



البنك المركزي التونسي
BANQUE CENTRALE DE TUNISIE

Impact of monetary and fiscal policies on inflation in time of crisis using Fiscal DSGE Case of Tunisia

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Motivation

- The great recession due to the Covid-19 pandemic and more recently the war of Russia-Ukraine has prompted many governments as well as advanced economies and emerging economies to control inflation.
- Tunisia has witnessed an unprecedented level of inflation reached 8,1% in June 2022 compared to 5,7% on year earlier. Drivers of current inflation are not attributed only to supply shocks to energy and food prices or disruption in supply chains but also on fiscal shocks. The public debt will be reach 82,6 in percent of GDP compared to 79,2 in percent of GDP in 2021.
- Central bank of Tunisia has raised its policy rate by 75 basis points to reach 7% in May 2022 to contain inflation,
- The mainly debate is what are the effects on the real economy since we need to safeguard our recovery and what is the reaction of fiscal policy, especially in crisis time to curb down their public debt?

Price pressure continued throughout 2022. The inflation rate came to 8.1% yoy, compared to 5.7% the year before.

Chart1: Inflation outlook 2018-2022



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Empirical model: Designing of Fiscal DSGE model

Fig 1: Flow of goods and Input factors

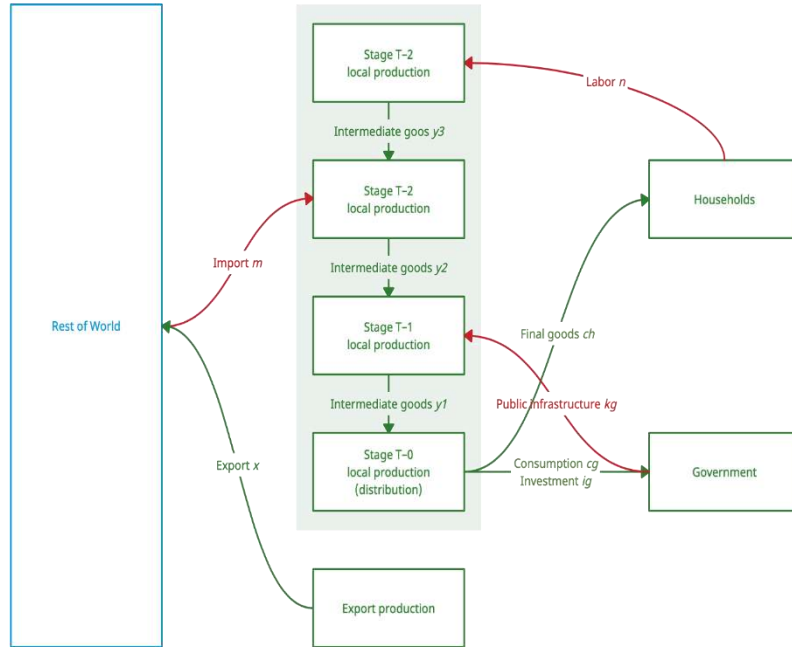
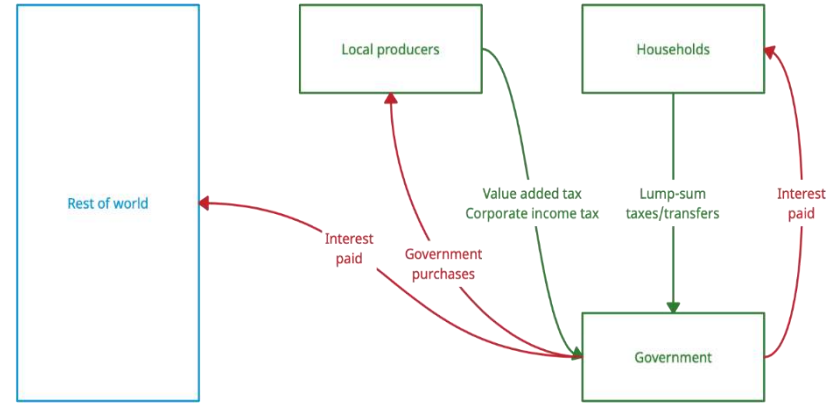
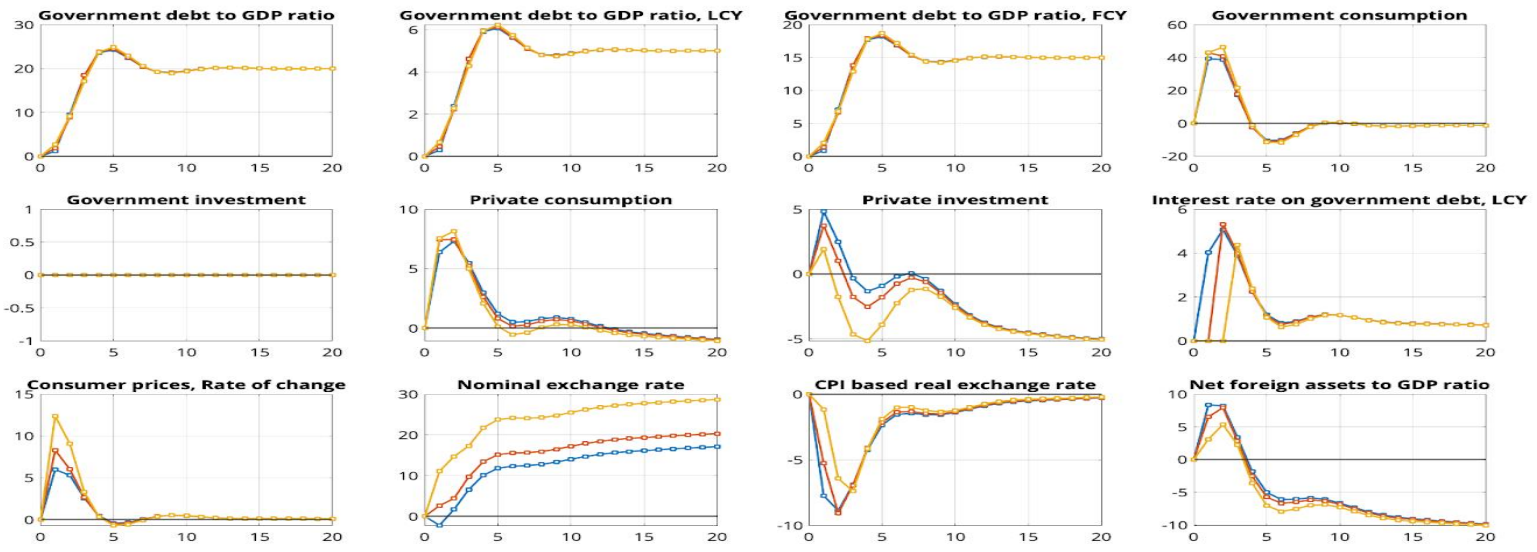


Fig2: Fiscal receipts outlays



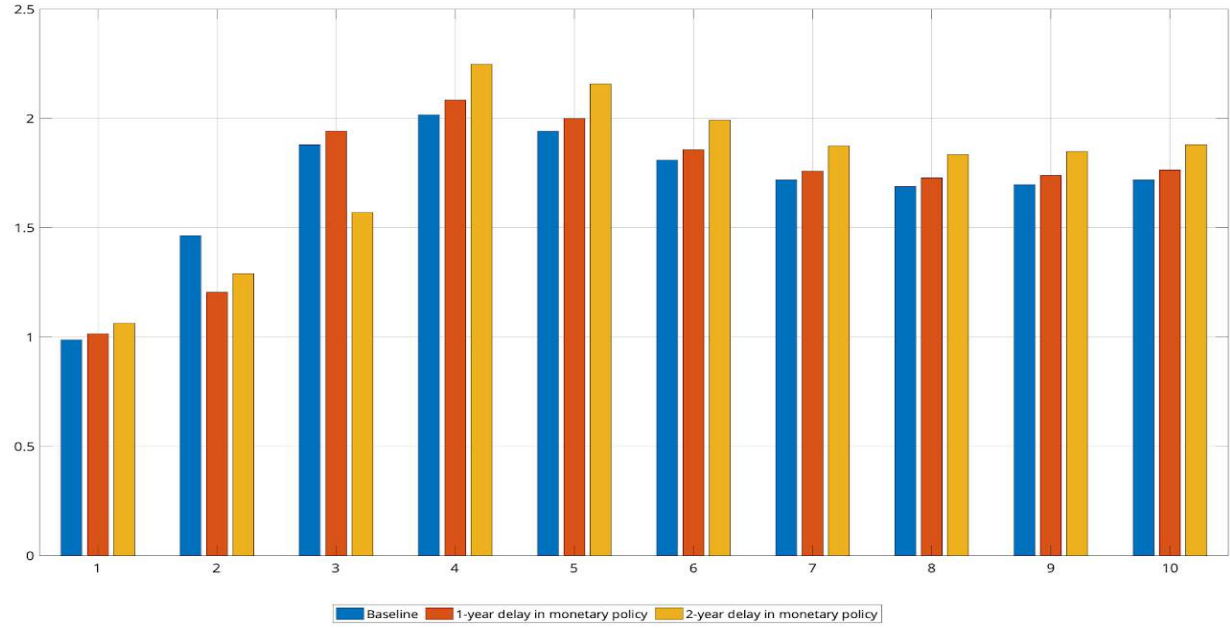
Simulation scenarios

- Baseline scenario: Under normal circumstances, the central bank increase its interest rate to control inflation,
- Alternative scenario: Central bank tries to postpone the interest rate hikes (for 1 year and for 2 years),



Impact in terms of cost of sovereign debt servicing

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Sensitivity analysis for fiscal policy :we analyze the impulse response of fiscal policy shock by comparing three different scenarios: Scenario (1) is defined as baseline scenario when Government debt to GDP ratio increases permanently, split between local currency (LCY) and foreign currency (FCY). Scenario (2) is defined by an issuing debt only in local market. Scenario (3) is defined by issuing debt only in local market with an increasing sovereign risk.

Chart 2: Comparison permanent increasing debt

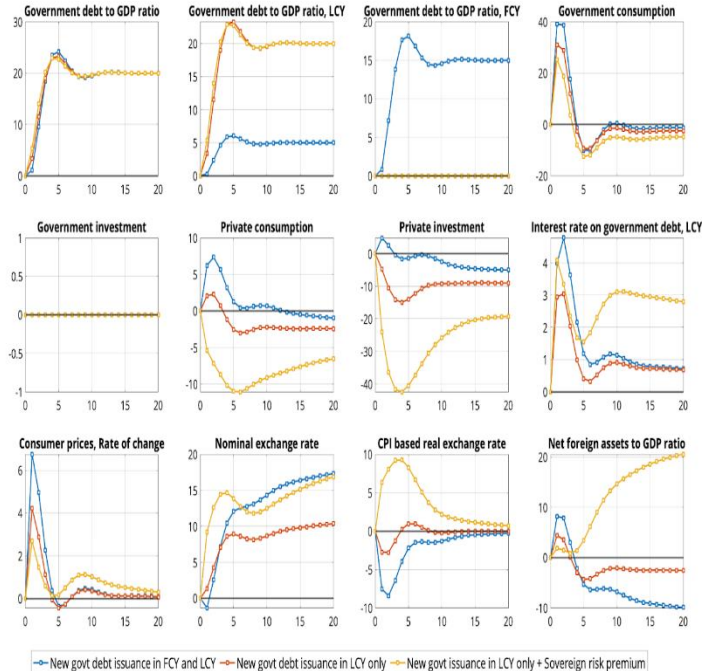


Table 1: increasing vat rate

Private consumption	-0.70%
Private investment	-1.09%
Government consumption	-1.96%
Government investment	0%
Short-term cash rate, LCY	0%
Government debt to GDP ratio	0%

Main Findings

- Simulations show that reaction of monetary policy by increasing interest rate by 75 basis points avoid the situation where inflation would be in double digits 13% and a persistent depreciation of exchange rate. However, a losses monetary policy for one and two years would have an important cost of sovereign debt servicing in medium term.
- In this situation, the government entry a spiral of permanent increasing debt where issuing on external market is limited. Consequently, fiscal reaction would have an implications on results.
- In the scenario, when the government finance its budget deficit only in local market as a results there are bigger depreciation pressures on local currency and interest rates. This damages private demand (consumption and investment significantly) and crowding out pressures on the local financial sector conducting monetary policy to be more restrictive. Alternatively, if the government decides to increase permanently the VAT with improving public investment lead to a fall in inflation via demand channel. Hence, the fall in inflation make a room for applying a loose monetary policy by unchanged interest rate.