The Effects of Fiscal, Monetary, and Exchange Rate Policy Shocks on Financial Stability in Tunisia: Empirical Evidence from an Agnostic Sign-Restriction Approach and Wavelet Coherence Analysis

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Introduction

In emerging and developing economies, the movement of non-performing loans is closely linked to macroeconomic volatility and policy shocks. Fiscal policy, monetary policy, and exchange rate policy are particularly important since they influence economic growth, inflation, interest rates, liquidity circumstances, business profitability, and debtors' actual repayment capabilities. So, in fact, policy shocks are more than just abstract concepts; they influence credit outcomes.

Research Goal

This study investigates the effects of monetary, fiscal, and exchange rate policy shocks on the financial stability of the Tunisian banking system. It considers six structural shocks grouped into two categories:

- Non-fiscal shocks: real business cycle, expansionary monetary policy, and exchange rate depreciation shocks.
- Fiscal shocks: government expenditure, tax revenue, and tax-financed government expenditure shocks.

Methodology

We use monthly data from January 2002 to December 2024, including real government expenditure (GOV), real tax revenues (TAX), the real effective exchange rate (REER), the consumer price index (CPI), the industrial production index (IPI), and non-performing loans as a share of total credit (NPL). Real variables are expressed in constant 2010 prices.

This study employs a Bayesian Structural Vector Autoregression (SVAR) model with sign restrictions, following the methodology of Uhlig (2005) and Mountford and Uhlig (2009). Compared with recursive VAR models based on Cholesky decomposition, this approach provides a more flexible and theoretically consistent identification of monetary, fiscal, and exchange rate policy shocks.The Bayesian SVAR framework is particularly suitable for Tunisia, given the structural changes and macroeconomic uncertainty following the 2011 revolution. It enables a robust assessment of how policy shocks propagate through the economy and affect non-performing loans in the banking sector.

Variables	MP Shock	Exchange Rate Shock	Business Cycle Shock	Gov Spending Shock	Tax Revenue Shock	Tax-Financed Gov Spending Shock
IPI			+			
CPI	–	+	–			
REER	+	–				
GOV				+		+
TAX					+	+
NPL						
INT	+					

Notes:

(+) indicates that the impulse response of the corresponding variable is restricted to remain positive for 24 months (including the impact month) following the shock.

(–)indicates a negative response over the same horizon. Blank cells indicate that no sign restriction is imposed.

Results

Figure 1: Responses to an Unanticipated expansionary monetary shocks

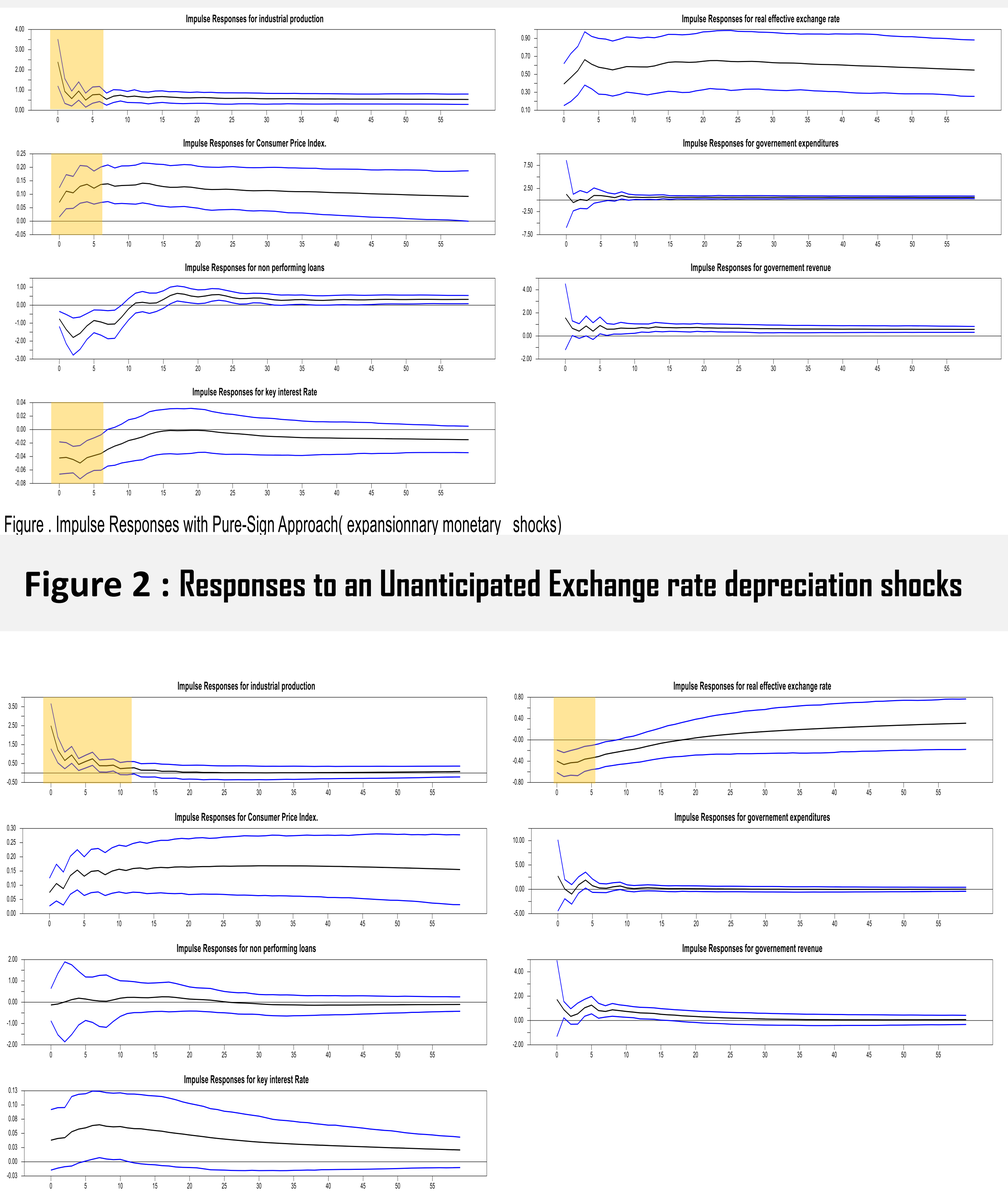

Figure . Impulse Responses with Pure-Sign Approach(expansionnary monetary shocks)

Figure 2 : Responses to an Unanticipated Exchange rate depreciation shocks

Figure . Impulse Responses with Pure-Sign Approach(Exchange rate depreciation shocks)

Figure 3: Responses to an unanticipated Government Expenditure Shock

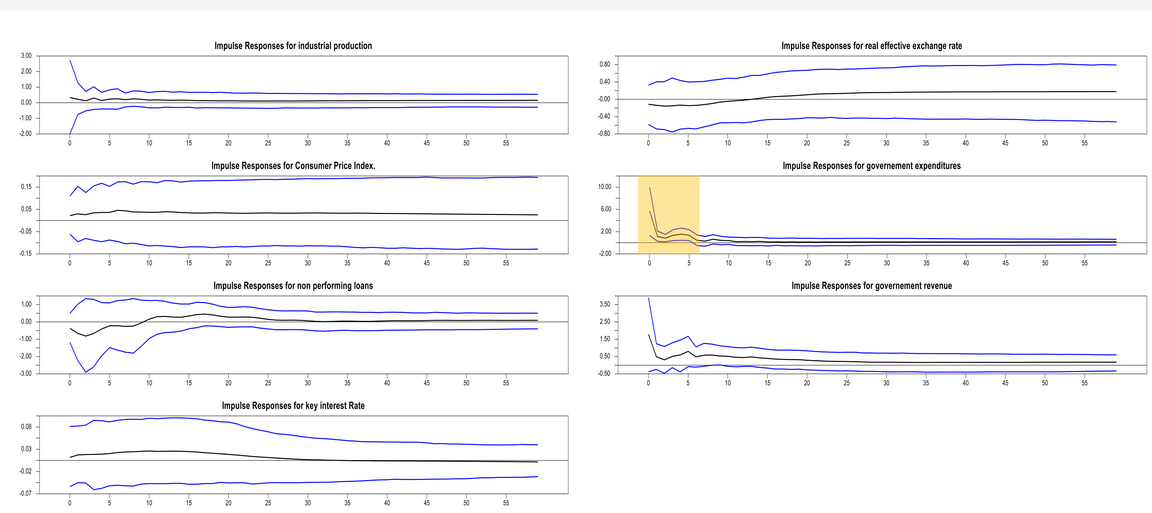

Figure . Impulse Responses with Pure-Sign Approach(governement shocks

Figure 4: Responses to an Anticipated positive Government expenditure shocks financed by taxes

Figure . Impulse Responses with Pure-Sign Approach(governement expenditures financed by taxes shocks)

Conclusion

- The findings indicate that macroeconomic policy shocks have significant and heterogeneous effects on non-performing loans (NPLs) in Tunisia. Expansionary fiscal shocks reduce NPLs by supporting economic activity and borrowers' repayment capacity, whereas tax-financed fiscal expansions increase NPLs by weakening household consumption and firms' profitability.
- Exchange rate depreciation significantly raises NPLs through higher import costs, inflationary pressures, and increased debt servicing burdens, particularly for firms with foreign-currency liabilities.
- In contrast, expansionary monetary policy lowers NPLs by easing financing conditions, stimulating economic activity, and improving borrowers' repayment capacity, thereby enhancing banking sector resilience.