INTERNATIONAL MONETARY FUND

Strengthening Inflation Forecasting in São Tomé and Príncipe

Alsis Cruz and Dilson Tiny, led by Bahrom Shukurov

SIP/2025/116

IMF Selected Issues Papers are prepared by IMF staff as background documentation for periodic consultations with member countries. It is based on the information available at the time it was completed on July 16, 2025. This paper is also published separately as IMF Country Report No 25/229.

2025
AUG

SELECTED ISSUES PAPER

 SIP/2025/116

IMF Selected Issues Paper
African Department

Strengthening Inflation Forecasting in São Tomé and Príncipe

Prepared by Alsis Cruz and Dilson Tiny, led by Bahrom Shukurov

Authorized for distribution by Slavi Slavov
August 2025

***IMF Selected Issues Papers* are prepared by IMF staff as background documentation for periodic consultations with member countries.** It is based on the information available at the time it was completed on July 16, 2025. This paper is also published separately as IMF Country Report No 25/229.

ABSTRACT: This paper examines the drivers of inflation in São Tomé and Príncipe and develops a model for forecasting it. It finds that both supply and demand factors contribute to inflation in the country. Supply-side factors consist of inflation inertia, import food prices, and global or regional crises, whereas factors affecting demand are associated with weakened macroeconomic discipline in the leadup to elections. To effectively reduce and manage inflation, a comprehensive policy mix must address both supply and demand factors.

RECOMMENDED CITATION: Alsis Cruz, Bahrom Shukurov, and Dilson Tiny. 2025. Strengthening Inflation Forecasting in São Tomé and Príncipe. IMF Selected Issues Paper SIP/2025/116.

JEL Classification Numbers:	E31, E37, O55
Keywords:	São Tomé and Príncipe, inflation forecasting, supply and demand shocks, VAT impact, pegged exchange rate regime, Autoregressive Distributed Lag (ARDL) model, policy mix
Authors' E-Mail Addresses:	adacruz@imf.org; BShukurov@imf.org; DPontesTiny@imf.org

SELECTED ISSUES PAPERS

Strengthening Inflation Forecasting in São Tomé and Príncipe

Prepared by Alsis Cruz and Dilson Tiny, led by Bahrom Shukurov

INTERNATIONAL MONETARY FUND

DEMOCRATIC REPUBLIC OF SÃO TOMÉ AND PRÍNCIPE

SELECTED ISSUES

July 16, 2025

Approved By
The African Department

Prepared By Alsis Cruz and Dilson Tiny, led by Bahrom Shukurov

CONTENTS

STRENGTHENING INFLATION FORECASTING IN SÃO TOMÉ AND PRÍNCIPE[1]

This paper examines the drivers of inflation in São Tomé and Príncipe and develops a model for forecasting it. It finds that both supply and demand factors contribute to inflation in the country. Supply-side factors consist of inflation inertia, import food prices, and global or regional crises, whereas factors affecting demand are associated with weakened macroeconomic discipline in the lead-up to elections. To effectively reduce and manage inflation, a comprehensive policy mix must address both supply and demand factors.

A. Introduction

1. This inflation analysis builds upon the 2018 Selected Issue Paper, which provided a comprehensive examination of inflation dynamics in São Tomé and Príncipe.[2] That paper laid the groundwork for understanding the factors influencing inflation trends in the country. This analysis employs the Phillips Curve approach within the framework of the Autoregressive Distributed Lag Model, while also integrating recent developments, particularly the effects of global market fluctuations. As a result, the analysis centers on inflation forecasting, providing valuable insights for policymaking.

2. While inflation in São Tomé and Príncipe significantly declined under the peg regime, recent surges in global food and energy prices have exerted substantial upward pressure on inflation. Over the past 15 years, the country has made notable strides in controlling inflation, largely attributed to the implementation of a Euro peg in 2010. This policy helped stabilize prices by anchoring the local currency to the Euro, which in turn facilitated more predictable economic conditions. However, the recent increase in global food prices, driven by various factors including supply chain disruptions and geopolitical tensions, pushed inflation rates in São Tomé and Príncipe into double digits. This situation has created a considerable inflation differential compared to the Euro area and has strained the peg, raising concerns about its sustainability.

3. Given these challenges, strengthening inflation forecasting tools is crucial for informing effective policies aimed at reducing and stabilizing inflation. Accurate forecasting can help the government of São Tomé and Príncipe anticipate inflationary pressures and implement timely measures to mitigate their impact. Additionally, it can enhance decision-making processes regarding monetary policy, fiscal strategies, and overall economic management. By focusing on these forecasting tools, the government can better navigate the complexities of inflation in the evolving economic landscape of São Tomé and Príncipe.

[1] Prepared by Alsis Cruz and Dilson Tiny, led by Bahrom Shukurov.

[2] See the 2018 Selected Issue Paper, including for background and literature review.

4. This paper is organized as follows. In Section B, we explore the structure of inflation and recent developments that have influenced price levels. Section C outlines the methodology and data sources used in our analysis, ensuring a robust framework for our findings. In Section D, we present the results from our model estimation, highlighting key trends and patterns in inflation behavior. Section E focuses on the evaluation of our model and offers forecasts for future inflation trends. Finally, Section F concludes with policy recommendations aimed at addressing inflationary pressures and fostering economic stability.

B. Inflation Structure and Recent Developments

5. The composition of the Consumer Price Index (CPI) in São Tomé and Príncipe underscores the dominant role of food. The CPI basket, updated in 2015 to reflect evolving consumption patterns, includes 12 subindexes and a total of 79 categories of goods and services. Within this basket, food represents approximately 70 percent, highlighting its significant influence on overall inflation. Notably, nearly half of the food items in the CPI are locally produced, emphasizing the crucial role of domestic agriculture in maintaining price stability. This dependence on local food production can also shape how inflationary pressures are felt in the country, especially in light of global market fluctuations. While fuel and electricity make up around 6 percent of the CPI basket, any adjustments to both can substantially impact inflation, given second-round effects. Core inflation, which excludes food, fuel, and electricity prices, constitutes the remaining portion of the CPI basket, representing about 24 percent.

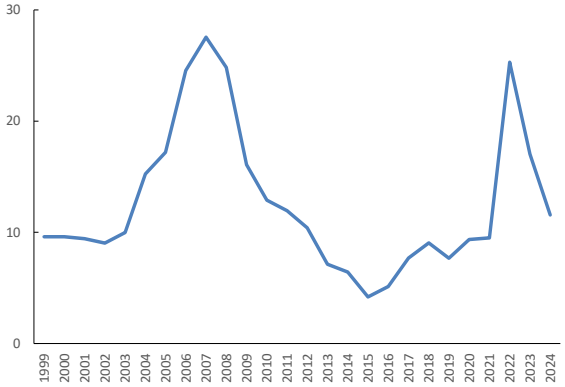
6. The transition between exchange rate regimes in São Tomé and Príncipe has significantly influenced inflation dynamics and price stability (Figure 1). Since 1999, the country has transitioned through two distinct exchange rate regimes: a flexible exchange rate until 2009 and a peg to the euro from 2010 onward. During the flexible regime, average inflation was notably higher at 16.4 percent from 1999 to 2009, compared to a more stable 8.4 percent under the peg from 2010 to 2020. This difference underscores the impact of the exchange rate policy on price stability. Furthermore, volatility in inflation was significantly greater during the flexible regime, with a standard deviation of 6.5 percent, compared to just 2.5 percent under the pegged regime. This reduction in volatility suggests that the peg provided a more predictable economic environment, contributing to lower and more stable inflation rates in São Tomé and Príncipe.

7. While the fixed exchange rate provided relative price stability, prices increased significantly by 2023. Under this regime, inflation decreased from 16.1 percent in 2009 to approximately 3.9 percent in 2015, broadly aligning with inflation rates in Portugal and the Eurozone. However, since 2017, inflation has trended upward, primarily driven by rising food prices, averaging about 8 percent annually from 2017 to 2021. By 2023, inflation surged to over 25 percent, partly due to the global inflationary shock, leading to significant price increases for imported food, followed by substantial rises in the prices of locally produced food. These volatile food price hikes have also impacted other components of the CPI, causing core inflation to spike from around 2 percent in 2021 to 15.9 percent by the end of 2023 (Figure 1).

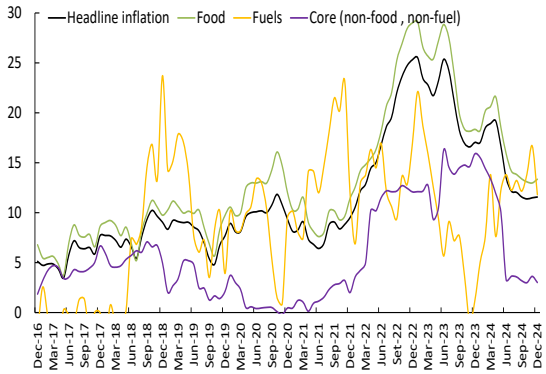
8. The recent decline in global food prices, combined with prudent macroeconomic policies, has led to a reduction in inflation in São Tomé and Príncipe. Driven by the unwinding of food price increases in 2023 and 2024, alongside fiscal consolidation and monetary tightening, inflation fell to 11.6 percent year-over-year by December 2024, while core inflation decreased to 3.0 percent during the same period (Figure 1). This decline occurred despite the introduction of VAT in June 2023, which we estimate contributed about 5 percentage points to price increases in 2023 (Box 1).

Figure 1. São Tomé and Príncipe: Inflation Developments (In Percent)

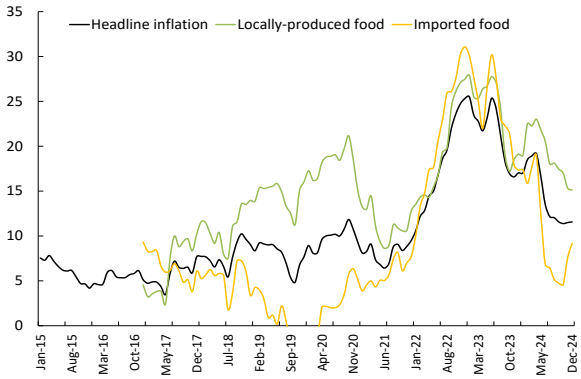
Headline Inflation, y/y, 1999-2024



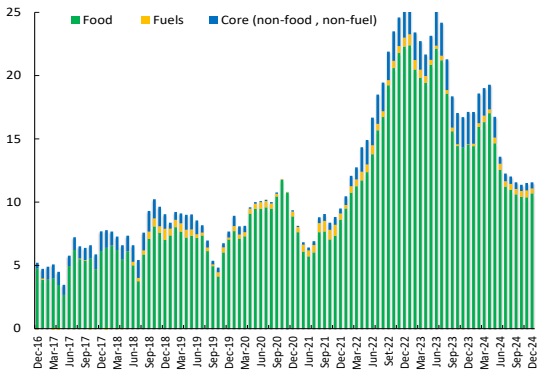
Inflation by Components, y/y, Jan 2015-Dec 2024



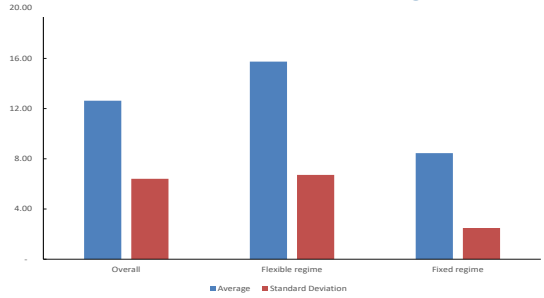
Food Inflation, y/y, Jan 2015-Dec 2024



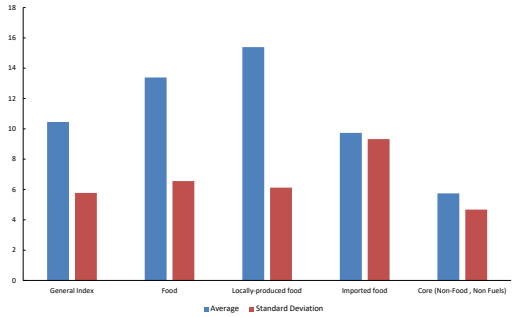
Contributions to y/y Inflation, Jan 2015-Dec 2024



Volatility of Headline Inflation: Fixed (2010-2020) and Flexible (1999- 2009) Regimes 1/



Volatility of Inflation Components 2/



1/ Volatility is measured by calculating the standard deviations of annual y/y inflation rates across sub-periods.

2/ Same as in footnote 1, but for monthly y/y inflation rates from January 2015 to December 2024.

Source: INE and Staff calculations.

Box 1. São Tomé and Príncipe: Estimating the VAT Impact on Inflation

This box aims to empirically assess the impact of the Value Added Tax (VAT) introduction on inflation in São Tomé and Príncipe. The VAT, set at a main rate of 15 percent, was introduced in June 2023. Certain products and services are subject to a reduced rate of 7.5 percent, while others are fully exempt from the tax. If VAT coverage were complete and its impact on prices were immediate, our mechanical estimates indicate that CPI inflation in São Tomé and Príncipe would have risen by 5 percentage points in June 2023. However, the impact of the VAT introduction continued to unfold through the end of 2023.

Using a methodology similar to that of Gautier and Lalliard (2013), we find that the impact of the VAT introduction on inflation in São Tomé and Príncipe was estimated at 4.9 percentage points. For comparison, we also evaluated the impact of VAT in Sub-Saharan African countries that have implemented it in recent years, which is estimated at 3.2 percentage points.

VAT impact on inflation in São Tomé and Príncipe

To implement the "difference in differences" approach, we begin by calculating the differences in the monthly changes of the CPI for São Tomé and Príncipe as follows:

$$DIFF_{STP,m} = \pi_m^{2023} - avg(\pi_m) \quad (1)$$

Where π_m^{2023} is the monthly price variations in 2023 and $avg(\pi_m)$ is the average of monthly price variations in 2015-2022. This difference quantifies the inflation gap experienced by São Tomé and Príncipe in 2023 compared to a "normal" baseline.

Next, we calculate the counterfactual inflation for São Tomé and Príncipe, representing what inflation would have been without the introduction of VAT. To do this, we analyze inflation in Cabo Verde, as both countries share similar cyclical factors, including being island economies, having a pegged exchange rate to the Euro, and maintaining strong ties to Portugal. We also determine the inflation gap observed in Cabo Verde compared to a "normal" baseline, as follows:

$$DIFF_{CV,m} = \pi_m^{2023} - avg(\pi_m) \ (2)$$

Where π_m^{2023} is the monthly price variations in 2023 and $avg(\pi_m)$ is the average of monthly price variations in 2015-2022.

We proceed to estimate the impact of VAT on inflation in São Tomé and Príncipe for June 2023 by calculating the difference between (1) and (2), as follows:

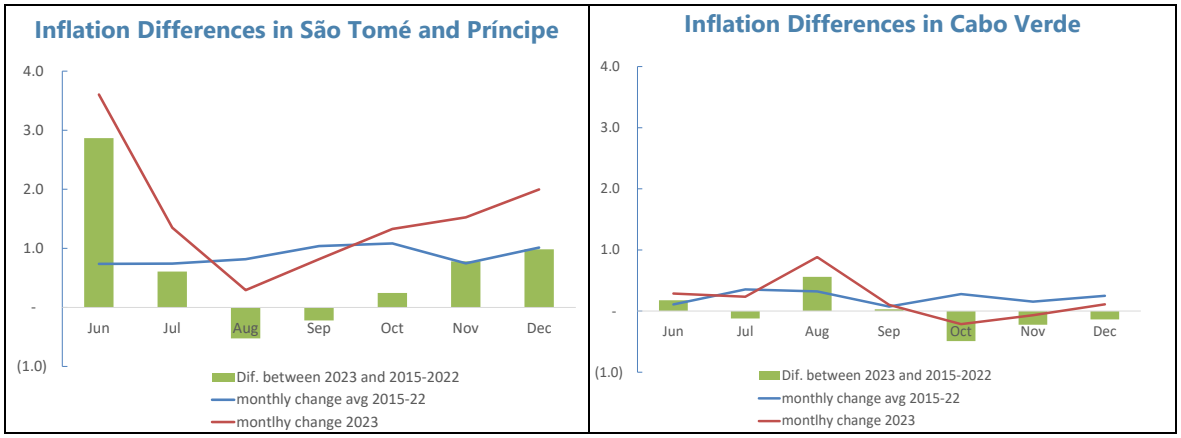
$$DD_m = DIFF_{STP,m} - DIFF_{CV,m} \ (3)$$

The "difference in differences" estimate indicates that the introduction of VAT in São Tomé and Príncipe in June 2023 was associated with an inflation increase of 2.7 percentage points.

Assuming broad VAT coverage by the end of 2023, we calculate the difference-in-differences for June to December 2023. This approach indicates that the impact of the VAT introduction on inflation in São Tomé and Príncipe was 4.9 percentage points in 2023 (Figures 1 and 2).

Box 1. São Tomé and Príncipe: Estimating the VAT Impact on Inflation (concluded)

However, this estimate should be interpreted with caution due to differing domestic policy responses in São Tomé and Príncipe and Cabo Verde that are not accounted for in this model.



VAT impact on inflation in other Sub-Saharan Africa countries

We also conducted a Panel Least Squares regression using data from 11 Sub-Saharan African countries that have implemented VAT since 1990, excluding São Tomé and Príncipe. Most of these countries introduced VAT at a rate of 15 percent, though a few had higher rates and one had a lower rate. The regression equation is as follows:

$$\pi_{it} = c + \alpha\pi_{it-1} + \beta' X_{it} + \mu_{it}$$

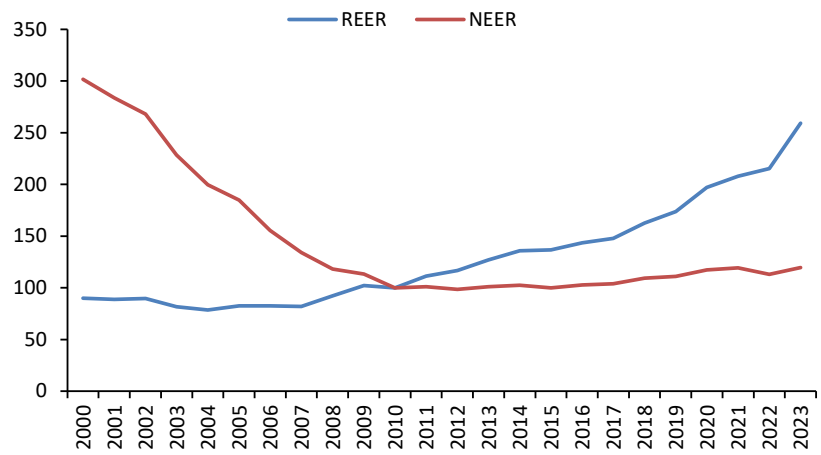
where π_{it} is annual average inflation of country i in period t, c is constant, X_{it} is a dummy variable for the year when the VAT was introduced in each country, μ_{it} is the error term. The model indicates that, holding all other factors constant, the introduction of VAT is linked to a 3.17 percentage point increase in average inflation among the Sub-Saharan African countries studied (Table 1). This coefficient is both positive, as anticipated, and statistically significant.

Panel Model Results

	Description	***Panel Model***	
		Coef.	P value
Dummy	VAT implementation	3.17	0.00
Inflation$_{(t-1)}$	Lagged inflation	0.52	0.00
c	Constant	1.9	0.00
R^2	0.40		
Adjusted R^2	0.33		
Observations	362		

9. High inflation rates, coupled with the appreciation of the Euro against the US dollar, have resulted in notable increases in both the Real Effective Exchange Rate (REER) and the Nominal Effective Exchange Rate (NEER) in São Tomé and Príncipe. From 2010 to 2023, the REER has experienced substantial appreciation. This trend can be attributed to persistent high inflation levels and the country's pegged exchange rate system. As inflation rose, the REER also increased, indicating a decline in the country's competitiveness (Figure 2). In parallel, the NEER has risen by 20 percent during the same period, largely driven by the Euro's strengthening against the US dollar.

Figure 2. São Tomé and Príncipe: REER and NEER



10. To evaluate the impact of exchange rate fluctuations on the local economy, we conducted an analysis of the passthrough effect of changes in the nominal effective exchange rate (NEER) on inflation in micro-islands (Box 2). This analysis examines a sample of seven micro-islands with fixed exchange rate regimes from 2001 to 2023. In our model, we controlled for external factors, including the effects of the global crises, to ensure a comprehensive understanding of the dynamics at play. The estimated passthrough effect of NEER changes on inflation in these micro-islands is approximately -0.33, indicating that a 10 percent appreciation/depreciation of the NEER correlates with a decline/increase in annual inflation by 3.3 percentage points, respectively.

Box 2. São Tomé and Príncipe: Empirical Assessment of the NEER Passthrough on Inflation in Island Microstates

This box aims to quantify the passthrough of the nominal effective exchange rate (NEER) to domestic prices by analyzing a sample of seven micro-islands with fixed exchange rate regimes from 2001 to 2023, selected based on data availability.[1]

Model Specification:

We estimate NEER passthrough using the following OLS panel regression model:

$$\pi_{it} = c + \alpha\pi_{it-1} + \sum_{j=0}^{k} \beta_j NEER_{it-j} + \delta D_t + \mu_{it}$$

Where π_{it} is annual average inflation of country i in period t; $NEER$ is the annual NEER change, and k is the respective lag length with k=1 (based on the Akaike and Schwarz information criteria); D_t is a dummy control variable representing the global crises that impacts both inflation and the NEER; μ_{it} is the error term.

Empirical findings

The regression model suggests that keeping everything else constant:

- On average, a 10 percent appreciation/depreciation of the NEER is associated with a decline/increase in annual inflation by 3.3 percentage points. This coefficient is negative as expected and statistically significant.
- The lagged NEER coefficient is negative, as expected, but not statistically significant, indicating that the passthrough effect on inflation occurs within the same year.
- The model indicates that inflation inertia and the effects of the global crises significantly contribute to driving inflation in these countries.

Panel Model Results

Explanatory variable	Coef.	P value
Inflation$_{(t-1)}$	0.24	0.00
NEER$_{(t)}$	-0.33	0.00
NEER$_{(t-1)}$	-0.20	0.10
Global crises	2.10	0.02
Constant	1.63	0.00
R^2	0.36	
Adjusted R^2	0.31	
Observations	140	
Number of countries	7	
Country fixed effects	yes	

[1] Antigua and Barbuda, Barbados, Dominica, Grenada, St. Kitts and Nevis, Saint Lucia, and Saint Vincent and the Grenadines.

C. Methodology and Data

11. The model captures inflation by accounting for inflation expectations, as well as demand-side and supply-side shocks. It employs the Phillips Curve approach based on the Autoregressive Distributed Lag Model, similar to the methodology used by Lanau, Robles, and Toscani (2018), with additional enhancements as outlined below. The model incorporates the following key drivers of inflation:

- **Inflation inertia/expectations.** This component is based on the assumption that economic agents form expectations about future inflation using a backward-looking approach. To achieve this, the model employs past inflation as a proxy for these expectations, reflecting adaptive expectations.

- **Demand-side shocks.** These factors capture the positions of the economic cycle, represented by lagged real GDP growth, and the effects of looser macroeconomic discipline during national elections, indicated by a dummy variable.

- **Supply-side shocks.** The model incorporates Portugal's food inflation as a proxy to capture imported inflation shocks, reflecting São Tomé and Príncipe's heavy reliance on imported food, its exchange rate peg to the Euro, and Portugal's status as its main trading partner.[3] Furthermore, the model includes domestic fuel price adjustments. To enhance its robustness, a dummy variable is included to account for the effects of significant crises: the global economic and financial crisis of 2007-2008, the COVID-19 crisis in 2020, and the crisis stemming from Russia's invasion of Ukraine in 2022. Additionally, another dummy variable is introduced to capture the effects of the pegged exchange rate regime.

12. We tested several other variables in the model, but none yielded satisfactory results. Government expenditure displayed a negative coefficient, which was contrary to expectations; however, it was statistically insignificant. The nominal effective exchange rate showed positive coefficients that contradicted theoretical expectations and was also statistically insignificant. Similarly, international reserves and BCSTP credit to the government exhibited positive coefficients but lacked statistical significance. Furthermore, incorporating these variables into the model would fail to satisfy several residual diagnostic tests, including those for serial correlation, heteroskedasticity, and normality.

13. The analysis uses annual data from 1998 to 2023, including: end-of-period inflation and real GDP growth in São Tomé and Príncipe, end-of-period food inflation in Portugal, and changes in fuel prices in São Tomé and Príncipe. Additionally, the analysis incorporates dummy variables to account for election periods in São Tomé and Príncipe as well as structural breaks associated with global and regional crises, along with the transition to a pegged exchange rate regime.

[3] Over the past 10 years, imports from Portugal have represented an average of 49 percent of total imports to São Tomé and Príncipe, with European countries collectively accounting for 55 percent of total imports.

D. Results from Model Estimation

14. Prior to estimating the models, we ensured the stationarity of the series by conducting the Augmented Dickey-Fuller and Phillips-Perron tests. The number of lags for each variable was automatically determined using the Akaike Information Criterion (AIC).

Modeling End-of-Period Inflation

$$\pi_t = c + \alpha\pi_{t-1} + \beta_1 imp.inf_t + \beta_2 imp.inf_{t-1} + \delta cycle_{t-1} + \theta fuel_t + \varphi D1_t + \gamma D2_t + \omega D3_t + \mu_t$$

where π is the end-of-period inflation rate in São Tomé and Príncipe; c is a constant; $imp.inf$ is the end-of-period food inflation rate in Portugal; $cycle$ is real GDP growth in São Tomé and Príncipe; $fuel$ is the percentage change in domestic fuel prices; $D1$ is a dummy variable for elections in São Tomé and Príncipe; $D2$ is a dummy variable for the structural breaks associated with the global crises; and $D3$ is a dummy variable representing the structural break related to the introduction of the pegged exchange rate regime in São Tomé and Príncipe.

15. Inflation inertia imported food prices, global crises, national elections, and the pegged exchange rate regime significantly impact inflation in São Tomé and Príncipe. The model's estimates (Table 1) suggest that keeping everything else constant, a change in end-of-period inflation:

- **is influenced by past inflation**. A one-percentage point increase in the lagged end-of-period inflation of São Tomé and Príncipe results in a 0.49-percentage point rise in end-of-period inflation. This coefficient is statistically significant and aligns with economic theory, as economic agents tend to adopt a backward-looking approach when forming their expectations.[4]
- **is driven by Portugal's food inflation.** A one-percentage point increase in Portugal's food inflation correlates with a 0.76-percentage point rise in end-of-period inflation in São Tomé and Príncipe, a result that is statistically significant and aligns with economic theory, considering the peg to the Euro and the strong trade relationship with Portugal. Additionally, a one-percentage point increase in the one-lagged end-of-period Portugal's food inflation raises end-of-period inflation in São Tomé and Príncipe by 0.17 percentage point; however, this coefficient is not statistically significant.
- **is impacted by national elections**. In São Tomé and Príncipe, elections typically lead to increased fiscal spending, often accompanied by monetary financing and a general lack of macroeconomic discipline during these periods. Our analysis indicates that elections result in a 2.37-percentage point rise in end-of-period inflation during the election year, and this coefficient is statistically significant.

[4] This observation is consistent with empirical research conducted for developing countries (see Loungani and Swagel, 2001) and can be attributed to the fixed exchange rate regime coupled with structural supply-side constraints.

- **is affected by the effects of global crises.** The model indicates that a global crisis would result in an increase of 3.17 percentage points in end-of-period inflation for São Tomé and Príncipe. This finding is statistically significant and aligns with economic theory, considering the country's vulnerability to supply chain disruptions typically associated with global or regional crises.
- **is influenced by the business cycle.** An increase of one percentage point in the lagged GDP growth results in a 0.45-percentage point rise in end-of-period inflation in São Tomé and Príncipe. This finding aligns with economic theory and empirical studies[5] and the coefficient is statistically significant.
- **is impacted by the pegged exchange rate regime**. Our findings indicate that the implementation of the pegged regime contributed to a 4.01-percentage point slowdown in end-of-period inflation, and this coefficient is statistically significant.
- **is influenced by domestic fuel price adjustment.** An increase of one percentage point in domestic fuel price results in a 0.06-percentage point rise in end-of-period inflation in São Tomé and Príncipe. While this finding aligns with economic theory and empirical studies, the coefficient is not statistically significant. We retained this variable in the model to account for supply-side shocks.

Table 1. São Tomé and Príncipe: Model Results

	Description	*Results*	
		Coeff.	P value
π_{t-1}	Lagged end-of-period inflation	0.485	0.0001
$imp.inf_t$	End-of-period Portugal food inflation	0.761	0.0005
$imp.inf_{t-1}$	Lagged end-of-period Portugal food inflation	0.167	0.2433
$cycle_{t-1}$	Lagged Real GDP growth	0.454	0.0490
$fuel_t$	STP fuel price change	0.063	1.1766
$D1_t$	Dummy – elections	2.365	0.0480
$D2_t$	Dummy – global crises	3.172	0.0317
$D3_t$	Dummy – pegged regime	-4.014	0.0176
c		3.766	0.1125
R^2		0.964835	
Adjusted R^2		0.941392	
Observations		21	

[5] See Peiris and Barnichon (2007).

E. Model Evaluation and Forecasting Inflation

16. The model appears well-suited for forecasting inflation in São Tomé and Príncipe. It has undergone tests for autocorrelation, heteroscedasticity, and normality. The Breusch–Godfrey LM test shows no serial correlation, the Breusch-Pagan-Godfrey test confirms constant error variance, and the residuals are normally distributed according to the Jarque-Bera statistic (Table 2). Additionally, the Variance Inflation Factors (VIF) test indicates relatively low correlation among the independent variables (Table 3).

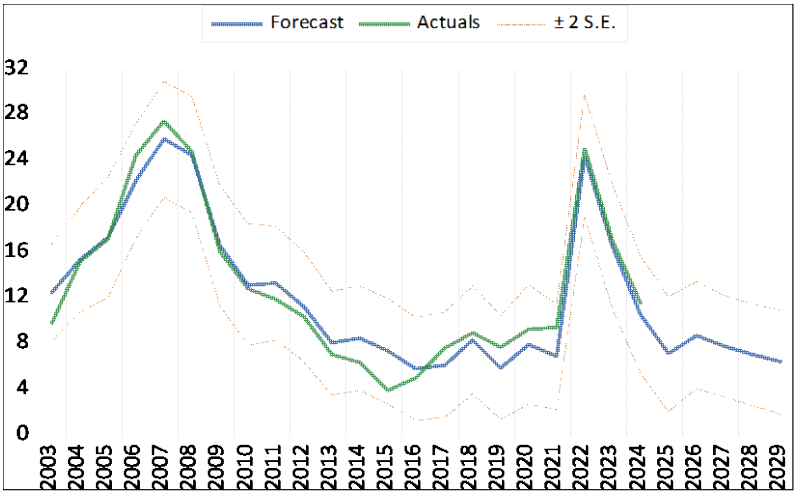
Table 2. São Tomé and Príncipe: Model Residual Evaluation

Breusch-Godfrey Serial Correlation LM Test:		
Null hypothesis: No serial correlation at up to 2 lags		
F-statistic	Prob. F(2,10)	0.8262
Obs*R-squared	Prob. Chi-Square(2)	0.6747
Heteroskedasticity Test: Breusch-Pagan-Godfrey		
Null hypothesis: Homoskedasticity		
F-statistic	Prob. F(8,12)	0.4022
Obs*R-squared	Prob. Chi-Square(8)	0.3351
Scaled explained SS	Prob. Chi-Square(8)	0.9699
Normality Test:		
Jarque-Bera		0.331581
Probability		0.847224

Table 3. São Tomé and Príncipe: Multicollinearity Evaluation

	Coefficient	**Uncentered**	**Centered**
Variable	**Variance**	**VIF**	**VIF**
π_{t-1}	0.01	11.88	2.68
$imp.inf_t$	0.03	3.58	2.58
$imp.inf_{t-1}$	0.02	2.59	1.87
GDP_{t-1}	0.04	7.08	1.50
ICRISIS	1.70	2.29	1.85
ELECTION	1.15	1.94	1.47
PEG	2.13	10.00	3.33
FUEL	0.00	3.60	2.20
C	4.84	34.06	NA

Figure 3. São Tomé and Príncipe: Pseudo Out of Sample Forecast–End-of-Period Inflation (2003–29)



Forecast:	INFLEOP_F
Actual:	INFLEOP
Forecast sample:	1998-2029
Adjusted sample:	2003-2029
Included observations:	27
Root Mean Squared Error	1.538
Mean Absolute Error	1.258
Mean Absolute Percentage Error	14.810
Theil Inequality Coef.	0.052
Bias Proportion	0.000
Variance Proportion	0.094
Covariance Proportion	0.905
Theil U2 Coefficient	0.405
Symmetric MAPE	13.631

Source: INE and staff calculations and estimations.

17. The model predicts a gradual decline in inflation in São Tomé and Príncipe over the medium term (Figure 3). It has demonstrated reasonably good performance in pseudo out-of-sample forecasts, achieving notable accuracy over the past 15 years. This is further supported by the Theil U2 coefficient, which indicates low bias and variance. Based on the model's projections, end-of-period inflation is expected to decline to 7.7 percent in 2025. It is anticipated to rise slightly to 9.1 percent in 2026 due to the national elections, before gradually declining to 6.5 percent by 2029, assuming all other factors remain constant.

F. Conclusion and Policy Recommendations

18. Our empirical results indicate that both supply and demand factors play a significant role in driving inflation in São Tomé and Príncipe. Several key influencers have been identified, including inflation inertia, which occurs when past increases in inflation serve as a critical proxy for inflation expectations among consumers and businesses, leading to a self-perpetuating cycle where high inflation fuels future inflation. Additionally, import food prices proxied by Portugal's food inflation significantly impact inflation in São Tomé and Príncipe. Global and regional crises also exacerbate inflationary pressures in São Tomé and Príncipe, as economic disruptions lead to supply chain interruptions, increased commodity prices, and reduced availability of essential goods. Furthermore, weakened macroeconomic discipline during domestic elections in São Tomé and Príncipe has been identified as a substantial driver of inflation. As a result of these factors, inflation in São Tomé and Príncipe has risen substantially in recent years, despite the stability provided by the country's pegged exchange rate regime.

19. To effectively reduce and control inflation in São Tomé and Príncipe, a comprehensive policy mix must be implemented that addresses both supply and demand factors. By implementing these strategies, São Tomé and Príncipe can work towards stabilizing prices, reducing inflationary pressures, and fostering a more resilient economy.

- On the demand side, it is essential to maintain coherent macroeconomic policies that include ongoing fiscal consolidation and managing public debt levels to create a more stable economic environment. Prudent monetary policy and liquidity management is also crucial; by carefully managing liquidity in the economy and raising interest rates, authorities can alleviate local demand pressures.
- On the supply side, increasing local food production is vital for reducing reliance on imported food. This can be achieved through various initiatives, such as improving the processing of primary agricultural products to add value and reduce waste, thereby making local food more competitive against imports. Additionally, infrastructure development, including the construction of greenhouses and other agricultural facilities, can enable year-round production and improve yields. Promoting sustainable agricultural practices will not only increase food production but also contribute to environmental conservation and resilience against climate change.

References

Aisen, A., Manguinhane, E., and Simone, F. (2021). *An Empirical Assessment of the Exchange rate Pass-through in Mozambique*. IMF Working Paper 21/132.

Craigwell, R., Greenidge, K., and Maynard, T. (2007). *Exchange Rate Regimes and Monetary Autonomy: Empirical Evidence from Selected Caribbean countries*. Central Bank of Barbados.

Gautier E., Lalliard A. (2013). *How do VAT Changes Affect Inflation in France?* Banque de France Bulletin, Q4.

Jasova, M., Moessner, R., and Takats, E. (2016), *Exchange Rate Pass-through: What Has Changed Since the Crisis?* BIS Working Paper No. 538.

Karam, M. P. D., Vlcek, M. J., and Guo, M. S. (2019). *Decomposing the Inflation Dynamics in the Philippines* (No. 2019/153). International Monetary Fund.

Lanau, M. S., Robles, A., and Toscani, M. F. G. (2018). *Explaining Inflation in Colombia: A Disaggregated Phillips Curve Approach*. International Monetary Fund.

Loungani, P., and Swagel, P. (2001). *Sources of Inflation in Developing Countries*. International Monetary Fund.

Moriyama, K., and Naseer, A. (2009). Forecasting inflation in Sudan. International Monetary Fund.

Nguyen, A. D., Dridi, M. J., Unsal, M. F., and Williams, M. O. (2015). *On the Drivers of Inflation in Sub-Saharan Africa*. International Monetary Fund.

Peiris, M. S. J., and Barnichon, R. (2007). *Sources of Inflation in Sub-Saharan Africa (No. 2007/032)*. International Monetary Fund.

Stocker, M., Ha, J., and Yilmazkuday, H. (2019). *Currency Depreciations, Inflation and Central Bank Independence*. World Bank Global Economic Prospects, Special Focus 1.2.

Wang, J., Ronci, M., Farhan, N., Takebe, M., and Shanghavi, A. (2008). *The Choice of Monetary and Exchange Rate Arrangements for a Small Open, Low-Income Economy: The Case of Sao Tome and Principe"*, IMF Working Paper 08/11