Monetary-Fiscal Interactions and the Euro Area’s Malaise

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Research questions

• What is the relation between how monetary and fiscal policy interact in the euro area and the macroeconomic outcomes?
  
  — Real GDP per capita at the end of 2015 was 2 percent lower than in 2008.

  — Inflation has been low and the ECB’s policy rates have been close to the lower bound.

  — Government bond spreads, about zero until 2009, increased sharply and subsequently decreased to low levels.

• What kind of interaction between monetary and fiscal policy in the euro area would improve macroeconomic outcomes?
This paper

- The current configuration of monetary and fiscal policy in the euro area has been central to the recent outcomes.
  - We solve a simple, non-linear general equilibrium model with sticky prices.
  - The model mimics the recent euro area data.

- An alternative configuration of monetary and fiscal policy, with a non-defaultable Eurobond, can lead to much improved outcomes.
Model

- A single economy, homogenous households and firms, households pay lump-sum taxes to $N$ fiscal authorities.

- The monetary authority follows an active rule subject to the lower bound.

- Fiscal authority $n$ issues one-period nominal bonds, follows a passive rule that includes feedback from output.
  - Defaults if debt exceeds an upper bound, the upper bound is an i.i.d. random variable.
Indeterminacy

- The model has two steady states: “intended” and “unintended” (Benhabib et al., 2001).

- After a disturbance that decreases the value of current consumption there are multiple solutions for \( \{Y_t, \Pi_t, R_t\}_{t=1}^{t=\infty} \).

- There are multiple solutions for the interest rate on debt of fiscal authority \( n \).
Baseline simulation

- A “confidence-about-inflation” sunspot can occur with probability $p$ each year so long as the shock has not occurred.
  
  - After the shock has occurred, the economy converges to the unintended steady state.

- A “confidence-about-debt” sunspot picks a solution for the interest rate on debt of fiscal authority $n$.

- Fiscal authorities: “North” is GER, FRA, NED, “South” is ITA, SPA.
Figure 3: The baseline simulation versus the data

**Output, Y**

2008 normalized to 1

**Inflation rate, 100(Π-1)**

Percent per annum

**Central bank interest rate, 100(R-1)**

Percent per annum

**Government bond spread, 100(Z₂-Z₁)**

Percentage points per annum
Policy experiment: a centrally-operated fund issuing Eurobonds

- Ready to purchase debt of fiscal authority $n$ so long as that authority follows a prescribed rule.

- If $R_t = 1$, the monetary authority switches to setting an exogenous path for $R_t$ converging to the intended steady state.

- If $R_t = 1$, fiscal authority $n$ switches to setting

$$\tilde{S}_{nt} = \tilde{\psi}_n + \psi_B \left[ \tilde{B}_{n,t-1} - \theta_n \left( \sum_n \tilde{B}_{n,t-1} \right) \right] + \psi_{Yn} (Y_t - Y)$$

where $\sum_n \theta_n = 1$ (Sims, 1997). An active fiscal policy for the union as a whole, implying a unique solution for $\{Y_t, \Pi_t, R_t\}_{t=1}^{t=\infty}$. 

Figure 4: The policy experiment in Section 5.1 vs. the baseline simulation

Output, $Y$

Inflation rate, $100(\Pi - 1)$

Central bank interest rate, $100(R - 1)$

Government bond spread, $100(Z_2 - Z_1)$
Default by a national fiscal authority

- If fiscal authority $n$ deviates from the prescribed rule, the fund refuses to purchase its debt and the authority can default. We use the model to assess the consequences of default.

- Splitting $\tilde{S}_{nt} = \tilde{S}_{nt}^F + \tilde{S}_{nt}^H$ between the fund and households:

  $$\tilde{S}_{nt}^F = \bar{\psi}_n + \psi_B \left[ \tilde{B}_{n,t-1}^F - \theta_n \left( \sum_n \tilde{B}_{n,t-1}^F \right) \right] + \psi_Y n (Y_t - Y)$$

  $$\tilde{S}_{nt}^H = \psi_n + \psi_B \tilde{B}_{n,t-1}^H + \psi_Y n (Y_t - Y)$$

- We suppose that South deviates by lowering $\bar{\psi}_2$ and defaulting on households, with recovery rate $\Delta = \left( \bar{\psi}_2^{\text{new}} / \bar{\psi}_2^{\text{old}} \right)$. 

Figure 5: The effect of default on the policy experiment from Section 5.1

Output, $Y$

- Simulation without default, Section 5.1
- Moderate default scenario, Section 5.2

Inflation rate, 100($\Pi - 1$)

- Simulation without default, Section 5.1
- Moderate default scenario, Section 5.2

Output, $Y$

- Simulation without default, Section 5.1
- Severe default scenario, Section 5.2

Inflation rate, 100($\Pi - 1$)

- Simulation without default, Section 5.1
- Severe default scenario, Section 5.2
Conclusions from the simple model

- The current configuration of monetary and fiscal policy in the euro area has been central to the recent macroeconomic outcomes.

- An alternative configuration of monetary and fiscal policy, with a non-defaultable Eurobond, could have led to much improved outcomes.
Back to the research questions

• “What is the relation between how monetary and fiscal policy interact in the euro area and the macroeconomic outcomes?”

• “What kind of interaction between monetary and fiscal policy in the euro area would improve macroeconomic outcomes?”

• Much work remains, e.g., modeling country heterogeneity, adding debt of different maturities, bringing the model closer to the data.