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EXIT STRATEGIES FROM QUANTITATIVE EASING: THE ROLE OF THE FISCAL-MONETARY POLICY MIX

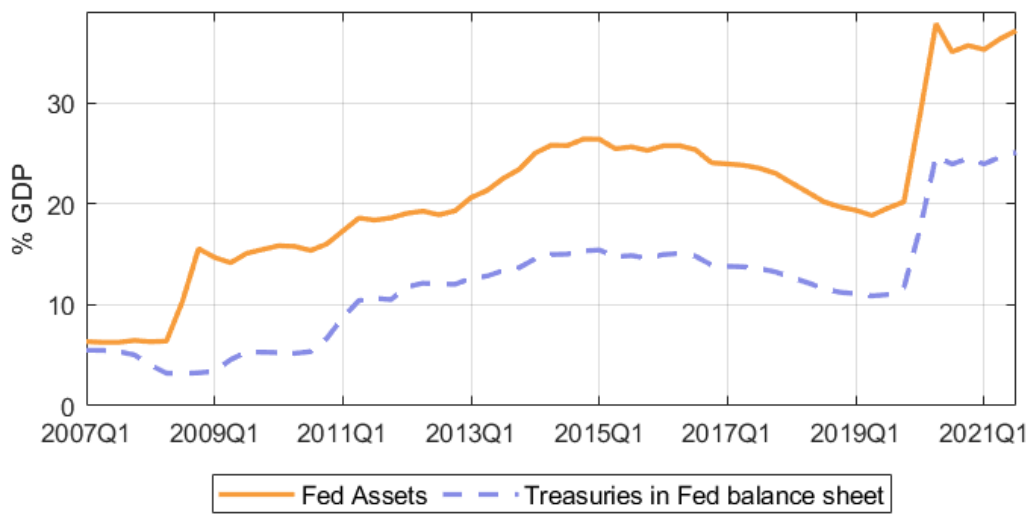**EUROPEAN CENTRAL BANK**

EUROSYSTEM

Exit strategies from Quantitative Easing: the role of the fiscal-monetary policy mix

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Motivation

- Federal Reserve's balance sheet expansion
- Assets purchases: mainly long-term treasuries

Note: Federal Reserve's balance sheet. Source: US Financial Accounts.

- **New challenge:** high inflation in the context of large public debt-to-GDP ratio and expanded central bank balance sheet
- Increases in the policy rate with balance sheet reduction, i.e. Quantitative Tightening (QT)

This paper:

Studies the impact of QT on inflation, sovereign debt, and interest rates, **considering the interaction between fiscal-monetary policies**

Macroeconomic effects of QT

- Central bank reduces purchases of (or sells) government bonds
- ↓ price of government bonds
- ↓ Central bank profits, ↑ debt service, ↑ public debt

Key: how the central bank and government stabilize public debt

- The government adjust primary fiscal surplus: Monetary-led regime
- The central bank allows inflation rate to adjust: Fiscally-led regime

Regime-switching NK-DSGE model calibrated to the US economy

Simulate the COVID-19 crisis, policy response, QT under **different regimes**

Model

Regime-Switching NK-DSGE model:

- Agents: Firms, Households (HH), Financial Intermediaries (FI), Fiscal Authority, Monetary Authority
- Short-term public bonds/reserves: B_t^S, price $Q_t^S = \frac{1}{R_t}$, 1 period maturity
- Long-term public bonds: B_t^L, price Q_t^L, maturity $1/\delta$
- Market segmentation and leverage constraint in FI, Elenev et al., 2021

Fiscal rule for taxes
$$\tau_t - \tau^* = \rho_\tau(\tau_{t-1} - \tau^*) + (1-\rho_\tau)\gamma(b_{t-1} - \bar{b}) + e^{\sigma_\tau \epsilon_t^\tau}$$

Monetary policy

Taylor rule
$$\frac{R_t}{\bar{R}} = \left(\frac{R_{t-1}}{\bar{R}}\right)^{\alpha_R}\left[\left(\frac{\pi_t}{\bar{\pi}}\right)^{\alpha_\pi}\left(\frac{y_t}{\bar{y}}\right)^{\alpha_y}\right]^{1-\alpha_R} e^{\sigma_M \epsilon_t^M}$$

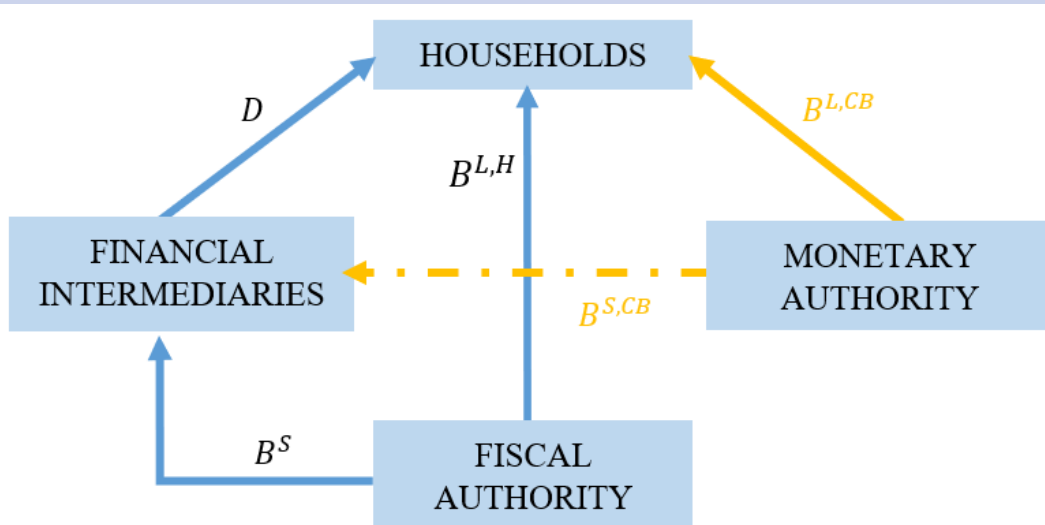QE: buy long-term public bond from households, issuing reserves to FI

$$\frac{B_t^{L,CB}}{P_t} = b_t^{L,CB} = (1-\rho^{QE})b_*^{L,CB} + \sigma^{QE}b_{t-1}^{L,CB} + \rho^{QE}\epsilon_t^{QE}$$

Regime-Switching parameters in policy rules, Bianchi & Melosi (2017)

Policy regimes:
- Monetary-led regime (M): high α_π, γ
- Fiscally-led regime (F): low α_π, γ
- Zero lower bound (ZLB): $\bar{R} \approx 1, \alpha_\pi = \gamma = 0$

Transmission mechanism of QT

- ↓ Q_t^L, and the term spread increases
- Wealth and substitution effect: recessive and deflationary
- ↓Central bank profits, ↑debt service, ↑public debt

COVID-19 crisis simulation

1. Simulate the COVID-19 crisis in the US:
- 50.000 samples
- Negative demand and supply shocks
- Regime: stochastic every period, at each sample
2. QE program: increase the central bank balance sheet-to-GDP by 13p.p., and compare dynamics with and without QE
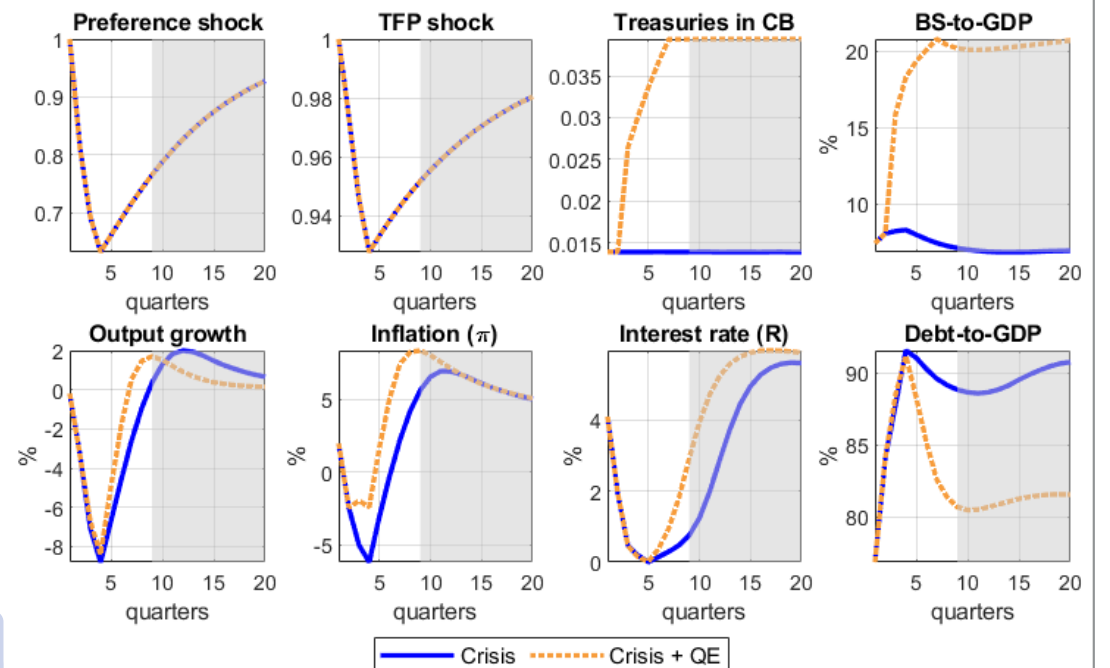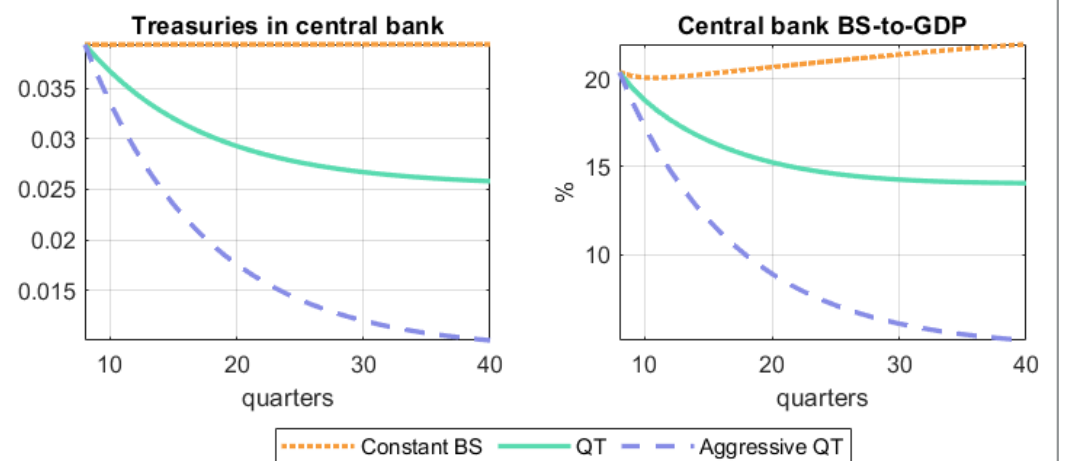

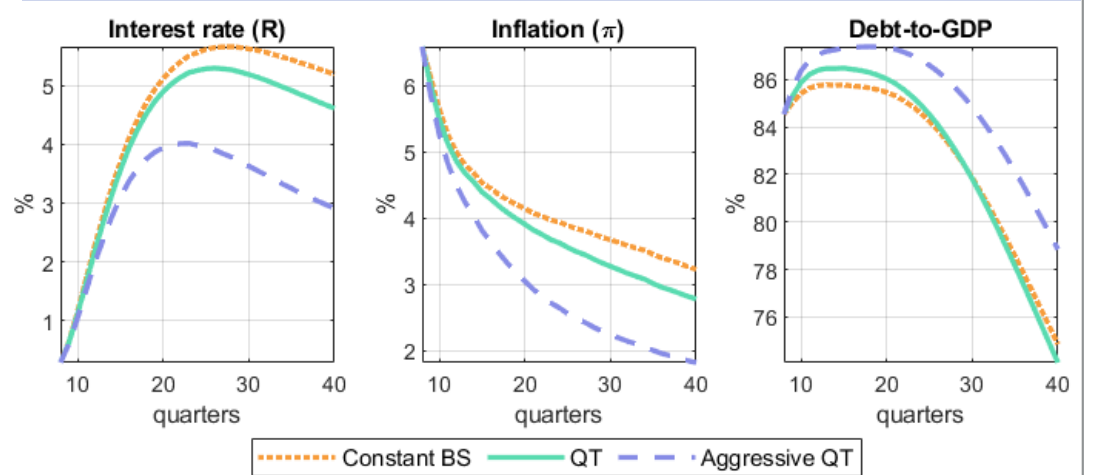*Note: Simulated crisis. Average from 50.000 samples. Annualized variables.*

Unwinding the central bank balance sheet

Study exit strategies in the recovery, from t=9:
- **Constant balance sheet (BS):** Maintain the size around 20% of GDP
- **QT:** Don't repurchase matured bonds (speed δ)
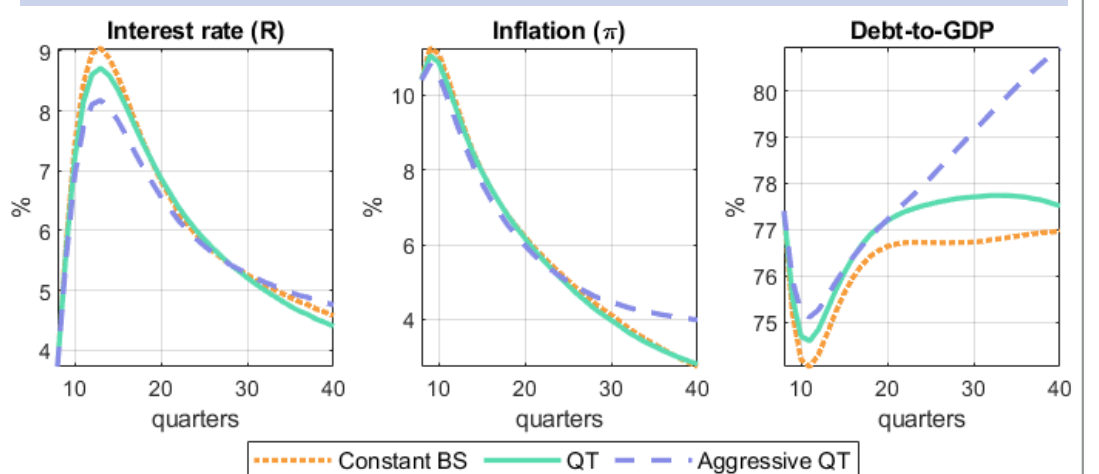- **Aggressive QT:** sales of bonds (speed > δ)

QT at Monetary-led regime

Note: Subsample with monetary-led regime at exit. Plots since t=8.

- QT: ↓ Inflation, ↑ public debt
- **Monetary-led regime:** ↑ public debt → ↑ taxes

QT at Fiscally-led regime

Note: Subsample with fiscally-led regime at exit. Plots since t=8.

- QT: ↓ Inflation, ↑ public debt
- **Fiscally-led regime:** ↑ public debt → ↑ inflation

Conclusions

Macroeconomic effects of QT depend on Fiscal-Monetary policy mix

- Monetary-led regime: Decreases inflation
- Fiscally-led regime: Debt and spreads increase, little effect on inflation

- Without an appropriate fiscal framework to stabilize debt, there are no clear advantages of doing QT

References

Bianchi, F. and L. Melosi (2017): "Escaping the great recession," AER, 107, 1030–58.
Elenev, V., T. Landvoigt, P. J. Shultz, and S. Van Nieuwerburgh (2021): "Can Monetary Policy Create Fiscal Capacity?" NBER WP 29129