(\text{IMPORT}))$ was negative and significant, with a coefficient value of -0.2301 and a significant t-statistic of -7.3374 at a probability level of 0.0000. This means that any 1% increase in imports will lead to a 0.2301% decrease in household consumption in the short term. These results indicate that in the short term, an increase in imports can have a negative effect on household consumption in Indonesia. Increased imports often lead to a decrease in demand for domestic products, as consumers turn to imported goods that are often cheaper or of higher quality. This can lower the consumption of domestic goods and services, which ultimately affects household consumption. When consumers shift some of their spending to buy imported goods, funds that should otherwise be spent on domestic consumption may be diverted, which in turn can lead to a decline in overall household consumption.

In the long term, the relationship between Imports (IMPORTS) and household consumption (CONS) can be analysed by looking at the coefficients of the $\text{LOG}(\text{IMPORT})$ variable in the long-term model. The regression results showed that the $\text{LOG}(\text{IMPORT})$ coefficient was negative, with a coefficient value of -0.1346, and significant at the probability level of 0.0075 with a t-statistic of -2.8748. This means that in the long run, a 1% increase in imports will lead to a 0.1346% decrease in household consumption. These results show that in the long run, the negative impact of imports on household consumption is relatively small, but still significant. In the long run, if imports are excessive, the domestic sector will find it difficult to compete with foreign goods. Dependence on imports can hinder the development of domestic industries and create structural imbalances in the economy. This can reduce domestic production and household consumption in the long run. Too many imported goods can lead to a decline in domestic production, which ultimately lowers household income in related sectors. This can reduce household purchasing power and consumption in the long term.

This study shows that imports have a negative and significant relationship with household consumption in Indonesia, both in the short and long term. In the short term, an increase in imports could lead to a decline in household consumption due to the shift of consumption to imported products ([Khan, 2022](#)). In the long term, this negative impact is related to dependence on imported goods which can hinder the growth of the domestic sector and people's purchasing power. Therefore, economic policies that support domestic production, prudent import management, and increased competitiveness of domestic industries are essential to optimize household consumption in Indonesia.

Analysis of the Relationship between Population Density (POP) and Household Consumption

Based on the results of the Error Correction Model (ECM) estimate in this study, the coefficient for $D(\text{LOG}(\text{POP}))$ which describes the short-term relationship between population and household consumption is not significant. The t-statistical value for $D(\text{LOG}(\text{POP}))$ is -0.1559 with a probability of 0.8773, which indicates that in the short

term, the number of people does not have a significant influence on household consumption. In the short term, although an increase in the number of consumers in the market could increase the number of consumers in the market, its direct effect on household consumption does not appear significant. Changes in the population take time to be reflected in changes in household consumption. For example, although the population is increasing, it does not directly translate into an increase in consumption because other factors, such as income distribution and social policies, also affect consumption. Household consumption is influenced by many factors besides the number of populations, such as income, prices of goods, and future expectations. In the short term, although the population is increasing, changes in household consumption patterns may not be directly reflected in per capita consumption or total consumption, due to per capita income or changes in more dominant consumption habits.

On the other hand, in the long run, the relationship between population (POP) and household consumption (CONS) shows a more significant influence. Based on the results of the long-term model, the LOG(POP) coefficient is negative and significant, with a coefficient value of -0.8317, and a significant t-statistic of -3.3890 at a probability level of 0.0020. These results show that in the long run, the increase in the number of people in Indonesia decreases household consumption. Any 1% increase in the population will lead to a decrease in household consumption by 0.8317%. This may sound counterintuitive, since in general we assume that more population will lead to more consumption. However, these results can be explained through the following mechanisms: In the long run, an increase in population size can lead to a wider spread of consumption among more individuals, so consumption per individual or per capita can decrease. Although the total amount of household consumption increases, the amount of consumption per individual can decrease if the increase in population is not offset by economic growth or a comparable increase in productivity. When the population increases rapidly, especially in the absence of significant improvements in infrastructure or other sectors of the economy, a decrease in efficiency in consumption can occur. Population growth without adequate growth in income and quality of life can hamper people's purchasing power, thereby reducing household consumption. In the long run, demographic factors such as age patterns or population quality affect household consumption more. If most of the population is of less productive age, then in total, household consumption could decline because older or younger age groups tend to have lower levels of consumption.

In this study, it was found that the number of people (POPs) has an insignificant relationship in the short term with household consumption but has a negative and significant influence in the long term ([Schneider, et al., 2011](#)). An increase in population in the long term can decrease household consumption due to a decrease in per capita consumption, an imbalance in the provision of resources, and a decrease in purchasing power due to a population that grows faster than income. Therefore, policies that support inclusive economic growth, infrastructure improvement, and wise population management are essential to optimize household consumption in Indonesia.

Analysis of the Relationship between Exchange Rate (ER) and Household Consumption

Based on the results of the Error Correction Model (ECM) estimate in this study, the coefficient for D(LOG(ER)) which describes the relationship between exchange rate changes and household consumption in the short term is positive and significant. The value of the coefficient of D(LOG(ER)) is 0.0639, with a t-statistic of 2.2812 which is significant at a probability level of 0.0306. This means that any 1% increase in the exchange rate (ER) will lead to an increase in household consumption by 0.0639% in the short term. These results show that in the short term, exchange rate changes have a positive effect on household consumption. This positive relationship in the short term can be explained through the following mechanisms: When the domestic currency

exchange rate depreciates, consumer purchasing power for imported goods decreases. This allows consumers to buy more cheaper domestic goods, which in turn increases household consumption.

On the other hand, in the long run, the relationship between exchange rate (ER) and household consumption (CONS) shows a positive but relatively small effect compared to the short-term relationship. Based on the results of the long-term model, the LOG(ER) coefficient was positive, with a coefficient value of 0.0491, and a t-statistic of 2.0734, which was significant at the probability level of 0.0471. This means that in the long run, every 1% increase in the exchange rate will lead to an increase in household consumption by 0.0491%. Although the effect remains positive, the impact is smaller when compared to the short-term effect. In the long run, higher exchange rates can continue to reduce consumers' purchasing power for imported goods. If the exchange rate weakens, the price of more expensive imported goods can encourage an increase in the consumption of goods in the country.

In this study, it was found that exchange rate (ER) has a positive and significant relationship with household consumption (CONS) both in the short and long term. In the short term, exchange rate changes have a greater impact on household consumption, especially through increased purchasing power of domestic goods (Oseni, 2016). In the long term, although the impact remains positive, the effect is more limited due to economic adjustments and other macroeconomic factors. Policies that support exchange rate stability and increase the competitiveness of domestic goods can help optimize household consumption in Indonesia.

Analysis of the Relationship between Manufacture Value Added (MVA) and Household Consumption

Based on the results of the Error Correction Model (ECM) estimates, the coefficient for D(LOG(MVA)) which describes the relationship between the change in Manufacturing Value Added (MVA) value and household consumption (CONS) in the short term is positive, although not very strong. The value of the coefficient of D(LOG(MVA)) is 0.5222, with a t-statistic of 1.9508, which is close to the significant limit at the probability level of 0.0615. This means that any 1% increase in MVA will lead to an increase in household consumption by 0.5222% in the short term. Although this effect is positive, the slightly lower level of significance (probability 0.0615) suggests that the short-term influence of MVA on household consumption tends to be weaker compared to some other more significant variables, such as GDP and imports. The positive relationship between MVA and household consumption in the short term can be explained through several mechanisms: The increase in the added value of the manufacturing sector, which is reflected in the MVA, is often associated with an increase in employment and income in the sector. As the manufacturing sector grows, it can create more jobs with higher incomes, allowing consumers to increase their spending, including the consumption of goods and services. The developing manufacturing sector tends to produce goods needed by the community, both direct consumption goods and capital goods. Therefore, the growth of the manufacturing sector can contribute to an increase in household consumption directly through the provision of more and cheaper goods.

In the long term, the relationship between MVA and household consumption (CONS) is also positive. Based on the results of the long-term model estimate, the LOG(MVA) coefficient is 0.2710, with a t-statistic of 2.2656, which is significant at the probability level of 0.0311. This means that in the long run, every 1% increase in MVA will lead to an increase in household consumption by 0.2710%. Although the effect is smaller than in the short term, this relationship is still significant and shows the contribution of the manufacturing sector to household consumption in the long term. The manufacturing sector has a very important role in long-term economic growth. In the long run, the increase in MVA is associated with sustained economic growth, which in turn increases household income and people's purchasing power. When households

have higher incomes, they tend to allocate more budget to consumption, which supports overall household consumption growth.

In this study, it was found that Manufacture Value Added (MVA) has a positive and significant relationship with household consumption (CONS) both in the short and long term. In the short term, the effect is more direct through job creation and income increase, while in the long term, the influence of the manufacturing sector on household consumption is more sustainable through increasing economic stability and people's purchasing power ([Anyanwu & Kponnou, 2017](#); [Olamade, 2021](#)). Policies that support the development of the manufacturing sector, increased investment, and workforce training can help optimize the sector's impact on household consumption in Indonesia.

Conclusions

The results of the study show that macroeconomic variables including GDP, Imports, Exchange Rate, and Manufacture Value Added (MVA) have a significant influence on household consumption both in the short and long term. In contrast, Population does not show a significant influence on household consumption in the short term, although this variable has the potential to have an impact in the long term.

The negative and significant results of the Error Correction Term (ECT) show that the Indonesian economic system tends to quickly return to long-term equilibrium after experiencing imbalances in macroeconomic variables. The speed of this adjustment illustrates Indonesia's economic ability to adapt to external changes that affect household consumption.

Thus, the study concludes that economic policies that focus on increasing GDP, strengthening the manufacturing sector, and maintaining exchange rate stability can contribute directly to increasing household consumption, which in turn supports overall economic growth. However, policies related to imports need to be carefully regulated to avoid negative impacts on the domestic sector and people's purchasing power.

Based on the findings obtained in this study, there are several policy recommendations that can be applied to encourage sustainable household consumption and support economic growth in Indonesia:

The government needs to encourage sustainable economic growth by designing fiscal policies that stimulate and strengthen sectors that can boost economic productivity, such as infrastructure, education, and technology. An increase in GDP will increase people's per capita income, which in turn will increase household purchasing power and consumption.

The manufacturing sector plays an important role in creating jobs and increasing people's incomes. Therefore, policies that support the development of the manufacturing sector, such as increased investment, skills training, and regulatory simplification, are urgently needed. Increased production of domestic goods can help lower prices and increase household consumption.

Import policies need to be maintained so as not to burden the domestic sector too much. Although imports can lower the prices of consumer goods, excessive imports can reduce the competitiveness of the domestic industry. Therefore, the government needs to consider the right protection policies to protect the domestic industry while maintaining the affordability of consumer goods for the public.

Exchange rate stability is very important to maintain people's purchasing power for imported goods. The government needs to maintain exchange rate stability through prudent monetary policy and work with central banks to reduce exchange rate volatility that can disrupt the stability of goods prices and household consumption.

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