Monetary–fiscal interactions during large-scale asset purchase programs

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This paper

- Identifies monetary policy shocks using framework by Swanson (2021) in 14 small open economies (10 EMs, 4 AEs) in period 2011-2023
- Estimates effects of asset purchase programs on financial and macroeconomic variables using monthly local projections
- Shows that **APPs stimulated output, but decreased consumer prices**
- Studies how the effects of APPs depend on domestic fiscal policy
- Finds that **government purchases crowded in private consumption and had a large effect on inflation**
- Proposes a simple theoretical framework that can **rationalize these empirical findings (key ingredient: fiscal dominance)**

Motivation

- Asset purchase programs (APPs) in a number of countries following the outbreak of the Covid-19 pandemic ...
- ... coincided with the massive issuance of bonds by the governments
- Will the swelling public debt be eventually repaid or rather inflated away?
- Fiscal dominance can significantly change the transmission of many standard shocks and policies (Smets and Wouters, 2024)

Related literature

- Monetary policy and high frequency identification method: e.g., Gürkaynak et al. (2005), Altavilla et al. (2019), Swanson (2021)
- Identification of monetary policy shocks for multiple countries: e.g., Brandao-Marques et al. (2021), Deb et al. (2023), Checo et al. (2024)
- Kitagawa-Blinder-Oaxaca (KBO) decomposition in the macroeconomic context: e.g., Cloyne et al. (2020), Kolasa and Wesołowski (2024)
- Bond market segmentation frameworks: e.g., Andres et al. (2004), Chen et al. (2012), Kiley (2014)
- Monetary-fiscal interactions: e.g.,Leeper (1991), Cochrane (2001), Bianchi et al. (2020), Barro and Bianchi (2023), Witheridge (2024)

Contribution

- **Data**: new database on monetary policy shocks in 14 economies accounting for APPs
- **Empirical findings** on APPs after the Covid outbreak
- **Theoretical**: fiscal dominance in the context of APPs in small open economies (in particular - EMs)

Empirical evidence

Identification of monetary policy shocks

- Swanson (2021) method applied to small open economies
- monetary policy actions dates from Bloomberg, Fratto et al. (2021) and Rebucci et al. (2020)
- 2-day windows for interest rates of varying tenors instead of intraday as markets relatively illiquid
- clean from the effects of global interest rates
- APP shocks identification by minimizing variance before the first APP announcements and since 2022
- clean from the information effects (using stock prices) in the spirit of Jarociński and Karadi (2020)

Empirical framework

- Local projection based on Jordà (2005):

$$y_{j,t+h} - y_{j,t-1} = \alpha_{j,h} + \beta_h \varepsilon_{j,t} + \mathbf{x}_{j,t}\gamma_h + \nu_{j,t+h}$$

- KBO decomposition as in Cloyne et al. (2020):
  - cross-country heterogeneity in sensitivity of fiscal policy to APP shocks:

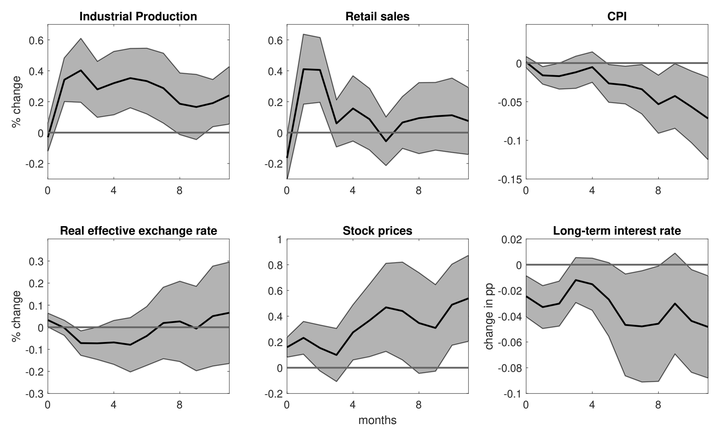
$$G_{j,t+h} - G_{j,t-1} = \alpha_{j,h} + \sum_{i=1}^{j} \varepsilon_{j,t} I(j=i)\Theta_j^h + (\mathbf{x}_{j,t} - \bar{\mathbf{x}}_j)\gamma_h + \nu_{j,t+h}$$

  - decomposition of endogenous variable responses accounting for both direct effect and monetary-fiscal interaction. On top of this: interactions of controls and direct effect of controls

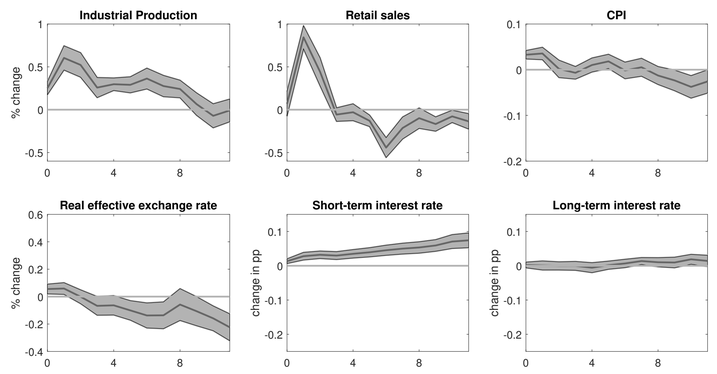
$$y_{j,t+h} - y_{j,t-1} = \alpha_{j,h} + \beta_h \varepsilon_{j,t} + \boldsymbol{\varepsilon_{j,t}}\left(\boldsymbol{\Theta_j^h} - \bar{\boldsymbol{\Theta}}^{\boldsymbol{h}}\right)\theta_\varepsilon^h + \ldots + \nu_{j,t+h}$$

Impulse response to an APP shock

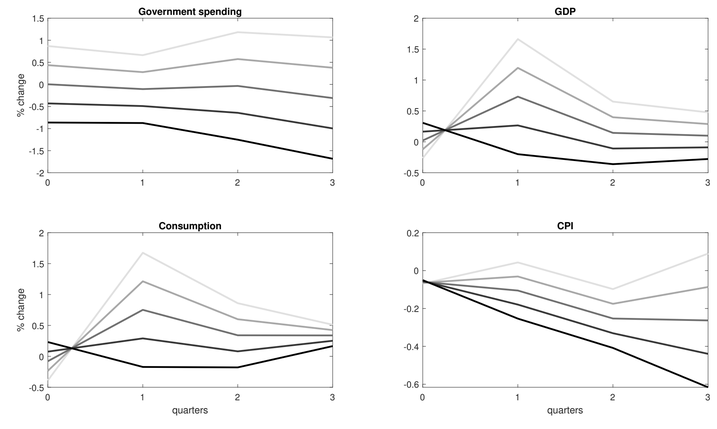
Full sample



Advanced Economies



The role of fiscal policy for APP transmission



Theoretical framework

- asset market segmentation in NK DSGE model
- monetary policy:

$$\frac{R_t}{R} = \left(\frac{\pi_t}{\pi}\right)^{\gamma_\pi}\left(\frac{y_t}{y}\right)^{\gamma_y}$$

$$\frac{P_{L,t}L_t^C}{F_t^G} = \frac{P_L L^C}{F^G} + \epsilon_t^{QE}$$

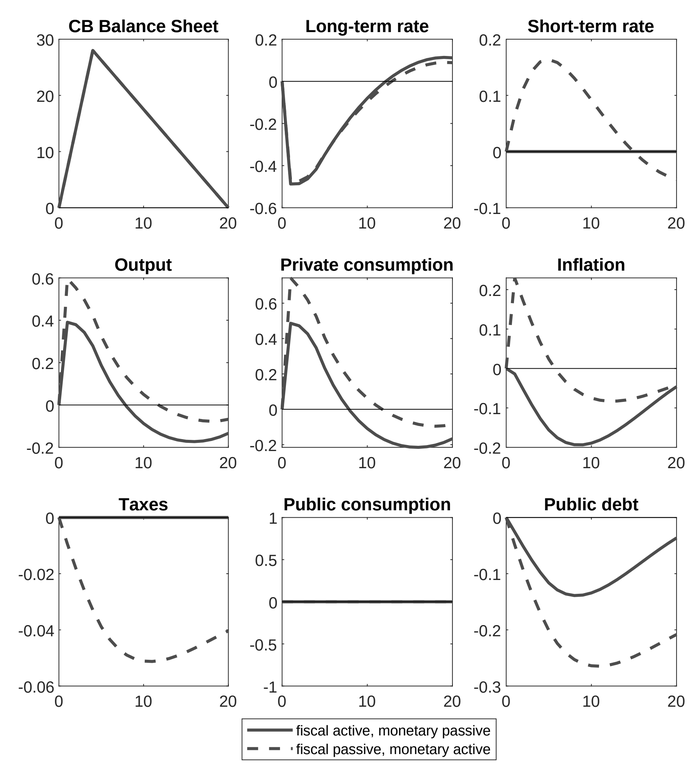
- fiscal policy:

$$\frac{T_t}{P_t} = \phi\left(\frac{F_t^G}{P_t} - \frac{F^G}{P}\right)$$

- two policy mixes:
  - fiscal active / monetary passive: : $\phi = 0$, $\gamma_\pi = 0$, $\gamma_y = 0$
  - fiscal passive/ monetary active: $\phi = 0.01$, $\gamma_\pi = 1.5$, $\gamma_y = 0.125$

Model simulations

Responses to asset purchases



Responses to increase in public consumption