

Climate Shocks and Inflation: How Monetary Policy Can Stabilize The Tunisian Economy

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Abstract

This article examines the factors influencing inflation in Tunisia over the period 1990–2023, focusing on the combined role of monetary, macroeconomic, climatic, and external trade factors. Using the ARDL methodology, the study simultaneously analyzes short-run dynamics and long-run relationships between inflation, money supply, exchange rate, money market interest rate, gross domestic product, and climatic factors (temperature and precipitation). The empirical results reveal the existence of a stable cointegration relationship between inflation and its main determinants. In the short run, money supply and the exchange rate exert a significant influence on inflation, reflecting the importance of monetary and external transmission channels. In the long run, the money market interest rate, economic activity, and climatic variables emerge as structural determinants of inflation. In particular, rising temperatures and precipitation variability contribute to heightened inflationary pressures. The robustness analysis, which incorporates imports and exports, confirms these findings, highlighting the long-run inflationary effect of imports and underscoring the Tunisian economy's dependence on imported goods. All diagnostic tests confirm the correct specification of the model and the stability of the estimated relationships. These results suggest that controlling inflation in Tunisia requires a comprehensive approach combining prudent monetary policy, reduced external vulnerability, and the integration of climate risks into economic policymaking.

Index Terms

Inflation; Monetary policy; Climate shocks; ARDL model; Exchange rate; Tunisia