Fiscal Consolidations Under Imperfect Credibility

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- Standard Keynesian analysis implies that fiscal consolidation reduces output, but that interest rate cuts and depreciating exchange rates cushion the impact
- Accordingly, conventional wisdom suggest that adverse output effects of government spending cuts on output are smaller when a country conducts an independent monetary policy (IMP) than when constrained by membership in a currency union (CU)
    - Theory: Corsetti, Kuester and Muller (2011); Evidence: Ilzetzki et al. (2010), Serrato and Wingender (2010), Nakamura and Steinsson (2011)

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  - Focus on CU case, but use independent monetary policy (IMP) as a reference point
- Use the workhorse model by Gali and Monacelli (2005) as starting point
  - Examine robustness in a fully-fledged DSGE model in which we allow for endogenous interest rate spreads

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  - Reflects that monetary policy does not cushion an abrupt fall in demand in small CU member
  - Gradualism mitigates problems with credibility

Presentation outline

- Model
- Parameterization and modeling of credibility
- Impact of credibility under IMP
- Impact of credibility under CU
- Robustness analysis in fully-fledged model
- Summary and future work

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  - Complete risk sharing domestically and internationally
  - Producer currency pricing, PPP holds in the long-run

Model

Log-linearized representation

- IS curve ($x_t \equiv y_t - y_t^{pot}$)

$$x_t = x_{t+1|t} - \hat{\sigma}^{open}(i_t - \pi_{t+1|t} - r_t^{pot})$$

- Pricing schedule (NKPC)

$$\pi_t = \beta \pi_{t+1|t} + \kappa_x x_t,$$

where $\kappa_x \equiv \kappa_{mc}\phi_{mc}$ slope of the NKPC

- Terms of trade τ_t determined by

$$y_t = \hat{\sigma}^{open}\tau_t + g_y g_t \qquad \text{(ToT)}$$

- Potential real interest rate r_t^{pot}

$$r_t^{pot} = \tau_{t+1|t}^{pot} - \tau_t^{pot}$$

- Policy rule

$$i_t = \gamma_\pi \pi_t + \gamma_x x_t$$

  - Complete stabilization for spending shocks when either γ_π or γ_x are set arbitrarily large

- Nominal exchange rate e_t $(p_t^* = 0)$

$$e_t = p_t + \tau_t,$$

where $p_t = p_{t-1} + \pi_t$

Model

CU specification

- Nominal exchange rate $e_t = 0$ for all t, so

$$\tau_t = -p_t$$

- Moreover, as the economy is a small, the nominal interest rate is fixed and x_t hence determined by (ToT)

$$x_t = \hat{\sigma}^{open}\left(\tau_t - \tau_t^{pot}\right)$$

where $\tau_t^{pot} = -\frac{1}{\hat{\sigma}^{open}}\left(1 - \frac{1}{\phi_{mc}\hat{\sigma}^{open}}\right)g_y g_t$

- It follows that

$$\tau_t = \lambda\tau_{t-1} + \kappa_x\hat{\sigma}^{open}\frac{\lambda}{1-\beta\rho\lambda}\tau_t^{pot},$$

i.e. a spending cut always causes τ_t to depreciate

Parameterization

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- Elasticity between foreign and domestic goods, $\varepsilon_p = 1.5$, import share $\omega = 0.3$

Modeling of Credibility

Adopt standard approach in literature

- Government spending, g_t is the sum of the permanent (g_t^{perm}) and temporary (g_t^{temp}) components:

$$\begin{aligned} g_t - \bar{g} &= (g_t^{perm} - \bar{g}) + g_t^{temp} \\ g_t^{temp} &= \rho^{temp} g_{t-1}^{temp} + \frac{1}{g_y}\varepsilon_t^{temp} \end{aligned}$$

$$\Delta\left(g_t^{perm} - \bar{g}\right) = \rho_1^{perm}\Delta\left(g_{t-1}^{perm} - \bar{g}\right) - \rho_2^{perm}\left(g_{t-1}^{perm} - \bar{g}\right) + \frac{1}{g_y}\varepsilon_t^{perm}$$

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- Assume agents have to solve signal-extraction problem to filter out g_t^{perm} and g_t^{temp} from observed g_t
  - Begin with unitroot assumption for g_t^{perm}, $\rho^{temp} = 0.78$, $\sigma_{perm} = 0.0836$, $\sigma_{temp} = 1.44$ (estimated off Irish data); implied SN-ratio 0.81

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- Results in Figure 1 shows effects under IMP

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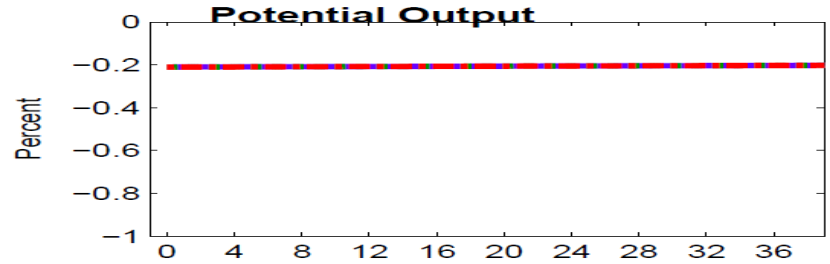

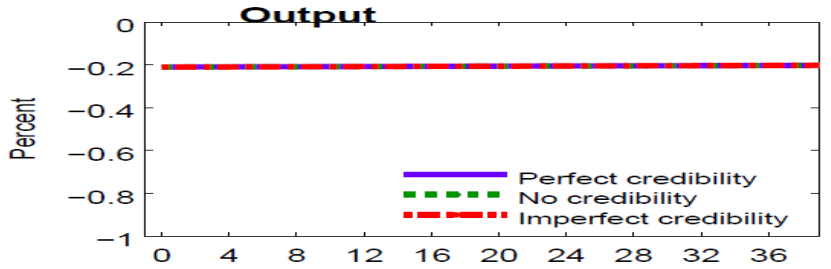

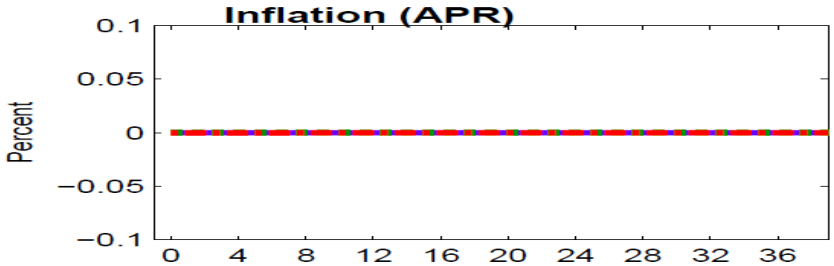

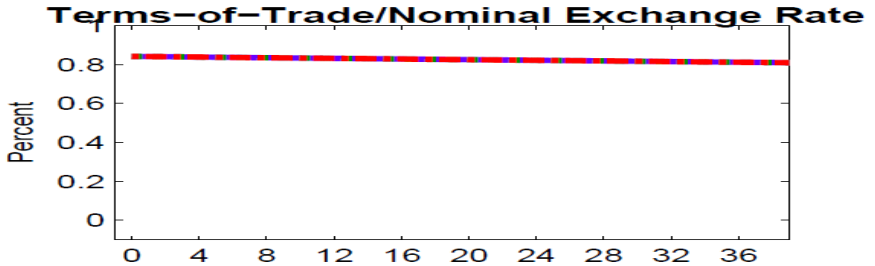

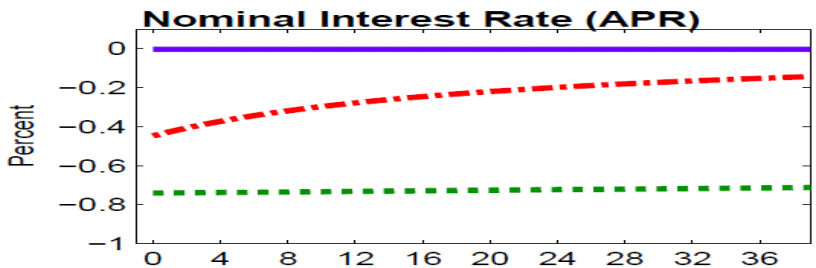

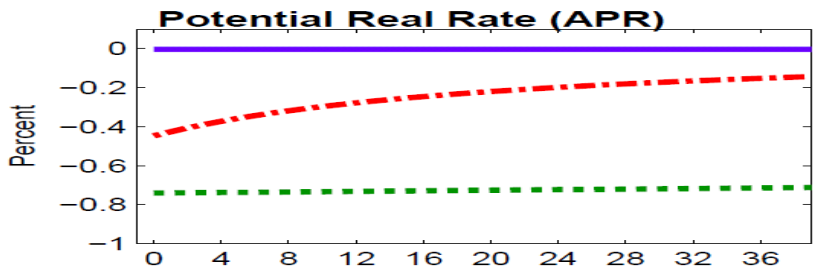

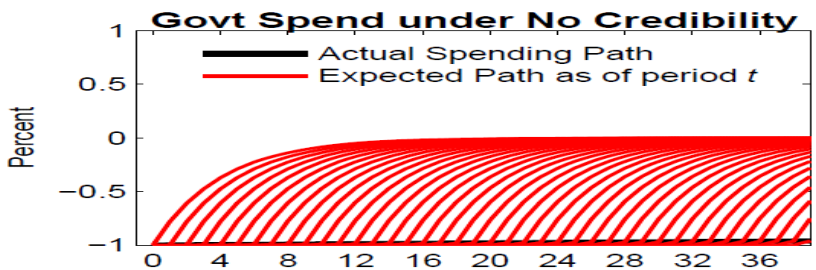

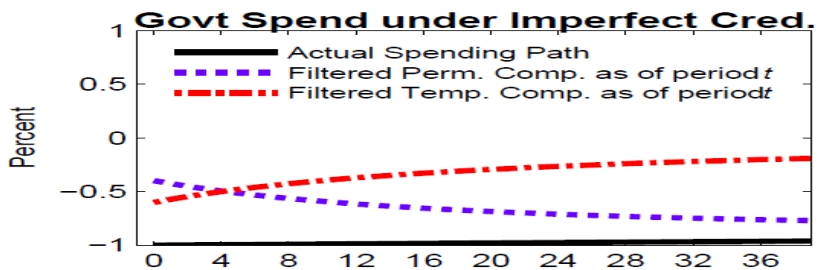

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- Figure 2 shows results in CU case

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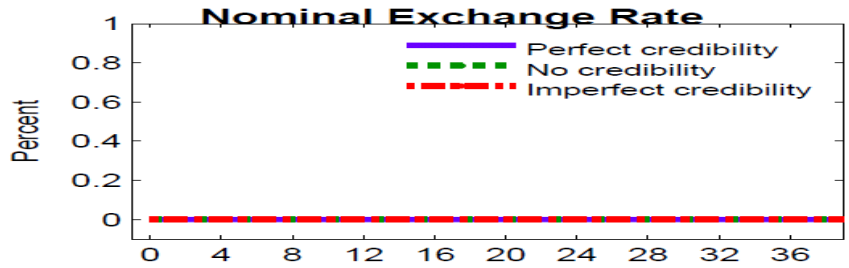

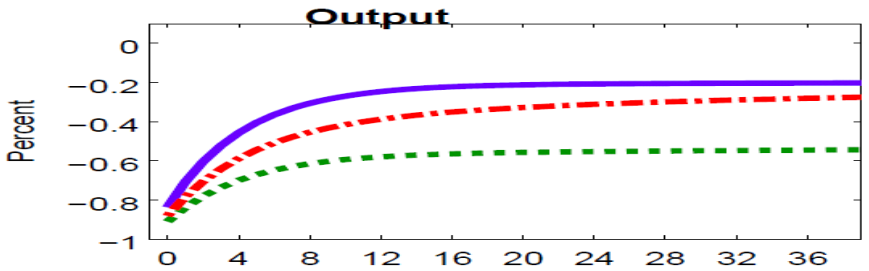

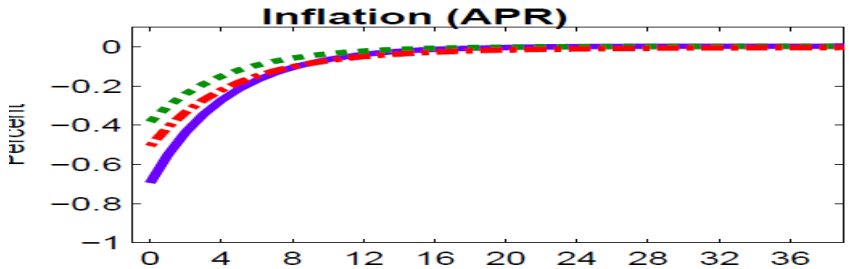

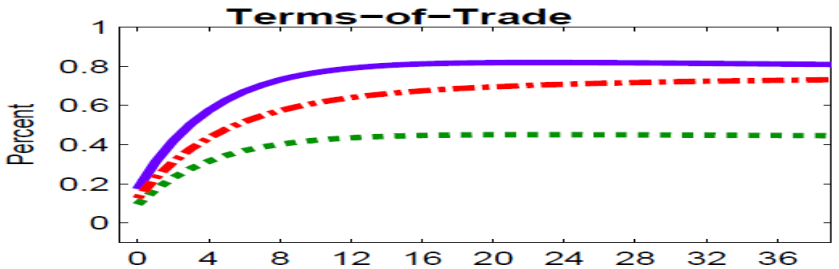

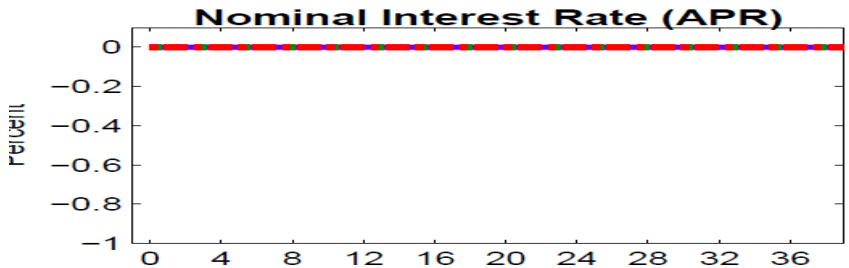

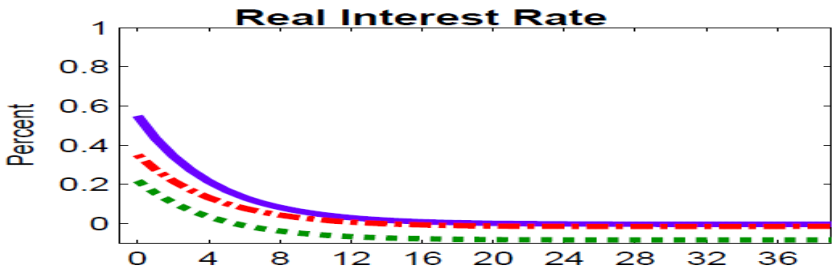

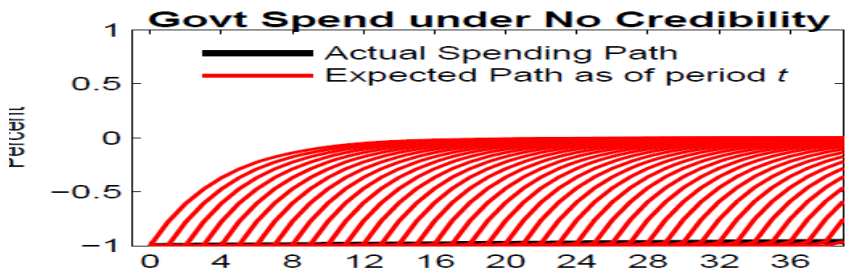

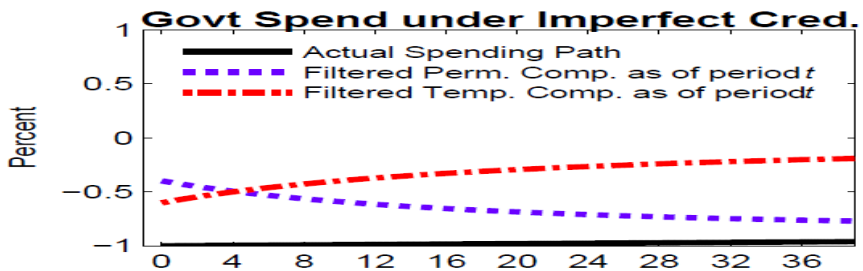

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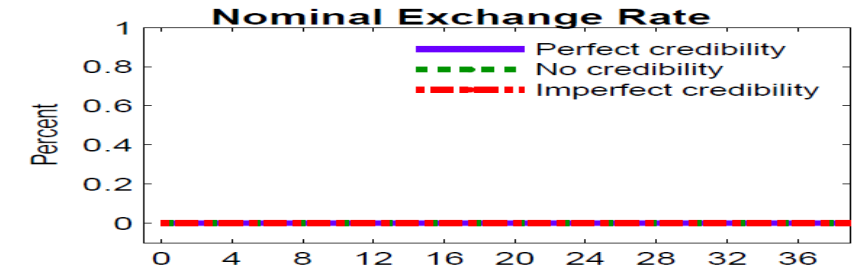

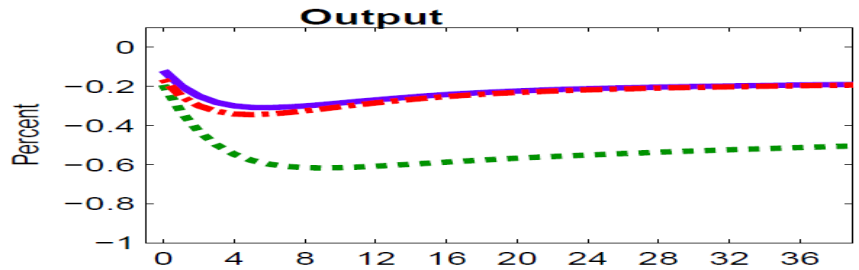

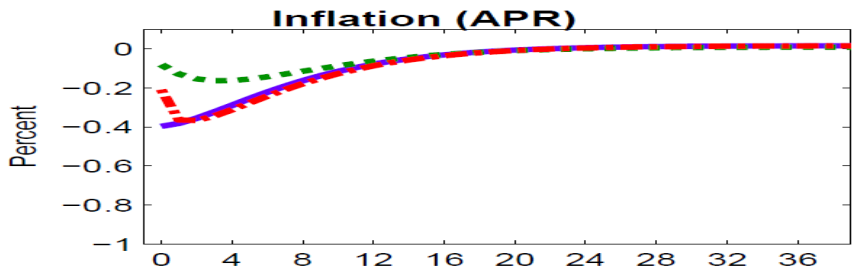

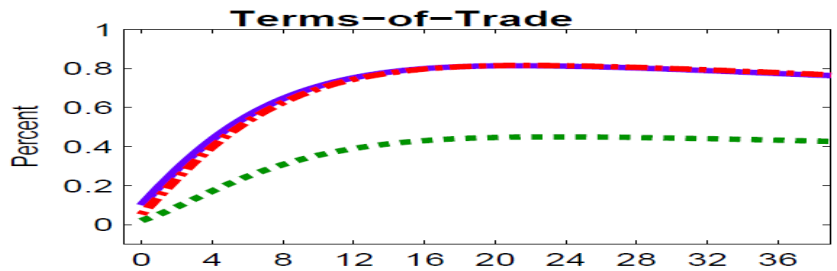

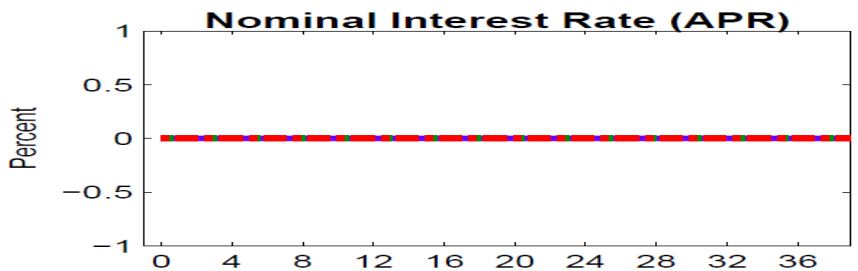

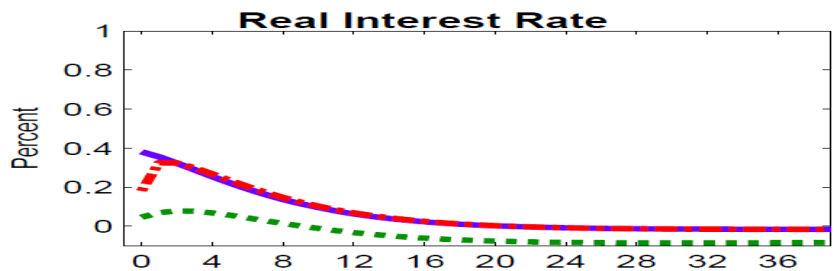

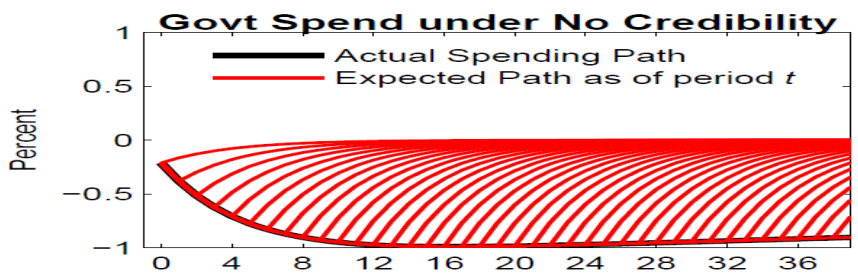

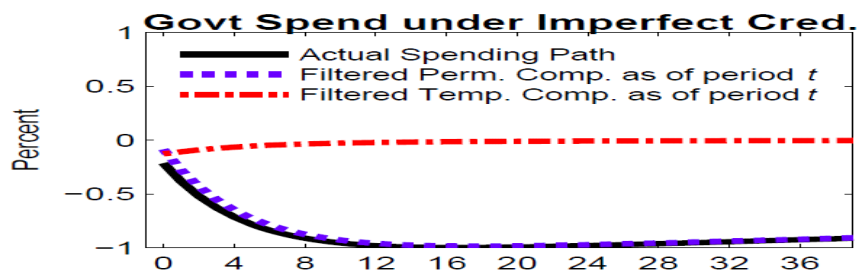

Robustness analysis in fully-fledged model

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Robustness analysis in fully-fledged model

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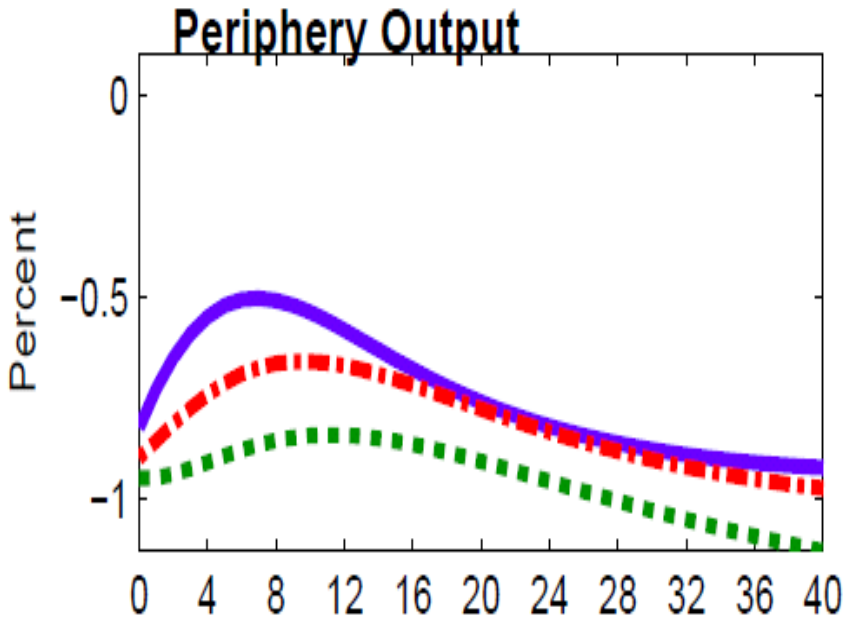
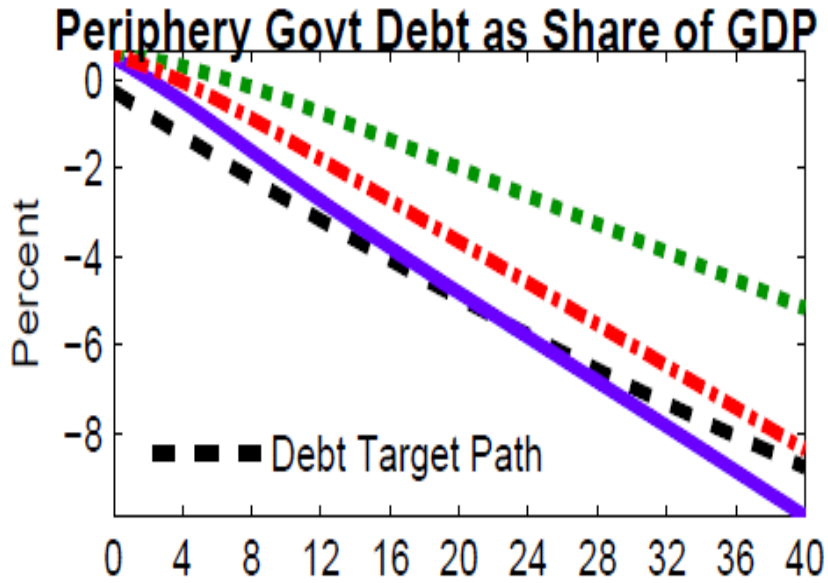
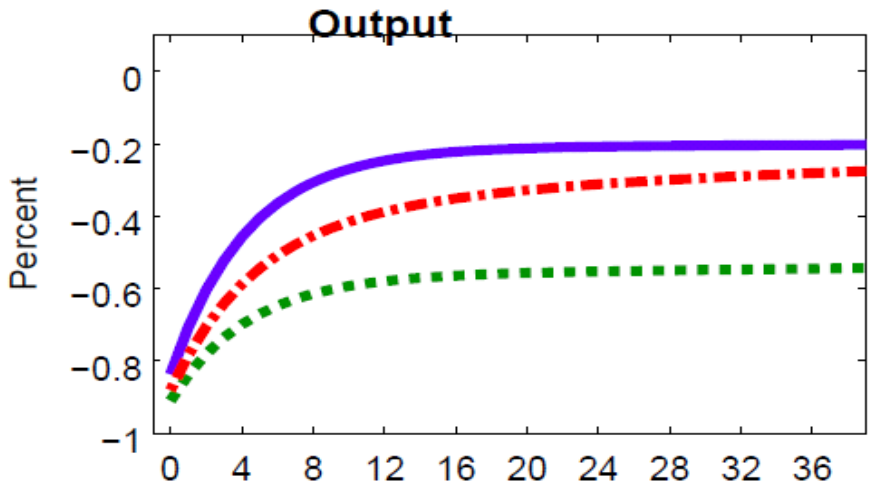
Impact of credibility in fully-fledged model

1 percent cut in spending: comparing workhorse with simple model





- Stylized Model:



Robustness analysis in fully-fledged model

Allow for endogenous spreads

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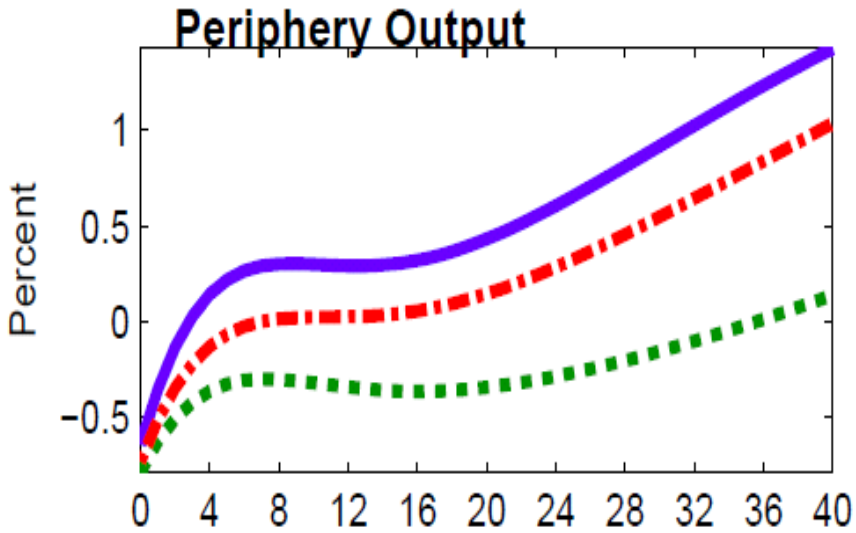
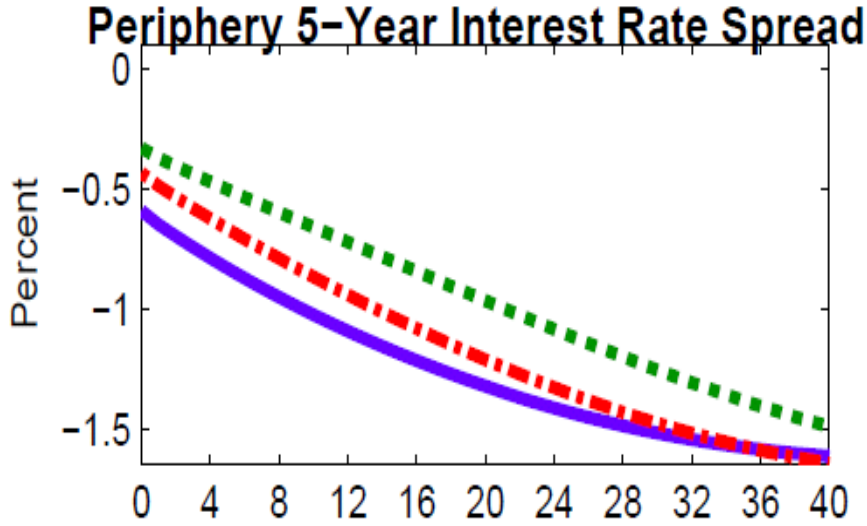
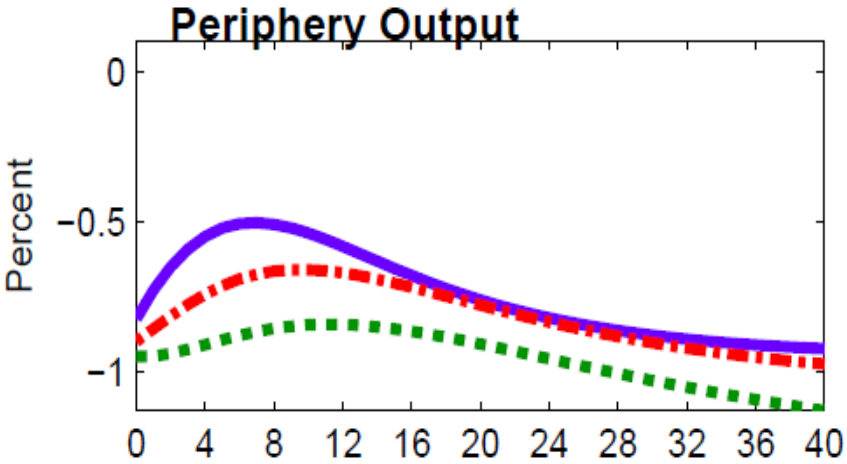
Impact of endogenous spreads

1 percent spending cut in fully-fledged model with endogenous spreads





- No Endog. Spreads:



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Impact of pace of adjustment under imperfect credibility

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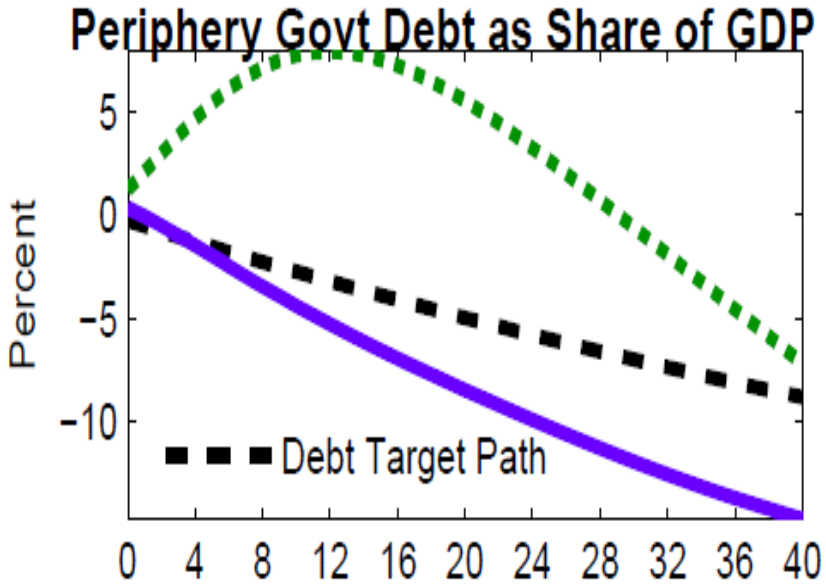

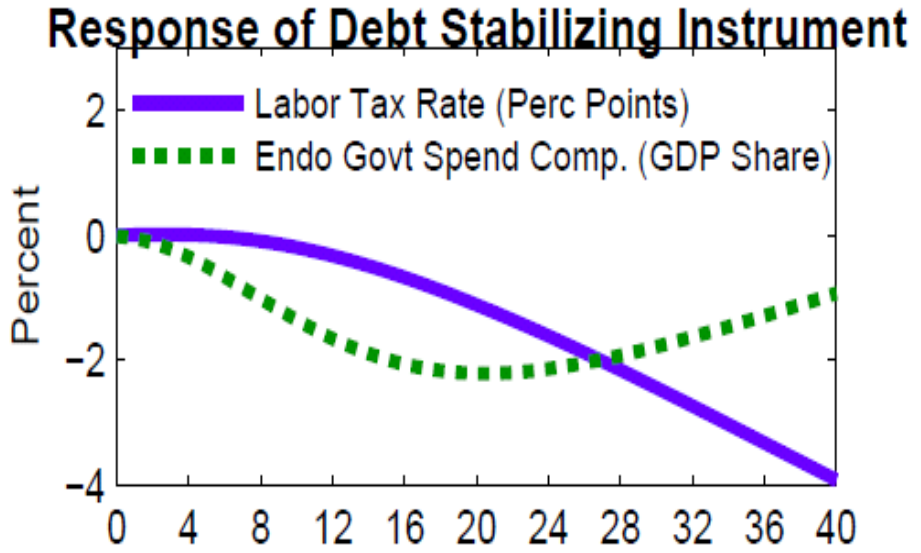

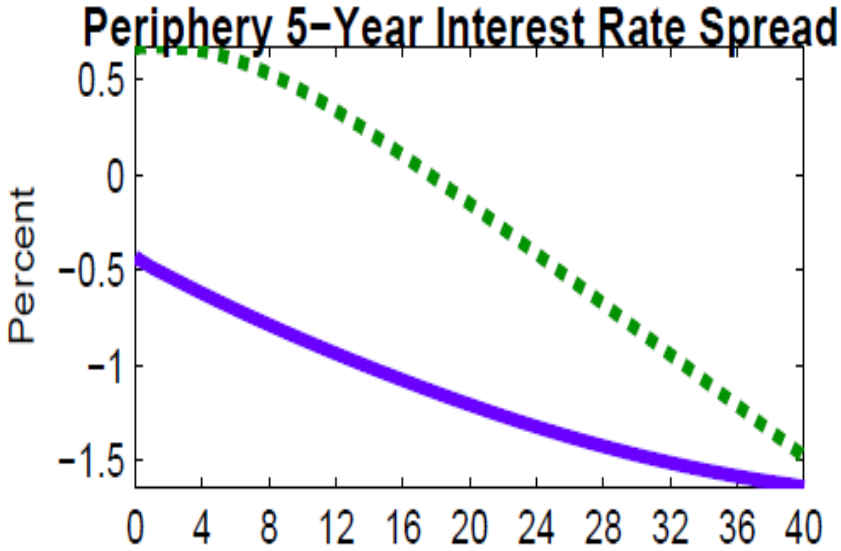

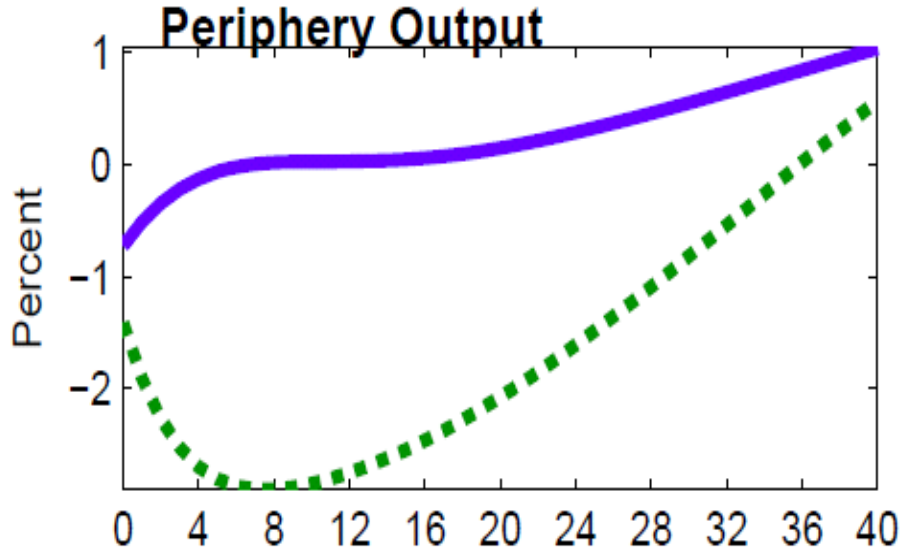

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- View current results as a first pass, in next version we intend to measure degree of fiscal credibility using OECD forecasts for selected euro area countries and compare with the U.S.