Fiscal governance in the EU

1. Maastricht’s fiscal criteria:
   - Budget deficit ≤ 3% of GDP and public debt ≤ 60% of GDP.
   - Fiscal compact strengthening the Stability and Growth Pact’s (SGP)
     - Structural budget deficit ≤ 0.5% of GDP.
   → SGP is supposed to ensure compliance with Maastricht criteria, while allowing the automatic stabilizers to operate fully.

2. The structural budget balance is measured by the cyclically-adjusted budget balance (CABB): CABB_t = B_t - CCI_t - B_{t-1} - \Delta \Theta_G_t where B_t - budget balance-to-GDP ratio, \eta - budget sensitivity parameter, \Delta G_t - output gap.

But

1. Is the European Commission CABB estimation methodology efficient in identifying the true discretionary fiscal policy?
2. If not, what are the consequences of such an imprecision?
3. Are the set fiscal rules’ thresholds appropriate in terms of stabilization efficiency?

Motivation

Precise of EC methodology

Table 1: Monitoring MCPP’s structural deficit provision with the official EC methodology, % of periods

Table 5: Effect of fiscal tightening in case of mis-signals on macroeconomic stability: increase in standard deviations (in %)

Table 6: Fiscal tightening for each identified violation of the SGP fiscal rule increase in standard deviations (in %)

What do we do? - The simulation experiment

1. Estimate a DSGE model: Small open economy DSGE model based on Adolfson et al. (2007) in a monetary union. Trend output driven by permanent technology shocks. Fiscal policy is endogenized and extended to include (a) VAT, FIT, SIC, CIT and capital income taxes, (b) social transfers and unemployment benefits, and (c) the government consumption fiscal rule

2. Use the DSGE as DGP: 10,000 iteration. In each iteration 100 quarterly observations (≈ 25 years of macroeconomic data) generated by drawing 17 structural shocks from \((N(0, \sigma), \sigma = \text{posterior means})\). Additionally, we simulate periods of Great Recessions based on the dynamics of the EA GDP between the peak in 2008q1 and subsequent 5 years. We single out episodes that exhibit a drop of at least 5% between \(t-1\) and \(t\) and a subsequent recovery only by \(t + 1\) or later. A Great recession occurs on average slightly less than once per 100 years.

3. Assess the CABB – four approaches: We estimate the cyclic component (CC = \(\Delta \Theta_G\)) in four ways: (a) as the product of \(\eta\) following the official method and FF-based output gap, (b) as the product of \(\eta\) following the official method and HP filtered output gap, (c) as the product of augmented \(\eta\) and DSGE measured output gap (d) as a purely automatic trajectory of deficit (novel!) → random draws of structural shocks with restrictions \(\mu_t = \rho_0 = \rho_{dt} = \varepsilon_{dt} = 0\)

4. Evaluate the efficiency of CABB and stress test the EU fiscal framework:
   a. The structural model enables us to directly distinguish between automatic and discretionary fiscal policy. We use the generated economic methodology to estimate the CABB according to the official European Commission (EC) methodology and check its efficiency identifying the true discretionary measures.
   b. We assess the macroeconomic implications of breaching the SGP 0.5% of GDP limit on structural deficit, by addressing two issues:
      - The first concerns the welfare implications when the CABB estimated signals a violation of the 0.5% of GDP threshold, while in reality it is not so (mis-signal). In such cases the EC can trigger unnecessary corrective measures that might destabilize the economy.
      - The second issue is about the appropriateness of the 3% deficit-to-GDP and 0.5% structural deficit-to-GDP ceilings in terms of stabilization efficiency. Simulating the model dynamics under the optimal expenditure fiscal rule enables us to test whether the 3% of GDP deficit and 0.5% of GDP structural deficit limits allow for sufficient room to maneuver for stability-oriented fiscal policy.

European Commission

Table 7: Frequency of violations of EMU fiscal rules under the optimal fiscal rule (in %)

Optimal simple fiscal rule

The estimated expenditure fiscal rule (EFR): \(g_e = 0.75g_{t-1} - 0.25g_t - 0.04\mu_{t-1} - 0.24\mu_t + 0.26d_{t-1}f_t + \varepsilon_{gt}\) (2)

The optimization problem:

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\min_{g_{t-1}} (g_{t-1}^2 + \varepsilon_t^2) 
\]

Optimal expenditure fiscal rule (OFR):

\(g_e = 0.80g_{t-1} - 0.25g_t - 0.35\mu_{t-1} - 0.47\mu_t - 0.27d_{t-1}f_t + \varepsilon_{gt}\) (3)

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