

Original Article

Analysis Of Determinants and Inflation Projections In Jambi Province

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Abstract: This study aims to analyze the factors that influence inflation in Jambi Province and inflation projections in Jambi Province in 2025-2029. This study was conducted in Jambi Province using secondary data sourced from Bank Indonesia (BI), the Central Statistics Agency (BPS), the Jambi Provincial Government, and the Ministry of Finance. In this study, the analysis tools used are error correction model (ECM) and exponential to analyze and forecast inflation in Jambi Province. The study's results indicate that, in the short term, the exchange rate variable has a significant impact on inflation in Jambi Province, whereas the variables of export value, unemployment, government spending, and household consumption do not have a significant effect on inflation in Jambi Province. In the long term, the variables of exports, unemployment, household consumption, and exchange rates have a significant impact on inflation in Jambi Province, whereas government spending has no significant effect on inflation. Simultaneously, independent variables in both the long and short term have a significant effect on inflation in Jambi Province. Meanwhile, based on the exponential forecasting indicator table, the Holt-Winters Additive model shows the best performance with the lowest MAPE (Mean Absolute Percentage Error) value of 3,767,613. The results of the inflation forecast indicate that the future inflation trend exhibits volatility. Overall, this forecast period is marked by instability and quite large changes in the projected inflation rate.

Keywords: Inflation, Exchange Rate, Export Value, Unemployment, Government Spending.

I. INTRODUCTION

Inflation is a crucial economic indicator for determining the stabilization of a region's economy. It has both positive and negative impacts on economic stability [1]. A very low inflation rate may encourage central banks to implement expansionary monetary policies. Conversely, high and unstable inflation can trigger various economic problems [2], [3]. Inflation in Indonesia fluctuated between 2010 and 2024. In 2010, inflation was at a fairly high number, then decreased in the following year. There was a significant increase in inflation around 2013 and 2014, followed by a decrease in the subsequent years. Inflation was relatively low around 2019 and 2020 but increased again in 2022. In 2023, inflation began to decline again, and by 2024, it had reached a lower level than in previous years.

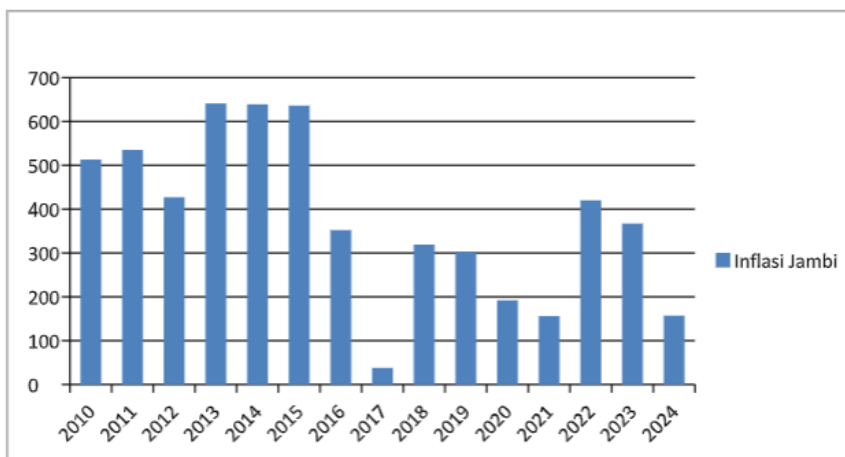


Figure 1. Inflation Conditions in Jambi Province

Based on Figure 1, inflation in Jambi from 2010 to 2024 shows a fairly diverse pattern. Initially, inflation was at a moderate level around 2010 and 2011, then experienced a significant increase in 2013 and 2014. After that, there was a sharp decline in 2016 before gradually increasing again until 2018. In the following years, inflation fluctuated, with a decline in 2020



and another increase in 2022, before finally declining in 2023 and 2024. Overall, it can be seen that inflation in Jambi did not show a consistent trend during this period, with several spikes and significant declines.

Conditions of factors influencing inflation in Jambi Province from 2019–2024. The Rupiah exchange rate tends to weaken, from IDR 14,130 (2019) to IDR 16,162 (2024). The unemployment rate rose from 3.79% (2019) to 4.93% (2021), then fell to 4.47% (2024). Household consumption and government spending increased, reflecting purchasing power and the government's active role in the economy. Exports rose drastically from US\$1,023,232 (2019) to US\$23,406,913 (2024), likely to be the main driver of growth. Overall, the data shows positive dynamics in the Jambi economy, especially from exports, although the exchange rate fluctuated and unemployment increased.

To understand the relationship between indicators that affect inflation, it is necessary to examine key economic variables, including exports, the unemployment rate, household consumption, government spending, and exchange rates. The movement of the Rupiah exchange rate against the US Dollar from 2019 to 2023 is influenced by global and domestic dynamics. The exchange rate was stable in 2019, weakened sharply in 2020 due to the pandemic, strengthened again in 2021, then was again depressed in 2022 due to geopolitical conflicts and rising global interest rates. 2023 showed fluctuations due to Bank Indonesia policies and global economic conditions. The unemployment rate in Jambi showed small fluctuations influenced by economic growth and government policies. Household consumption increased, reflecting improved purchasing power due to higher income and increased access to credit, but it also had the potential to drive inflation. Continued increases in government spending can stimulate growth and suppress inflation through subsidy programs, although they can also increase aggregate demand and potentially lead to higher inflation. Jambi's exports increased significantly from 2019 to 2024, reflecting the growth of the export sector due to increased production and global demand.

One of the primary objectives of macroeconomic policy is to maintain inflation stability, as stable inflation supports sustainable economic growth and enhances public welfare [4]. Achieving this goal requires active collaboration among the government, the central bank, and the private sector through the implementation of monetary and fiscal policies, productivity enhancements, distribution improvements, and effective policy coordination [5]. Meanwhile, forecasting is used to predict future conditions based on historical data. Inflation projections are crucial for evaluating the accuracy of forecasting methods, particularly at the provincial level, such as Jambi, which has different dynamics compared to the national level. These projections inform policy decisions, such as interest rate adjustments or reductions in government spending, while also supporting the analysis of factors influencing inflation to maintain economic stability and public purchasing power [6].

Examined the influence of money supply, economic growth, and interest rates on inflation in Indonesia during the period 1986–2019 using the Ordinary Least Squares (OLS) method. The results indicated that the money supply had a significant positive effect on inflation, while economic growth had a significant negative effect on inflation. In contrast, interest rates had a negative but statistically insignificant impact. Collectively, these three variables influence the inflation rate in Indonesia [7]. This finding aligns with international studies, which emphasize that excessive growth in the money supply tends to increase inflation, whereas sustainable economic growth can help stabilize prices [8], [9], [10].

Stable inflation creates a conducive investment climate, supports economic growth, and helps reduce poverty by protecting vulnerable groups from rising prices of necessities. Additionally, in the era of globalization, understanding the influence of external factors, such as oil prices and exchange rates, enables the government to respond to external shocks with effective policies. Overall, this analysis helps the government maintain sustainable economic stability. So, in this study, the author wants to analyze how to model and predict inflation values in Jambi Province and the factors that influence inflation in Jambi Province by raising the research title Analysis of Determinants and Inflation Projections in Jambi Province. The formulation of the problem is: what factors influence inflation in Jambi Province during the period 2010 - 2024, and What is the inflation projection in Jambi Province in 2025 - 2029?

II. LITERATURE REVIEW

A) Inflation theory

Inflation can be explained through several complementary major theories. The Quantity Theory of Money, as a classical foundation, posits that the price level is directly proportional to the money supply, assuming that the velocity of money and the volume of transactions remain relatively stable. This theory was later modernized by replacing the volume of transactions with real income [11]. The Demand-Pull Theory suggests that inflation arises when aggregate demand in the economy exceeds production capacity, leading to rising prices due to excess demand [12]. In contrast, the Cost-Push Theory explains inflation from the supply side, where increasing production costs force firms to raise selling prices to maintain profits, which in turn spreads into overall inflation. Lastly, the Structural Theory, which is particularly relevant to developing countries, highlights that inflation may stem from deep-rooted structural issues, such as inelastic supply and market inefficiencies, even in the absence of excessive demand pressures [13].

B) Factors Affecting Inflation

N. Gregory Mankiw, in his book *Principles of Economics*, explains that the impact of exports on inflation is a complex issue in macroeconomics, which can be understood through several theoretical perspectives. Generally, an increase in exports can trigger inflation through the aggregate demand mechanism. As exports are a key component of aggregate demand, their growth—particularly if not matched by a corresponding increase in domestic production—can lead to demand-pull inflation [14]. Similarly, an increase in government spending directly contributes to higher aggregate demand in the economy. When the government allocates more funds for various purposes, such as infrastructure development, civil servant salaries, or social programs, this elevates the overall demand for goods and services. Suppose an increase in supply or production does not accompany this surge in demand. In that case, it results in inflationary pressure, commonly referred to as demand-pull inflation, where "too much money chases too few goods" [15]–[19].

The Phillips Curve theory, proposed by economist A.W. Phillips, highlights an inherent trade-off or inverse relationship between the unemployment rate and the inflation rate in an economy. The core of this theory is the idea that when unemployment is low, pressure in the labor market increases, leading to rising wages. These higher wages are then passed on by firms in the form of higher prices, ultimately fueling inflation. Conversely, when unemployment is high, competition in the labor market intensifies, wage growth is restrained, and downward pressure is exerted on the inflation rate [20], [21]. Although the short-run Phillips Curve relationship has been empirically supported in various contexts, recent studies also point to conditions under which the trade-off weakens or disappears—such as during periods of stagflation or when inflation expectations are well-anchored [22].

Meanwhile, household consumption plays a crucial role in shaping the inflation rate through its impact on aggregate demand (AD). According to aggregate demand theory, a significant increase in consumer spending shifts the aggregate demand (AD) curve to the right. If a corresponding increase does not match this surge in demand in aggregate supply (AS), demand-pull inflation occurs, where prices rise due to excess demand. On the other hand, exchange rate fluctuations can affect import prices and the production costs of goods that rely on foreign raw materials. When the domestic currency depreciates, the price of imports rises, which increases domestic production costs and leads to inflation [23], [24].

III. RESULTS AND DISCUSSION

A) Results

a. Error Correction Model (ECM)

1. Classical Assumption Test

a) Normality Test

Table 1. Results of the Normality Test

Probability	Description
0.208290	Normal

Source: Processed Results from Eviews 12

The results of the normality test using the Jarque-Bera test shown in Table 1 indicate that the probability value is greater than $\alpha = 5\%$ (0.05). This suggests that the residuals from the regression results are normally distributed.

b) Autocorrelation Test

Table 2. Results of the Autocorrelation Test

Obs*R-squared	Pro. Chi-squared
1.44076	0.5644

Source: Processed Results from Eviews 12

The results of the autocorrelation test in this study, using the Breusch-Godfrey Serial Correlation LM Test, are shown in Table 2. The results indicate that the Chi-Square probability for Obs*R-squared is 0.5644, which is greater than $\alpha = 5\%$ (0.05). Therefore, it can be concluded that there are no autocorrelation issues.

c) Multicollinearity Test

Table 3. Results of the Multicollinearity Test

Variable	Centered VIF
C	NA
D(x)	2.400929
D(un)	2.416072
D(bp)	1.171109
D(krt)	1.577829
D(er)	1.790653

Source: Processed Results from Eviews 12

Based on Table 3, it can be concluded that there are no multicollinearity issues in the changes to the independent variables. This is evident from the centered VIF values for each variable, all of which are below 10. Therefore, it can be concluded that this regression does not contain multicollinearity issues.

d) Heteroskedasticity Test

Table 4. Results of the Heteroskedasticity Test

F statistic	Prob. F(6,52)	Obs*R-squared	Prob. Chi-square	Scaled explained SS	Prob. Chi-square
1.063809	0.3961	6.450324	0.3747	25.91037	0.0002

Source: Processed Results from Eviews 12

The Chi-Square probability value of 0.3747 for both the long-term and short-term is greater than the significance level $\alpha = 5\%$ (0.05), as shown in Table 4. This indicates that the model does not exhibit signs of heteroskedasticity. Therefore, the results of the Breusch-Pagan-Godfrey test show that there are no heteroskedasticity issues in the model.

2. Stationarity Test

a) Unit Root Test

The results of the data analysis using the Augmented Dickey-Fuller (ADF) test at the level are shown in Table 5. The variables of Exports, Unemployment, Household Consumption, and Exchange Rate have probabilities greater than $\alpha = 5\%$ (0.05) at the level. Thus, it can be concluded that these variables are not statistically significant at the given level and require a degree of integration test or a unit root test at the first difference to determine the point at which the data becomes statistically significant, thereby identifying issues of spurious correlation. Conversely, the variables of Inflation and Government Spending yield probability values of 0.0000 and 0.0206, which are less than the significance level of 5%. This indicates that Inflation and Government Spending are stationary at the same level.

Table 5. Results of Unit Root Test

Variable	ADF	Critical Value Mackinnon	Prob	Note
Inf	-7.520113	-3.546090	0.0000	Stationary
X	0.433854	-3.548208	0.9830	Not Stationary
Un	-0.868830	-2.916561	0.1921	Not Stationary
Bp	-3.289067	-3.564530	0.0206	Stationary
Krt	-0.457235	-3.548208	0.8915	Not Stationary
Er	-1.104332	-2.916561	0.5244	Not Stationary

Source: Processed Results from Eviews 12

b) Degree of Integration Test

Table 6. Results of Degree of Integration Test using ADF at 1st Difference

Variable	ADF	Critical Value Mackinnon	Prob	Note
Inf	14.79532	-3.548208	0.0000	Stationary
X	-4.255933	-2.912631	0.0012	Stationary
Un	-3.215363	-2.916361	0.0244	Stationary
Bp	-2.962889	-2.916566	0.0241	Stationary
Krt	-4.579757	-3.548208	0.0002	Stationary
Er	-3.874155	-2.916361	0.0008	Stationary

Source: Processed Results from Eviews 12

Based on the results of the degree of integration test at the First Difference shown in Table 6, the probability values for the variables of Inflation, Exports, Unemployment, Government Spending, Household Consumption, and Exchange Rate are less than $\alpha = 5\%$ (0.05). This indicates that the analyzed data is stationary at the First Difference. Therefore, the data meets the criteria and can proceed for analysis using the Error Correction Model (ECM).

c) Cointegration Test

The results of the cointegration test in Table 7 indicate that the probability for the ECT variable (0.0000) is less than $\alpha = 5\%$ (0.05), which shows that ECT is stationary. Based on this probability result, it can be concluded that there is cointegration among the variables. This indicates that the stationary ECT variable at the level of the unit root test shows a strong cointegration between the independent and dependent variables. Therefore, the ECM is considered valid and ready to proceed to the next stage.

Table 7. Results of Cointegration Test using ADF at Level

Variable	ADF	Critical Value Mackinnon	Prob	Note
ECT	-8.303667	-3.546099	0.0000	Cointegrated

Source: Processed Results from Eviews 12

d) ECM Estimation Results

Table 8. Results of Error Correction Model (ECM)

Variable	Coefficient	Std. Error	t-Statistic	Prob
C	196073.8	85757.58	2.0268	0.0268
D(X)	974.0573	3068.57	0.316924	0.7523
D(un)	-4957.573	1627.02	-3.04769	0.0046
D(bp)	-3054.102	3374.81	-0.904969	0.3671
D(krt)	724112.86	2324.72	311.3596	0.0000
D(er)	48783.75	2626.37	1.858711	0.0689
D(x)	971.5469	2432.98	0.39978	0.6902
un(-1)	-5771.859	1874.69	-3.073978	0.0043
bp(-1)	-2178.199	1786.12	-1.219352	0.2246
krt(-1)	-37457.33	1521.73	-24.59896	0.0000
er(-1)	25302.44	9258.68	2.732833	0.0070
ECT	1.146827	0.158127	7.253124	0.0000
R-squared	0.583875			
F-statistic	5.995170			
Prob(F-statistic)	0.00005			

Source: Processed Results from Eviews 12

The ECM estimation results with the model from Domowitz Elbadawi in Table 9 can be formulated as follows:

$$\Delta y_t = 196073.8 + 974.0573\Delta(X) - 4957.573 \Delta(un) - 3054.102 \Delta(bp) + 724112.86 \Delta(krt) + 48783.75 \Delta(er) + 971.5469 \Delta(x) - 5771.859 un(-1) - 2178.199 bp(-1) - 37457.33 krt(-1) + 25302.44 er(-1) + 1.146827 \Delta ect$$

The probability value of ECT is 0.0000, indicating that the ECT value is significant at the $\alpha = 5\%$ (0.05) level.

This means it can be concluded that the adjustment error influenced by ECT has a significant impact on the model. With a partial regression coefficient of ECT equal to 1.146827, it can be concluded that the model used is accurate and capable of explaining dynamic variations in the data.

3. Statistical Test

a) Partial Test (t-test)

Based on the data analysis in Table 9, in the short term, it is known that:

1. The export coefficient is 974.0573, with a positive sign indicating a positive correlation between changes in exports and changes in inflation. This relationship is not significant because the probability value of 0.7523 is greater than the significance level. Thus, it can be concluded that, in the short term, the export variable has no significant effect on inflation in Jambi Province.
2. The unemployment coefficient is -4957.573, with a negative sign indicating a negative correlation between changes in unemployment and changes in inflation. This relationship is not significant because the probability value of 0.4941 is greater than the significance level. Thus, it can be concluded that the unemployment variable does not have a significant effect on inflation in Jambi Province.
3. The Government Spending Coefficient is -3054.102, with a negative sign indicating a negative correlation between changes in government spending and changes in inflation. This relationship is not significant because the probability value of 0.3701 is greater than the significance level. Thus, it can be concluded that, in the short term, the government spending variable has no significant effect on inflation in Jambi Province.
4. The Household Consumption Coefficient is 724112.86, with a positive sign indicating a positive correlation between changes in household consumption and changes in inflation. This relationship is not significant because the probability value of 0.3743 is greater than the significance level. Thus, it can be concluded that, in the short term, the household consumption variable has no significant effect on inflation in Jambi Province.
5. The Exchange Rate Coefficient is 48783.75, with a positive sign indicating a positive correlation between changes in the exchange rate and changes in inflation. This relationship is significant because the probability value of 0.0694 is smaller than the 10% significance level. Thus, it can be concluded that in the short term, the exchange rate variable has a significant effect on inflation in Jambi Province.

Meanwhile, data analysis in Table 9, in the long term, it is known that:

1. The export coefficient is 971.5469, with a positive sign indicating a positive correlation between changes in exports and changes in inflation. This relationship is significant because the probability value of 0.0979 is smaller than the significance level of 10%. Thus, it can be concluded that in the long term, the export variable has a significant effect on inflation in Jambi Province.
2. The unemployment coefficient is -5771.859, with a negative sign indicating a negative correlation between changes in unemployment and changes in inflation. This relationship is significant because the probability

value of 0.0504 is smaller than the 10% significance level. Thus, it can be concluded that in the long term, the unemployment variable has a significant effect on inflation in Jambi Province.

3. The Government Spending Coefficient is -2178.199, with a negative sign indicating a negative correlation between changes in government spending and changes in inflation. This relationship is not significant because the probability value of 0.2954 is greater than the significance level. Thus, it can be concluded that, in the long term, the government spending variable has no significant effect on inflation in Jambi Province.
4. The Household Consumption Coefficient is -37457.33, with a negative sign indicating a negative correlation between changes in household consumption and changes in inflation. This relationship is significant because the probability value of 0.0130 is smaller than the 5% significance level. Thus, it can be concluded that in the long term, the household consumption variable has a significant effect on inflation in Jambi Province.
5. The Exchange Rate Coefficient is -25302.44, with a negative sign indicating a negative correlation between changes in the exchange rate and changes in inflation. This relationship is significant because the probability value of 0.0088 is smaller than the significance level. Thus, it can be concluded that in the long term, the exchange rate variable has a significant effect on inflation in Jambi Province.

b) Simultaneous Test

Simultaneous test is used to test whether the dependent variable is influenced by the independent variable. Based on Table 9, the probability value of the f-statistic is 0.000005, which is lower than the significance level of $\alpha = 5\%$; it can be concluded that the independent variable, both in the long term and the short term, has a significant influence on inflation in Jambi Province.

c) Determination Coefficient (R²)

Based on the estimation results shown in Table 9, the determination coefficient (R²) is in the range of 0.583875. This indicates that the influence of the independent variable on the dependent variable is 58% in both the long term and the short term, while the remaining 42% is explained by residual variables that are not included in the model.

4. Exponential Model

a) Stationarity Test

Table 9. ADF Stationarity Test

Test Statistic	Value
Augmented Dickey-Fuller test stat	-4.697.763
p-value	0.0003
Test Critical	
1% level	-3.546.099
5% level	-2.911.730
10% level	-2.593.551

Source: Processed Results from Eviews 12

Based on the results of the Augmented Dickey-Fuller (ADF) test, the data is proven to be stationary. The ADF test statistic value of -4.697.763 is lower than the critical values at the 1%, 5%, and 10% significance levels, supported by a p-value of 0.0003, which rejects the null hypothesis. This indicates that the data does not exhibit trends or seasonal patterns, with constant mean and variance, making it suitable for use in time series forecasting models.

b) Assessment of Exponential Forecasting Indicators

Table 10. Exponential Forecasting Indicators

No	Indicator	Single	Double	No Seasonal	Holt-Winters Multiplicative	Holt-Winters Additive
1	Alpha	0.258			0.32	0.30
2	Residual	252,504.7	263,336.1	2.621	230.436	1,996.319
3	RMSE	2.051411	2.094979	2.089944	1.958.043	2.391.174
4	MAPE	4.146913	4.152599	4.070958	3.767613	3.831522
5	Trend	-0.029539			-0.071384	
6	Beta	0			0	
7	Gamma	0			0	

Source: Processed Results from Eviews 12

Based on Table 10, various exponential models were used to project inflation in Jambi Province. The Holt-Winters Multiplicative model demonstrated the best performance with the lowest RMSE, residual, and MAPE, indicating the most accurate predictions. All models showed a downward trend in inflation (negative trend), with both Holt-Winters

Multiplicative and Additive models having the highest Beta values. However, the Gamma value of 0 indicates no seasonal components were accounted for.

On the other hand, the Holt-Winters Multiplicative model showed the best performance in forecasting inflation, marked by the lowest RMSE, residual, and MAPE values, reflecting the highest prediction accuracy compared to other exponential models. Forecasting with the Holt-Winters Multiplicative model indicated a fluctuating inflation trend from quarter to quarter. In the first quarter of 2025, inflation is predicted to be 3.393.362, then increasing in the second quarter to 3.565.978. Subsequently, there is a decrease in the third quarter to 3.342.243, followed by an increase in the fourth quarter to 4.030.921. This pattern of fluctuations continues until 2029, with the lowest predicted inflation occurring in the first quarter of 2029 at 2.344.805 and the highest in the fourth quarter of 2025 at 4.030.921. Overall, the Holt-Winters Multiplicative model provides a more accurate and reliable inflation projection, with the ability to capture seasonal patterns and trends in inflation data.

B) Discussion

a. Analysis of Factors Affecting Inflation in Jambi Province

1. The Impact of Exports on Inflation

In the short run, exports do not significantly influence inflation (probability = 0.7523), while in the long run, they exhibit a significant impact at the 10% significance level (probability = 0.0979). This finding suggests that export fluctuations do not immediately impact short-term inflation due to price rigidity and the nature of Jambi's export commodities, which are generally not domestically consumed goods. However, in the long term, exports can stimulate income growth, increase aggregate demand, and trigger inflation, as explained by aggregate demand and structuralist theories. Moreover, exports may enhance production efficiency, thereby reducing inflationary pressures.

This observation aligns with the findings of [25], who demonstrated that exports, exchange rates, and oil prices collectively influence inflation in Indonesia. Although exports may not have a significant short-term impact, the government should encourage export diversification and value addition to reduce dependence on primary commodities. In the long run, increased exports must be accompanied by productivity improvements and efficiency gains to avoid inflationary pressure. The government may also provide investment incentives in the export sector and expand access to international markets. These implications are consistent with previous empirical studies, which indicate that exports can drive inflation through rising aggregate demand and foreign market dependencies.

2. The Impact of Unemployment on Inflation

In the short run, changes in unemployment are not statistically significant in affecting inflation (probability = 0.4941). However, in the long run, unemployment has a significant and negative impact on inflation (probability = 0.0504). This suggests that external factors have a greater influence on inflation in the short term, while in the long run, unemployment has a deflationary effect. These findings are consistent with the Phillips Curve theory, which posits an inverse relationship between unemployment and inflation over the long term. The results from the Error Correction Model (ECM) suggest that the structural influence of unemployment on inflation is more pronounced in the long run.

Yehosua and Halaman [26] found that inflation had a negative but statistically insignificant effect on unemployment in Manado, while interest rates had a significant positive impact. The increase in interest rates tends to raise unemployment, and the combination of inflation and interest rates demonstrates the potential for worsening labor market conditions in the city. These outcomes align with international research, which has demonstrated that the Phillips Curve remains relevant in certain macroeconomic environments, particularly in developing economies. For instance, studies have demonstrated that unemployment may suppress inflation through reduced wage pressures and diminished consumer demand [27]–[28].

3. The Effect of Government Spending on Inflation

The results of the Error Correction Model estimation using the Domowitz approach show that government spending has no significant effect on inflation in Jambi Province, both in the short term (probability 0.3701) and the long term (probability 0.2954). The negative coefficients in both periods indicate an opposite direction of the relationship, but they are not statistically significant. Theoretically, this can be attributed to the dominance of routine spending, which does not directly drive aggregate demand, the low effectiveness of capital spending, and weak fiscal transmission to the real sector. Within the framework of monetarist theory, inflation is more influenced by the money supply and inflation expectations than by government spending. This condition reflects that fiscal policy in Jambi Province has not been able to significantly drive inflationary pressures. Since government spending does not significantly impact inflation, an evaluation of its effectiveness is necessary. The focus of spending should be directed to productive investments such as infrastructure and education, as well as increasing efficiency to minimize waste. Studies by Lestari in North Sumatra and Sutiawan & Sanjani in NTB show similar results: government spending does not significantly affect inflation, while GRDP per capita reduces

inflation. This finding highlights the importance of allocating funds properly to drive economic growth without causing inflationary pressure.

4. The Impact of Household Consumption on Inflation

Based on the ECM estimation using the Domowitz approach, household consumption does not significantly affect inflation in the short run (probability = 0.3743) but has a significant negative effect in the long run (probability = 0.0130). This indicates that a long-term decline in consumption can suppress inflation but also reflects weak economic growth. These findings contrast with Sanjani's study (2023), which suggests that household consumption has a significant influence on inflation due to its contribution to GDP. Household consumption does not significantly impact short-term inflation because prices tend to be rigid, and consumption patterns in Jambi are stable, focusing on basic needs, which do not cause price pressures. Furthermore, elastic supply and smooth distribution prevent price increases. Conversely, in the long term, consumption has a significant negative effect on inflation by promoting economic efficiency and increasing production capacity, which restrains inflation and strengthens price stability according to the structuralist approach.

Dakhi et al. [29] found that household consumption did not significantly affect inflation in Central Kalimantan Province (2018–2022) based on Granger causality tests. However, due to the non-stationary nature of the data, further analysis is necessary. Overall, household consumption in Central Kalimantan is not strongly influenced by inflation, suggesting that regional governments should continue to maintain economic stability. These results are supported by international studies showing that while short-term consumption fluctuations may not immediately affect inflation due to price rigidities, long-term consumption patterns influence inflation through productivity and capacity adjustments [30], [31].

5. The Effect of Exchange Rates on Inflation

Short- and long-term exchange rate changes significantly affect inflation, with coefficients of 48,783.75 ($p = 0.0694$) and 25,302.44 ($p = 0.0088$), respectively. Rapid exchange rate fluctuations influence import prices and inflation, while long-term depreciation increases import costs and inflation. These findings align with those of Rasyidin et al. [32], who state that currency depreciation drives up import prices and inflation through imported inflation and also affects inflation expectations. Stable monetary policies, such as foreign exchange interventions and interest rate controls, are crucial to mitigating the impact of exchange rate volatility on inflation. The government needs to maintain exchange rate stability through stringent policies and coordination with Bank Indonesia, as well as by managing factors that influence the exchange rate.

b. ARIMA Analysis in Forecasting

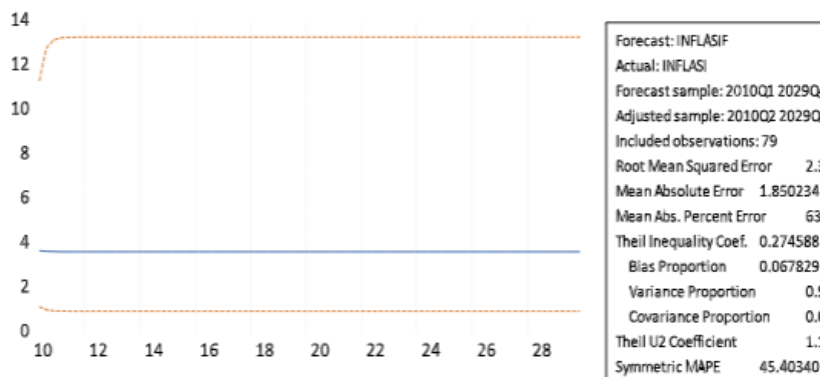


Figure 2. Jambi Province Inflation 2025 – 2029

Source: Processed Results from Eviews 12

Based on the forecasting results using Arima (1,0,0), the results of inflation forecasting using the ARIMA model, which is shown by the blue line (INFLATION), with a confidence interval of ± 2 standard errors (dotted orange line). The data range used is from the first quarter of 2010 to the fourth quarter of 2029. Model evaluation metrics include RMSE (2.354962), MAE (1.850234), MAPE (63.00852), Theil Inequality Coefficient (0.274588), Bias Proportion (0.067829), Variance Proportion (0.928810), Covariance Proportion (0.003362), Theil U2 Coefficient (1.194491), and Symmetric MAPE (45.40340). The forecast tends to be stable with small fluctuations, but large confidence intervals indicate uncertainty. A high MAPE value (63.00852) and Theil U2 Coefficient greater than 1 (1.194491) indicate a large percentage of prediction errors and poor model performance. Overall, the ARIMA model exhibits stable forecasting, albeit with low accuracy.

IV. CONCLUSION

Based on the study's results, it can be concluded that, in the short term, the exchange rate variable has a significant impact on inflation in Jambi Province, whereas the export value, unemployment, government spending, and household consumption variables do not have a significant effect on inflation in Jambi Province. In the long term, the variables of export, unemployment, household consumption, and exchange rate have a significant impact on inflation in Jambi Province. In contrast, government spending has a minimal effect on inflation. Simultaneously, the independent variables in both the long and short term have a significant effect on inflation in Jambi Province. Meanwhile, based on the exponential forecasting indicator table, the Holt-Winters Additive model shows the best performance with the lowest MAPE (Mean Absolute Percentage Error) value of 3,767,613. MAPE measures the average percentage of prediction error, so lower values indicate higher accuracy. The Holt-Winters Additive model is suitable for data with trends and seasonality and appears to provide the most accurate forecasting results compared to other models. Based on the Holt-Winters Additive Model data, which is assumed to be the result of inflation forecasting, the future inflation trend exhibits volatility. Overall, this forecast period is characterized by considerable volatility and changes in projected inflation rates.

Interest Conflicts

The author(s) declare(s) that there is no conflict of interest concerning the publishing of this paper.

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