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Understanding and Forecasting Inflation in Timor-Leste

Kohei Asao and Raju Huidrom

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Understanding and Forecasting Inflation in Timor-Leste
Prepared by Kohei Asao and Raju Huidrom*

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ABSTRACT: This paper presents a comprehensive analysis of inflation in Timor-Leste—a post-conflict, low-income economy and small developing state that is fully dollarized. We find that Timorese inflation was high until about mid-2010 and was strongly influenced by swings in global food prices given its high share of food in the CPI basket and heavy reliance on food imports. But inflation has been relatively low and stable in the past decade relative to peers—a period that also broadly coincided with moderate global food prices. We develop an empirical model for Timorese inflation that distills the role of these underlying drivers, and which can be deployed for forecasting inflation.

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WORKING PAPERS

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1. Introduction

Timor-Leste is a Southeast Asian economy with a unique combination of structural characteristics. With a GDP-per-capita of \$1,475 in 2025, it is classified as a low-income country (LIC) and is among the countries eligible for the IMF's concessional Poverty Reduction and Growth Trust Fund (PRGT). Timor-Leste is also characterized as a small developing state (SDS)—with a population of 1.4 million—as well as a fragile conflict-affected state (FCS).¹ The economy relies heavily on imports, particularly food, including the country's staple rice. Until recently, Timor-Leste was an oil exporter with the proceeds placed into a sovereign Petroleum Fund (PF), resulting in a net foreign asset position that is among the highest in the world as a share of the domestic economy and an outlier among countries at similar levels of per-capita income (Carrière-Swallow and Huidrom 2025).²

The Timorese economy is heavily dependent on the public sector, with public spending averaging around 80 percent of non-oil GDP in the last decade. This generates large fiscal deficits—and external imbalances—much of which are financed by withdrawals from the PF. While these large fiscal deficits and withdrawals from the PF have generally not succeeded in delivering strong growth outcomes in view of low-efficiency public spending, Timor-Leste has maintained relative macroeconomic stability in the last decade. Unlike the experience of many oil-exporting emerging and developing economies (EMDE), Timorese fiscal policy has not systematically reacted procyclically to oil price fluctuations, thanks to its fiscal rule.³ This setup limits the impact of commodity price fluctuations on fiscal financing and, in turn, on activity in Timor-Leste (Huidrom and Smirnov 2024). Timor-Leste is a fully-dollarized economy having exclusively used the US dollar for more than two decades, which also implies that the country has no independent monetary policy.

Against this backdrop, this paper presents a systemic analysis of Timorese inflation and its key drivers. In particular, we distill the role of the Timorese economy's structural characteristics and macroeconomic management for inflation dynamics, thereby providing new evidence with broader implications for other economies with similar features. Previous studies (IMF 2008, 2012) have recognized that Timorese inflation is influenced primarily by global food prices and, to a lesser extent, domestic demand. However, a systematic account of the drivers of inflation has been lacking. Previous studies fall short of providing a comprehensive assessment of the evolution of Timorese inflation since its independence in 2002, and how it compares with peer countries. More importantly, an econometric analysis that systematically links inflation to its underlying drivers is missing. The goal of this paper is to fill these gaps.

Our paper relates to several strands of existing literature on inflation dynamics. Relative to advanced economies (AE), inflation in LICs tends to be high and volatile, driven by external shocks (Ha and others 2019). External factors such as global (non-fuel) commodity prices, transport costs, and oil prices explain most of the inflation dynamics in Guinea—a LIC-FCS with an autonomous monetary policy and a large share of food in the CPI basket (Carrière-Swallow and others 2025). Durevall and others (2013) report a similar finding for Ethiopia,

¹ Based on a GNI per capita in current USD (Atlas method) of \$1,560 in 2024, the World Bank classifies Timor-Leste as a lower middle-income. In this paper, we characterize Timor-Leste as a LIC which serves as easy reference to the literature. For details, see "Country Engagement Strategy" Annex I in IMF (2024a).

² Oil and gas production from the Bayu-Undan offshore field, which began operations around mid-2000s, ceased in 2025.

³ According to Timor-Leste's fiscal rule, the annual withdrawal is based on an Estimated Sustainable Income (ESI)—3 percent of total petroleum wealth (sum of the PF balance and the net present value of expected future petroleum revenue). Withdrawals in excess of the ESI can be made only with the approval of Parliament.

with global food prices a key factor for inflation dynamics. More broadly, Rother and others (2023) estimate that the pass-through from global to domestic consumer food prices is higher for LIC and FCS because of their larger dependency on food imports. Global shipping costs, by driving variability in import prices, tend to have a pronounced impact on domestic inflation in small-island economies that rely heavily on imported goods (Carrière-Swallow and others 2023).

The exchange rate pass-through to domestic inflation is also an important driver of inflation in many LIC, such as Mali (Diouf 2007), Chad (Kinda 2013), Ethiopia (Durevall and others 2013), and Guinea (Carrière-Swallow and others 2025). Ha and others (2019) find exchange rate pass-through to inflation to be larger for LICs relative to AEs and other EMDEs. Together with global commodity prices, these attest to the prominent role of external shocks for inflation dynamics in LICs.

Dollarization has important implications for inflation as well. While dollarization limits the ability of central banks to implement independent monetary policies, it helps stabilize prices and reduce inflationary pressures by using the nominal anchor of a credible foreign currency. The meta-analysis in Koráb, Fidrmuc, and Dibooglu (2023) suggests that dollarized economies tend to exhibit lower inflation than non-dollarized economies. Relatedly, LICs that fix their exchange rate seem to succeed in stabilizing core inflation relative to LICs with floating exchange rates (Ha and others 2019).

Finally, macroeconomic management in a context of fragility is also an important driver of inflation. Fragility tends to increase the strength and frequency of domestic shocks, which, in turn, complicates the monetary policy's mandate to deliver price stability (Carrière-Swallow and others 2025). Boussard and others (2024) find that FCS exhibit heightened sensitivity to external shocks, primarily due to procyclical fiscal responses and limited access to external financing. Kinda (2013) highlights that public spending has a significant impact on inflation through demand pressures on non-tradables in Chad—an FCS where public expenditure surged following a substantial increase in oil production and oil revenues.

In this paper, we compile a long time series of inflation in Timor-Leste which we use to present a comprehensive assessment of how inflation has evolved in the country since its independence. Combining with a cross-country dataset, we benchmark the performance of Timorese inflation against peer country groups. We then perform a model-based empirical analysis to distill the drivers of Timorese inflation. Specifically, we estimate a Phillips curve specification in which inflation is driven by external factors—such as global food and rice prices—as well as domestic factors, including public spending and tax changes. We finally assess the model's forecasting performance.

Our main findings are as follows. Inflation in Timor-Leste was high until about mid-2010 and was strongly influenced by swings in global food prices, but has been more moderate in the past decade (except during the pandemic when inflation surged as in many other countries). The Phillips curve analysis corroborates that inflation in Timor-Leste is strongly underpinned by global commodity prices, especially global rice prices. Regarding domestic factors, public spending has not had a meaningful impact on inflation dynamics in the last decade, but recent tax changes are consequential. Taken together, inflation dynamics in Timor-Leste share those of many LICs with a large share of food in the CPI basket. Its relatively low and stable inflation performance in the last decade coincided with a period of moderating global food prices. Based on the cross-country evidence documented in the literature, Timor-Leste's relative macroeconomic stability—in the context of post-conflict fragility—and dollarized regime may also be playing a helpful role in this regard.

The Phillips curve model performs reasonably well in out-of-sample forecasts of Timorese inflation. With the expected moderation of global commodity prices, the model predicts inflation to further ease in the near term. The companion computer codes, data, and forecasting routines are compiled in a user-friendly forecasting toolkit, which are available upon request. The forecasting toolkit should be handy for policymakers in projecting Timorese inflation and is another key contribution of the paper.

The rest of the paper is organized as follows. Section 2 describes the data and stylized facts; Section 3 outlines the empirical methodology; Section 4 discusses estimation results; Section 5 provides model-based forecasts; and Section 6 concludes.

2. Data and Stylized Facts on Timorese Inflation

We compile a long time series for Timorese inflation which allows us to assess its historical evolution as well as benchmark its inflation performance against peer country groups. For this, we source monthly CPI data from the World Bank's [Global Database of Inflation](#) and IMF's *World Economic Outlook* (WEO) database. While the Timorese national statistical office reports CPI data from December 2012 onward, the World Bank database provides a longer series starting from December 2001. We then splice these series to construct a longer inflation time series for Timor-Leste, spanning December 2001 to December 2024. For the stylized facts, inflation is defined as year-over-year growth rate of the headline CPI.

For the benchmarking exercises, inflation data for the peer countries are sourced from the respective authorities' official statistics.⁴ Peer country groups are categorized following IMF classification. Specifically, EMDEs are defined based on the *World Economic Outlook* (WEO) classification; LICs based on [the list of PRGT-eligible countries](#); SDSs based on [IMF \(2024\)](#); FCSs based on [the IMF's FCS list](#); and countries with fixed exchange rate regimes—such as those that are dollarized, under a currency board, or pegged to other currencies—are identified using [the Annual Report on Exchange Arrangements and Exchange Restrictions \(AREAER\)](#).⁵ In October 2025, Timor-Leste joined the ASEAN which naturally lends ASEAN as a peer group.

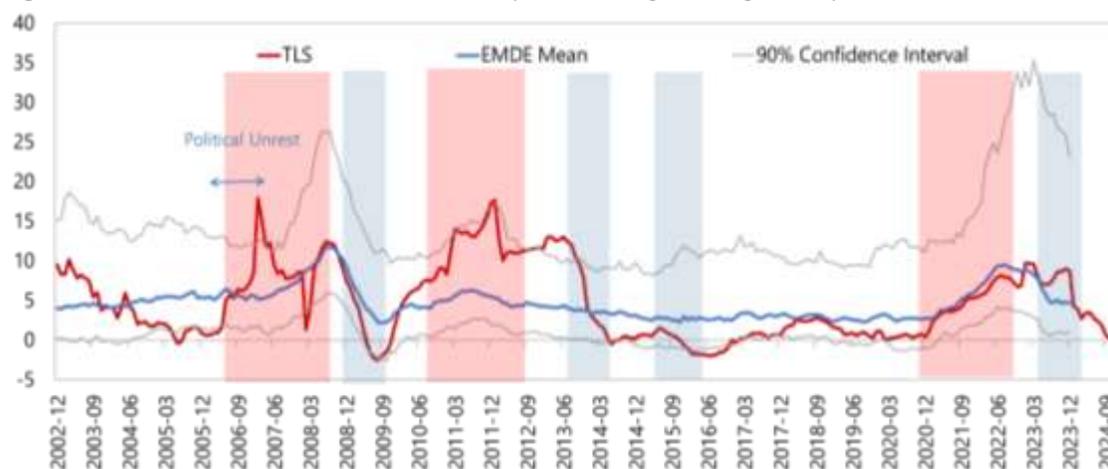
Historical Evolution of Timorese Inflation

Timor-Leste has experienced inflation of varying strength and volatility since its independence, with inflation dynamics having gone through distinct phases. These include a sharp spike during 2006–07 associated with political unrest and food shortages, heightened volatility through the early 2010s amid rising global food prices and domestic demand pressures, a prolonged period of low and stable inflation from 2014 to 2020, and renewed inflationary pressures starting in 2021 along with global shocks and domestic tax policy changes. We elaborate on these phases below.

⁴ We obtain these data from the IMF's Information Notice System (INS), which provides monthly inflation data for 197 countries.

⁵ The IMF's FCS list has been in place since 2022. For the sample period prior to that, the starting year of FCS status is adjusted based on the [World Bank's FCS classification](#).

Figure 1. Headline Inflation in Timor-Leste (In Percentage Change, YoY)



Sources: IMF Staff Calculations.

Notes: Red and blue areas mark periods of +10% or -10% in the FAO Cereal Price Index (YoY) lasting over six months. The 90% confidence interval refers to the cross-sectional band across the EMDE sample.

Following its independence in 2002, Timorese inflation steadily declined from 7.2 percent in 2003 to 1.1 percent in 2005. However, political unrest that began in mid-2006 triggered mass internal displacement, disrupted supply chains, and damaged infrastructure, contributing to severe food shortages. These shocks led to large spikes in headline inflation driven by a surge in food inflation which increased by more than 5 percent month-on-month in mid-2006 (IMF 2008). In addition, the surge in global food prices in 2007 added to this inflationary pressure, with inflation reaching 10.3 percent annually in 2007 (IMF 2008).

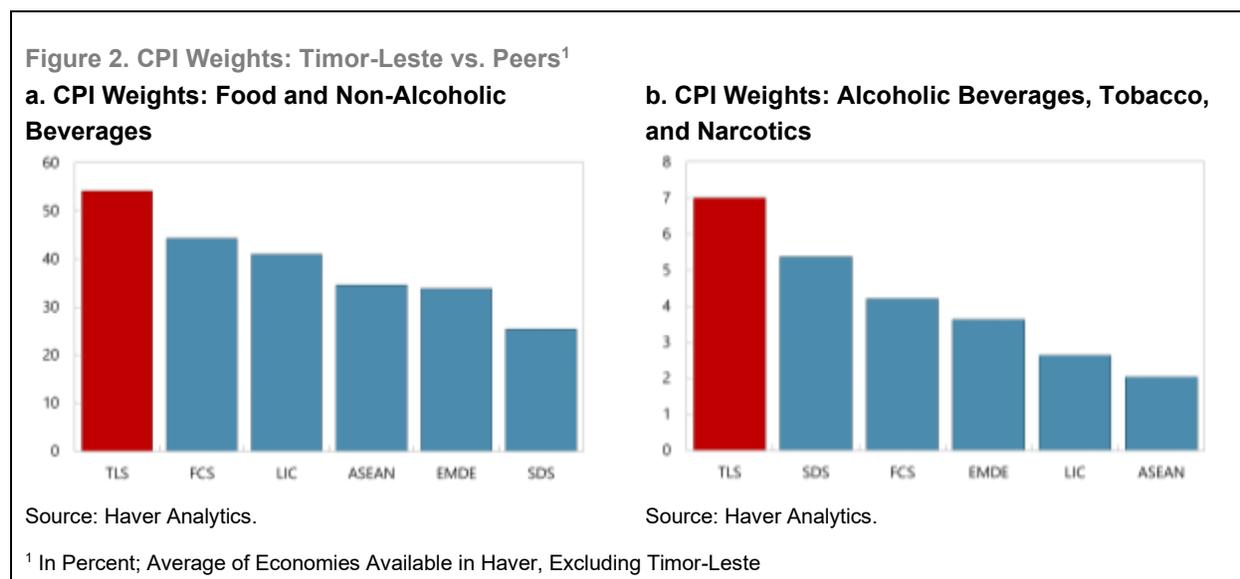
The second phase during 2008-2013 was characterized by heightened inflation volatility. During this episode, headline inflation ranged from a trough of -2.5 percent in August 2009 to a peak of 17.7 percent in January 2012. After an initial easing, inflation rose during 2011-12 driven by a renewed surge in global food prices and strong domestic demand (IMF 2012). In the context of a small and under-diversified non-oil economy, a rapid rise in government spending likely fueled demand pressures, thereby contributing to the surge in inflation during this period. For instance, government spending, as share of non-oil GDP, more than doubled from around 46 percent in 2007 to more than 100 percent by 2012, staying at high levels thereafter.

The third phase spans from 2014 to 2019 during which inflation remained low and stable amid favorable external conditions. Inflation averaged 0.6 percent during this period, along with subdued global commodity prices and relative macroeconomic stability. Despite the 2015-16 El Niño drought, which severely affected agricultural production, and political instability surrounding the 2017 parliamentary elections, inflationary pressures remained muted during this period.

Inflation surged from around 2020 onwards, as seen in most other countries, reaching 9.8 percent in January 2023 and easing substantially in 2024. The surge reflects a combination of supply chain disruptions related to the pandemic, global price shocks, and domestic tax changes—the latter include the hike in excise tax on tobacco in 2022 and the introduction of new import and excise duties in 2023. These tax measures were later reversed by the new government that took office in the summer of 2023 which, in turn, contributed to the

subsequent easing of inflation in 2024 as the base effects are unwound.⁶ The easing of inflation since 2024 has also been supported by stabilization of supply chains and moderation of global food prices (IMF 2024), in particular, the price of imported rice—a staple food in Timor-Leste, which is largely imported.

In sum, inflation in Timor-Leste was high until about mid-2010s, which then remained moderate for a prolonged period until it surged around 2020. These dynamics were strongly influenced by swings in global food prices—in particular, rice prices—since food accounts for 54 percent of the economy’s CPI basket and 60 percent of food is imported. In fact, the share of food in Timor-Leste’s CPI basket is one of the highest in the world, exceeding the average in peer groups: FCS (45 percent), LIC (41 percent), ASEAN (37 percent), EMDE (34 percent), and SDS (26 percent). Within the food category, the weight of rice is 17 percent—the highest among countries for which rice weights are available. The CPI weight for Alcoholic Beverages, Tobacco, and Narcotics is 7 percent, also higher than the those in peer groups. Aside from global food prices, factors such as political unrest, public spending, and policy changes have also been associated with the inflation dynamics in Timor-Leste.



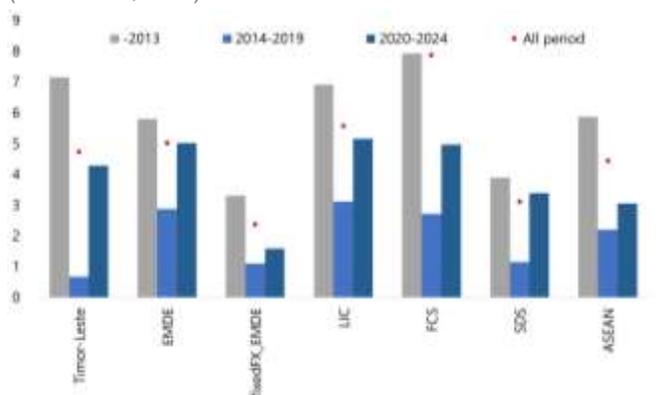
Benchmarking Against Peer Country Groups

We now assess the performance of Timorese inflation both in terms of its level and volatility. For this, we benchmark Timor-Leste against different peer country groups: EMDE, EMDE with fixed exchange rates, LIC, FCS, SDS, ASEAN. We compute the average level and volatility of inflation over the last two decades (full sample) and also over sub-samples reflecting the varying dynamics of Timorese inflation as discussed above.

⁶ In 2022, the government raised the excise tax on tobacco (which represent 7 percent of the CPI basket) from US\$19/kg to US\$50/kg. In early 2023, the government raised the tax on tobacco significantly again (US\$50/kg to US\$100/kg), and introduced a higher tax on sugary beverages, along with increased import duties. The new government formed in September 2023 reversed several of the tax hikes in phases, including those on tobacco and sugary beverages.

Starting with the level of inflation, headline inflation in Timor-Leste averaged 4.7 percent over the last two decades. This is lower than the average of FCS (7.9 percent) and LIC (5.6 percent), many of which did not succeed in avoiding episodes of economic turmoil. Timor-Leste’s overall performance is broadly in line with EMDEs (5.0 percent) and ASEAN economies (4.4 percent), though it is higher than EMDEs with fixed exchange rate regimes (2.4 percent) and SDS (3.1 percent). The relatively low inflation in Timor-Leste over the full period is largely driven by the low levels during 2014-2019—a period that also coincides with moderate global food prices. During this sub-period, Timorese inflation was even lower than those in EMDEs with fixed exchange rate regimes and SDS (some 60 percent of SDS are under fixed exchange rate regimes).

Figure 3. Headline Inflation: Timor-Leste vs. Peers¹
(In Percent, YoY)

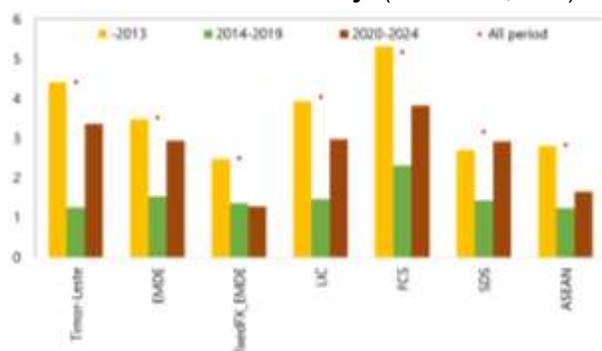


Source: IMF Staff calculations.
¹ Median across countries in each group.

The volatility of headline inflation over the full sample period has been somewhat higher than peers, only exceeded by FCS. This was mainly driven by the high volatility in the first decade since independence, when the volatility of headline inflation exceeded that of import prices as well. However, in the past decade, volatility has fallen considerably and has tracked more closely the experience of peer countries. In the pre-COVID-19 period, the volatility of inflation was comparable between Timor-Leste and EMDEs with fixed exchange rates. In sum, under dollarization, Timor-Leste has achieved relatively low and stable inflation in the last decade. Put differently, the evidence from Timor-Leste supports the finding that high inflation tends to be more variable inflation that is widely documented in the literature.

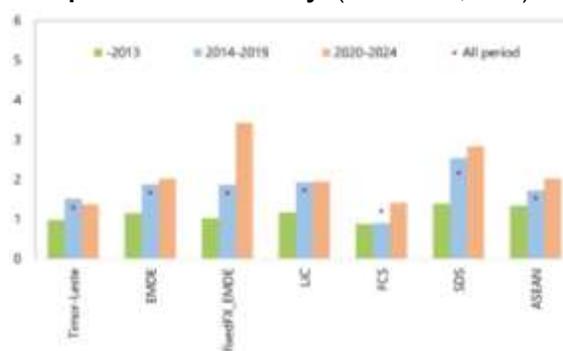
Figure 4. Headline Inflation and Import Price Volatility: Timor-Leste vs. Peers

a. Headline Inflation: Volatility¹ (In Percent, YoY)



Source: IMF Staff calculations.
¹ Standard deviation of inflation.

b. Import Prices: Volatility¹ (In Percent, YoY)



Source: IMF Staff calculations.
¹ Standard deviation of import prices weighted by the exports shares in the GDP.

3. Empirical Model

We employ a Phillips Curve framework to analyze the drivers of inflation in Timor-Leste. The analysis is conducted at the monthly frequency, regressing headline inflation on a set of explanatory variables that are well grounded in the literature. In this setup, we use government spending as a proxy of aggregate demand as high-frequency data on activity and labor market—traditionally used to measure slack—are not available. Government spending is a reasonable proxy for Timor-Leste as it accounts for around 80 percent of its non-oil GDP, and tends to move closely with non-oil GDP at the annual frequency (IMF 2024). In addition to government spending, the choice of explanatory variables is also motivated by the stylized facts for Timor-Leste (Section 2), and includes the following domestic and external variables: (i) lagged inflation to capture inflation persistence and backward-looking price-setting behavior; (ii) global food prices specified in US dollar; (iii) global rice prices specified in US dollar; (iv) inflation in Indonesia. We keep the baseline specification quite parsimonious, while exploring additional explanatory variables in the robustness exercises.

Formally, the Phillips Curve model is specified as follows:

$$Y_t = \alpha + \beta X_{t-1} + \gamma X_{t-2} + \varepsilon_t ,$$

where Y represents headline inflation defined as the month-on-month growth of the headline CPI index. The vector X denotes the set of explanatory variables as described above, which are also expressed in month-on-month growth rates. The estimation uses two lags of each explanatory variable, selected based on the Akaike Information Criterion. We also include dummy variables in the regression to control for the impact of one-off tax changes: the increase in excise tax on tobacco in 2022, the introduction of new import and excise duties in 2023, and the reversal of these measures in 2024 (Section 2).

For robustness, we consider a range of alternative specifications. First, we include additional explanatory variables in the regression: (i) the nominal effective exchange rate (NEER); (ii) global oil prices and shipping costs given their relevance for inflation in small island states (Carrière-Swallow and others 2023); (iii) US policy rate, as consumption behavior and exchange rates in a dollarized economy like Timor-Leste may be influenced by changes in US monetary policy; and (iv) rainfall (monthly average data for the economy) to account for supply-side constraints, with several studies showing its significant influence on inflation in LICs and FCSs (Diouf 2007; Kinda 2013). Second, we perform a disaggregated analysis using food and non-food CPI inflation as dependent variables. Third, we estimate the model at the quarterly frequency.

The baseline model is estimated using monthly data from December 2012 to December 2024. The start of the estimation period is chosen to avoid the high volatility in the 2000s and related measurement and composition issues. All variables are seasonally adjusted except for the US policy rate. Details of the variables are presented in Annex I.

4. Empirical Results

We first discuss the regression coefficients which show the average relationship between headline inflation and the explanatory variables over the estimation period. We then discuss the historical decomposition which

shows the contribution of these explanatory variables to inflation at a given point in time, and finally the robustness exercises.

Regression Coefficients

We present the estimated coefficients in the baseline model—as well as across a range of alternative model specifications—in Table 1. The estimated coefficient on lagged headline inflation is positive and statistically significant. The magnitude of the coefficient suggests strong persistence of Timor-Leste’s inflation, possibly reflecting adaptive expectations for price formation. Since the Phillips Curve model is estimated only for Timor-Leste, it is difficult to put in perspective how the estimated persistence compares with peer groups. That said, we estimate a simpler AR(1) model of headline inflation for a broader set of countries, which suggests that persistence of inflation is somewhat lower in Timor-Leste than peers.⁷

Regarding external factors, the estimated coefficient on global food price inflation is positive and statistically significant. In addition, the coefficient on rice price inflation is positive and statistically significant, which reiterates the important role rice price plays for inflation dynamics in Timor-Leste. The coefficient on Indonesia’s inflation is positive and statistically significant, plausibly reflecting Indonesia’s large share (35 percent) in Timor-Leste’s imports.

Government spending—as a proxy for domestic demand—is positively associated with inflation. That said, the estimated coefficient is small which suggests a limited role for aggregate demand in explaining inflation during the sample period (2012-24). The level of government spending remained consistently high during 2012-24; but, in terms of dynamics, this period did not experience a similar ramp-up in government spending as during 2007-12 (Section 2), which otherwise could have fueled demand-induced inflationary pressures.

The tax changes during 2022-24 exhibit the correct signs: a positive relationship with inflation with higher taxes, and negative when unwound. As discussed below, these one-off tax changes had an economically significant impact on inflation in recent years. This likely reflects the relatively large weight of items covered by these taxes in the CPI basket.

All in all, our results present some evidence that inflation dynamics in Timor-Leste conform to a Phillips curve framework. More importantly, they underscore the fact that global food prices are a significant driver of inflation in Timor-Leste—a finding consistent for LICs in general. Our headline results are robust across alternative model specifications as well.

⁷ We estimate an AR(1) regression of headline CPI month-on-month inflation using the World Bank inflation database over the period 2013–2024. The estimated AR(1) coefficient for Timor-Leste is 0.33, which is somewhat lower than 0.49 for the average LIC and 0.35 for SDS. Section C compares quarter-on-quarter results with the existing literature.

Table 1. Phillips Curve Model Estimates

Model	(1)	(2)	(3)	(4)	(5)	(6)
	Baseline		Headline Inflation			
Variables (mom, percent)						
Headline CPI, lag 1	0.166***	0.166***	0.257**	0.162***	0.158***	0.158***
Headline CPI, lag 2	0.293***	0.291***	0.187*	0.289***	0.291***	0.289***
Global food inflation, lag 1	0.024**	0.026**	0.008	0.024**	0.019*	0.021*
Global food inflation, lag 2	0.014	0.011	-0.022	0.012	0.011	0.009
Global rice inflation, lag 1	0.013**	0.013**	0.009	0.013**	0.014**	0.014**
Global rice inflation, lag 2	0.007	0.007	-0.000	0.007	0.008	0.007
Public expenditure, lag 1	0.000*	0.000*	0.000	0.000*	0.000*	0.000*
Public expenditure, lag 1	0.000	0.000	-0.000	0.000	0.000	0.000
Dummy for 2022 tax hike	0.337	0.343		0.345	0.370	0.372
Dummy for 2023 tax hike	3.142***	3.148***		3.134***	3.153***	3.164***
Dummy for 2024 tax cut	-1.029***	-1.042***		-1.026***	-1.032***	-1.045***
Indonesia inflation, lag 1	0.110*	0.099	0.131*	0.105*	0.104*	0.086
Indonesia inflation, lag 2	-0.028	-0.013	0.040	-0.030	-0.014	0.003
NEER, lag 1		0.010	-0.018			0.014
NEER, lag 2		-0.013	-0.042*			-0.014
US policy rate, lag 1				0.000		
US policy rate, lag 2				0.000		
Global shipping cost, lag 1					0.000	0.000
Global shipping cost, lag 2					0.000	0.000
Global oil price, lag 1					0.002	0.002
Global oil price, lag 2					0.001	0.001
Rainfall, lag 1					0.000	0.000
Rainfall, lag 2					-0.000	-0.000
Constant	0.042	0.042	-0.012	0.042	0.037	0.038
Observations	142	142	85	142	142	142
R-squared	0.690	0.691	0.278	0.691	0.696	0.698
Adj. R-squared	0.658	0.655	0.158	0.654	0.648	0.645

Source: IMF staff estimates.

Note: *** p<0.01, ** p<0.05, * p<0.1. Model 3 is estimated using pre-Covid sample period.

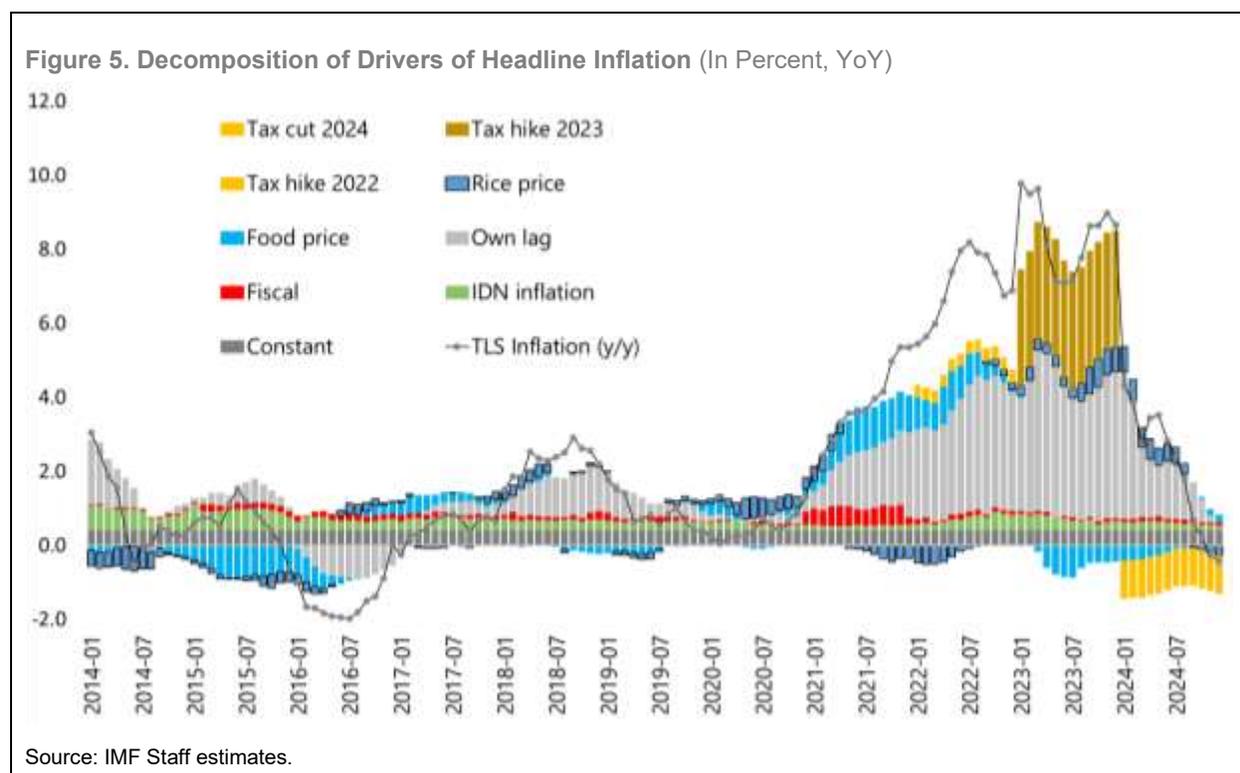
Historical Decomposition

In this exercise, we multiply the explanatory variables by the respective estimated coefficients to gauge their contribution to headline inflation at a given time period. We use the estimates from the baseline model and focus the discussion on inflation dynamics in recent years.

Food price inflation contributed positively to the surge in inflation in 2021 and 2022 as global food price inflation increased. But as the latter moderated, those effects were unwound starting early 2023. That said, rice price

inflation—which remained elevated diverging from food price inflation in general—continued to put some upward pressure on inflation. The contribution of Indonesia’s inflation was small in recent years.

Public spending growth contributed little to inflation dynamics in recent periods, reflecting the small size of the estimated coefficient. The one-time tax hike in January 2023 had an immediate impact on inflation (m/m), keeping inflation elevated throughout 2023 on a year-on-year basis. But these base effects were fully unwound in 2024, leading to significantly lower inflation (y/y) in 2024. Thus, tax measures—along with food price inflation—were important drivers of Timorese inflation in recent years.⁸



Robustness Checks

Additional explanatory variables. The relative strength of the US dollar in nominal terms—measured by the NEER—does not appear to have an economically meaningful effect on inflation dynamics, with the corresponding coefficient either showing the incorrect sign or is statistically insignificant (Table 1). This is likely because the regression already includes global food and rice price inflation which are already specified in US dollar. The NEER in the regression should be only picking up the residual effects of imports other than food and rice, which also must be specified in currencies other than US dollar (in the context of a fully dollarized Timorese economy). Given the dominant role of food and, more specifically, rice for headline inflation in Timor-Leste (Section 2), it is unsurprising that the model does not find such residual effects to be robust. That said, the coefficients before NEER are statistically significant with the expected sign for non-food inflation (estimated during pre-COVID sample period), which corroborates the expected pass-through of exchange rate to inflation (Annex II, Table 1).

⁸ The persistence term had a sizable positive contribution to the inflation surge during 2021-23.

Other variables included in the robustness checks—such as the US policy rate, rainfall, oil prices, and global shipping costs—are largely statistically insignificant. The insignificance of the US policy rate likely reflects the fact that rates offered by local banks on deposits and loans exhibit very low correlations with US interest rates given that deposit and lending practices in Timor-Leste are constrained by domestic structural bottlenecks and the severely underdeveloped capital markets (Huidrom and Smirnov 2024). Regarding oil prices, their effects may already be captured in global food prices as oil and food prices tend to comove. The statistical insignificance of global shipping prices may be reflecting the fact that Timor-Leste—with China and ASEAN countries as its major trade partners (IMF 2025)—is relatively close to its main trade partners compared with many small-island economies that tend to be geographically more remote. The statistical insignificance of rainfall likely reflects the country’s heavy reliance on food imports, which leaves a less significant role for domestic food production.⁹

Disaggregated analysis of inflation. Here, we extend the analysis beyond headline inflation and estimate the Phillips Curve specification separately for food and non-food inflation.¹⁰ We retain the set of explanatory variables as in the baseline specification, except for the lag term where we use the respective dependent variable. Results are presented in Annex II, Table 1.

The lagged terms are positive and statistically significant for both food and non-food inflation; thus, inflation remains persistent even at the disaggregated level. Not surprisingly, global food price and, in particular, global rice price inflation exhibit a positive and robust relationship with (domestic) food inflation. With non-food inflation, while the relationship is generally positive, it is not always statistically significant and the magnitude is small. These suggest that second-round effects from global food prices to non-food inflation is weak in Timor-Leste.

Government spending remains positive and also statistically significant for food inflation. But the results are weaker for non-food inflation. These results are consistent with the view that government spending—largely dominated by recurrent spending—is supporting subsistence consumption (i.e. food) in a LIC context, while it is not directed to support non-food goods and services.

Indonesia’s inflation has statistically significant impact on non-food inflation, but not on food inflation. This result aligns with trade composition data: while rice is primarily imported from India, Indonesia is the main source of non-food imports such as vehicles, machinery, construction materials, and services, including tourism.

Quarterly analysis of inflation. As an additional robustness check, we estimate the model at the quarterly frequency, where inflation and the explanatory variables are accordingly specified in terms of quarter-on-quarter growth. We estimate the model for headline inflation as well as separately for food and non-food inflation. As above, we retain the same set of explanatory variables in the baseline model. The results are presented in Annex II, Table 2.

Lagged inflation remains statistically significant. The estimated coefficients are somewhat smaller than those

⁹ We also consider the Commodity Import Price Index based on Gruss and Kebhaj (2019)—which captures external price shocks for a wider category of commodities than global food prices—and M2 as an alternative indicator of aggregate demand. The estimated coefficients are generally statistically insignificant.

¹⁰ Food inflation is based on the CPI basket that includes food and non-alcoholic beverages, and non-food inflation captures the remainder of headline inflation. Data are sourced from Timor-Leste’s General Directorate of Statistics.

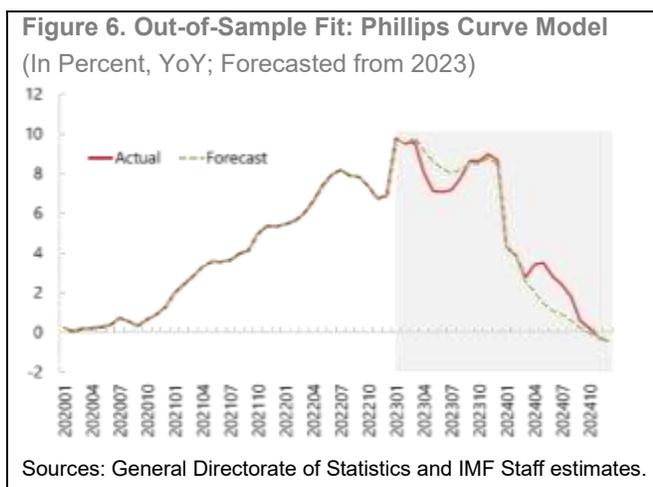
reported in recent studies using similar quarter-on-quarter specifications—for example, 0.9 in Central African States is an Economic Community (Tiedemann and others, 2024), 0.7-0.8 in the Caucasus and Central Asia countries (Atamanchuk and others, 2025), and 0.6 in European emerging economies (Baba and others, 2023). These findings are broadly consistent with the results from the AR(1) that inflation persistence in Timor-Leste is somewhat lower than comparable countries.

Global food and rice prices continue to have a positive and statistically significant relationship with inflation in most of the specifications. The coefficients before tax changes remain as expected. Taken together, these reaffirm our headline results as discussed earlier.

5. Forecasting

We conduct out-of-sample forecasts to evaluate the predictive power of the Phillips Curve model presented above. For this, we use the baseline model estimated using monthly data. The out-of-sample forecasting is implemented as follows: we estimate the model from 2013 to 2022, generate monthly inflation out-of-sample forecasts for the period January 2023 to December 2024.¹¹ To construct the forecasts, we use actual outturns for the explanatory variables, while lagged inflation terms are filled using model-implied forecasts. The estimated impacts of tax changes in 2023 and 2024 are mechanically added based on full-sample regressions, since they fall outside the model's estimation window.

The baseline model projects an annual headline inflation of 8.8 percent in 2023—0.4 percentage points higher than the actual outturn of 8.4 percent. For 2024, the model projects a sharp deceleration of the inflation rate, with a point estimate of 1.3 percent that slightly underestimates the actual outturn of 2.1 percent. Overall, the out-of-sample forecast performance is satisfactory, though it is important to recognize that the impacts of tax changes have been mechanically incorporated in this exercise.



To illustrate how the model can be applied to generate near-term inflation forecasts, we extend the out-of-sample exercise to forecast inflation from January 2025 to December 2026. For this, we use the baseline model estimates using the sample period from December 2013 to December 2024. Unlike the out-of-sample exercise that employs actual values of the explanatory variables, this approach necessitates the forecasts of the explanatory variables themselves. For this, we compile the relevant forecasts at the annual frequency—which are more readily available—and subsequently interpolate them to create monthly series, since the model is estimated at the monthly frequency. We draw the forecasts from the [World Bank's Pink Sheet](#) (food and rice prices) and the [IMF's April 2025 WEO](#) (government spending and Indonesian inflation), both of which are publicly available and updated regularly. We interpolate annual inflation projections to monthly frequency using

¹¹ The sample period used in this paper ends in December 2024 given data cutoffs. Thus, the out-of-sample forecasts period ends in December 2024. In addition, we treat 2025 as part of the horizon for actual inflation projections.

Excel's Solver tool to apply our Phillips Curve model. The resulting monthly projections are then averaged to derive annual inflation forecasts for 2025 and 2026. All in all, these entail a relatively simple and user-friendly suite of forecasting toolkit that should be handy for forecasting inflation in Timor-Leste.

The model's forecasts predict average annual inflation of 0.2 percent for 2025 and 0.8 percent for 2026. These low inflation projections reflect strong disinflationary effects expected from moderating global food prices. While the model-based forecast is informative, it is important to note that there may be relevant inflation drivers not fully captured by the model. For instance, in the conjuncture, there may be upward inflationary pressures that include anticipated low agricultural yields from the 2024 harvest, potentially worsened by the effects of El Niño on food supply; strong private sector growth, driven by strong remittances and credit growth; and rising tourist arrivals. More broadly, as illustrated by the impact of tax changes, abrupt shifts in domestic policy matter for inflation dynamics. Taken together, the inflation projection may need adjustments to account for these factors outside the model, all of which can be easily implemented in the forecasting toolkit.

6. Conclusion

This paper presents a comprehensive analysis of inflation in Timor-Leste—an economy with a unique set of structural characteristics. Using a newly-assembled dataset, we assess the historical evolution of inflation in Timor-Leste and benchmark it against peer country groups. We then employ a Phillips curve model to distill the role of external and domestic factors in driving inflation. We demonstrate how the estimated model can be used for forecasting inflation in Timor-Leste.

We find that inflation in Timor-Leste was elevated until around mid-2010 and was largely driven by fluctuations in global food prices. Over the past decade, inflation has been more moderate, with the notable exception of the pandemic period, when inflation surged, as it did in many other countries. The Phillips curve analysis confirms that inflation dynamics in Timor-Leste are strongly influenced by global commodity prices, particularly global rice prices. On the domestic side, public spending has not played a meaningful role in shaping inflation over the past decade, although recent tax changes have had a noticeable impact. Our headline econometric results are robust across a range of alternative model specifications.

Given the dominant role of global food prices for inflation dynamics in Timor-Leste, the expected path of global food prices is an important input in the model for forecasting Timorese inflation. That said, inflation projections should also consider other factors not captured by the model, including abrupt shifts in relevant domestic policy.

All in all, inflation dynamics in Timor-Leste resemble those observed in many low-income countries, where food constitutes a large share of the CPI basket. The country's relatively low and stable inflation over the past decade coincided with a period of subdued global food price inflation. Timor-Leste's relative macroeconomic stability—in the context of post-conflict fragility—along with its dollarized monetary regime, may have contributed to this outcome. As the country continues to strengthen its macroeconomic institutions, effectively monitoring and managing inflation risks will remain essential to sustaining macroeconomic stability and safeguarding real incomes, particularly for the most vulnerable segments of the population.

There are important areas for further research. First, the role of exchange rate pass-through to inflation warrants further investigation which will require carefully assembling prices of various imports expressed in

local currency. Second, it would be useful to extend the analysis on the determinants of non-food inflation. Third, the use of micro-level data on household consumption patterns could shed additional light on inflation transmission mechanisms. When data become available, the Phillips curve framework could be extended to include (forward-looking) inflation expectations and labor market dynamics.

Annex I. Data Sources

The Annex presents the source of the variables used in the paper.

Variable	Data source
CPI (Headline/ Food/ Non-food)	World Bank Global Database of Inflation (December 2001 – November 2012) and National Institute of Statistics Timor-Leste (December 2012- December 2024)
Public spending	Timor-Leste Budget Transparency Portal
Global food price	FAO Food Price Index
Rice price	World Bank Pink Sheet (25%, Thai)
Global shipping cost	Baltic Exchange Dry Index
Global oil price	West Texas Intermediate
NEER	IMF Information Notice System
Commodity Import Price Index	IMF Information Notice System
US policy rate	Federal Reserve Board
Indonesian inflation	World Bank Global Database of Inflation
2022 tax rise	The authorities' announcement
2023 tax rise	The authorities' announcement
2024 tax cut	The authorities' announcement
Rainfall	The Humanitarian Data Exchange (HDX)

Annex II. Phillips Curve Estimates: Robustness

This annex presents the results from the robustness exercises discussed in Section 4.

Annex II. Table 1. Philips Curve Model Estimates: Disaggregated Analysis						
Model	(1)	(2)	(3)	(4)	(5)	(6)
Variables (mom, percent)	Food Inflation			Non-Food Inflation		
Inflation (Food or Non-food), lag 1	0.139**	0.146**	0.177	0.158**	0.162**	0.094
Inflation (Food or Non-food), lag 2	0.308***	0.299***	0.201*	0.122*	0.124*	0.124
Global food inflation, lag 1	0.023	0.031**	0.011	0.019	0.015	-0.008
Global food inflation, lag 2	0.023	0.018	-0.001	0.005	0.007	-0.033
Global rice inflation, lag 1	0.020**	0.021**	0.021*	0.010	0.009	-0.005
Global rice inflation, lag 2	0.012	0.011	0.005	0.004	0.004	-0.002
Public expenditure, lag1	0.001**	0.001**	0.001	0.000	0.000	0.000
Public expenditure, lag2	0.001*	0.001*	0.000	-0.000	-0.000	-0.001
Dummy for 2022 tax hike	-0.140	-0.158		0.926***	0.939***	
Dummy for 2023 tax hike	3.922***	3.964***		1.908***	1.882***	
Dummy for 2024 tax cut	-0.940**	-0.965***		-1.533***	-1.519***	
Indonesia inflation, lag 1	0.087	0.028	0.058	0.136*	0.169**	0.253***
Indonesia inflation, lag 2	-0.018	0.002	0.008	-0.030	-0.037	0.061
NEER, lag 1		0.045	0.029		-0.024	-0.063**
NEER, lag 2		-0.025	-0.029		0.010	-0.048*
Constant	0.048	0.053	-0.007	0.062	0.058	-0.020
Observations	142	142	85	142	142	85
R-squared	0.610	0.620	0.213	0.481	0.487	0.239
Adj. R-squared	0.570	0.574	0.0818	0.429	0.425	0.113

Source: IMF staff estimates.
 Note: *** p<0.01, ** p<0.05, * p<0.1. Models 3 and 6 are estimated using pre-Covid sample period.

Annex II. Table 2. Phillips Curve Model Estimates: Quarterly Analysis

Model	(1)	(2)	(3)	(4)	(5)	(6)
Variables (qoq, percent)	Headline Inflation		Food Inflation		Non-Food Inflation	
Headline inflation, lag 1	0.210*	0.229*	0.189	0.209*	0.348**	0.354**
Headline inflation, lag 2	0.286*	0.280	0.270*	0.232	0.022	0.044
Global food inflatoin, lag 1	0.057**	0.061**	0.073**	0.082***	0.038	0.040
Global food inflatoin, lag 2	0.019	0.009	0.038	0.030	0.006	-0.002
Global rice inflation, lag 1	0.034**	0.034**	0.054***	0.054***	0.007	0.007
Global rice inflation, lag 2	-0.030*	-0.031*	-0.029	-0.025	-0.032**	-0.034*
Public expenditure, lag 1	-0.001	-0.001	-0.000	0.000	-0.001	-0.001
Public expenditure, lag 2	-0.002	-0.002	-0.003	-0.003	-0.000	-0.000
Dummy for 2022 tax hike	0.220	0.287	-0.251	-0.145	0.737	0.793
Dummy for 2023 tax hike	3.731***	3.623***	4.383***	4.298***	3.412***	3.306***
Dummy for 2024 tax cut	0.984	0.910	2.138**	2.245**	0.755	0.590
Indonesia inflation, lag 1	0.170	0.032	0.118	-0.120	0.289*	0.210
Indonesia inflation, lag 2	-0.181	-0.044	-0.140	-0.046	-0.218	-0.103
NEER, lag 1		0.041		0.090		0.016
NEER, lag 2		-0.054		-0.036		-0.047
Constant	0.048	0.053	-0.007	0.047	0.048	0.062
Observations	46	46	46	46	46	46
R-squared	0.783	0.791	0.798	0.809	0.685	0.690
Adj. R-squared	0.694	0.687	0.715	0.714	0.557	0.535

Source: IMF staff estimates.

Note: *** p<0.01, ** p<0.05, * p<0.1.

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