Managing Monetary Policy Normalization

by Gianluca and Pierpaolo Benigno

Discussion by Elisa Rubbo

October 10, 2022

- NK models with ZLB and unconventional policies
  - forward guidance, spending multipliers, taxes...
  - this paper: liquidity and reserve management

- Two interest rates:

$$\frac{U_{ct}}{U_{ct+1}}\frac{P_{t+1}}{P_t} = \beta\left(1+i^B\right),\ i^B - i^R \geq 0$$

- $R \uparrow \Longrightarrow i^B \downarrow$, even if $i^R = 0$
  - comes at the cost of distortionary taxation

Roadmap

- Nice positive model of reserve management
  - review the argument
- Normative implications
  - which tax instruments?
  - CB asset portfolio $\rightarrow$ costs and benefits of issuing liquidity?
  - ZLB vs credit supply

Assets and returns

Private banks	
Assets	Liabilities
Reserves	Deposits
Private bonds	Equity

Government	
Assets	Liabilities
Tax revenues	Reserves
Seignorage	Gov't bonds

- Utility benefit from holding liquid assets $\rightarrow$ spread $i^B \geq i^D$
- Deposits backed by reserves ($D \leq \rho R$) $\rightarrow$ spread $i^D \geq i^R$

Two ways of creating liquidity

- Change composition of government liabilities
  - issue reserves to purchase T-bills
  - consumers shift from holding T-bills to holding deposits
  - works if $\rho < 1$ ($R \uparrow \Longrightarrow D \uparrow\uparrow$)
- Increase size of government balance sheet
  - do so by issuing either bonds or reserves
  - only option if $\rho = 1$

Optimal amount of liquidity

- Steady-state:
  - utility benefit vs distortionary taxation
  - liquidity demand not satiated
- ZLB:
  - deviate from optimal liquidity-tax tradeoff
  - $q \uparrow \rightarrow i^B \downarrow \rightarrow y_t$, π_t fall less for given expected future inflation
- Loss function:

$$\frac{1}{2}\mathbb{E}_0 \sum_{t=0}^{\infty} \beta^t \left[(y_t - y^*)^2 + \mu (q_t - q^*)^2 + \frac{\theta}{\kappa} (\pi_t - \pi^*)^2 \right]$$

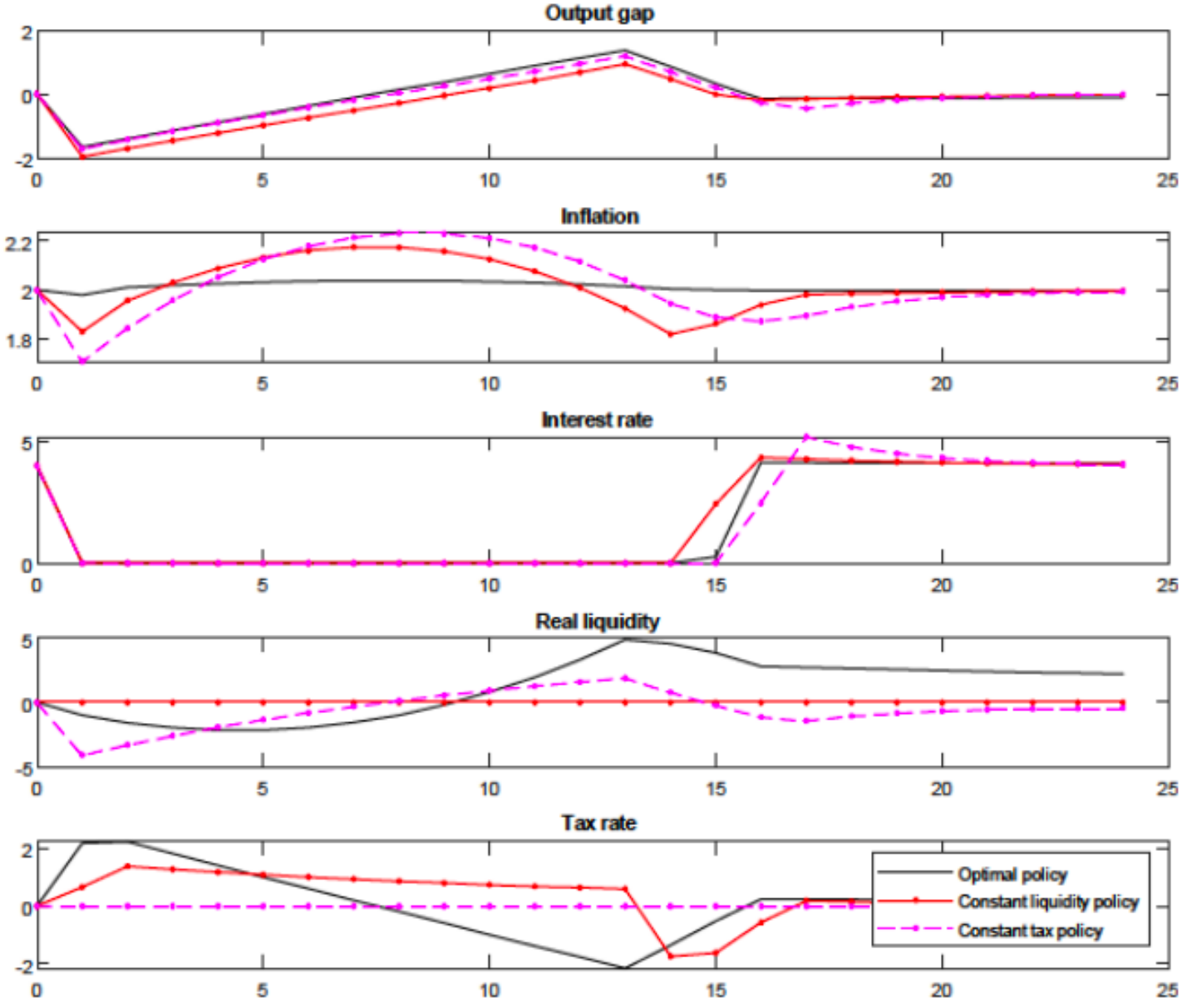
Optimal reserve policy

- Rich dynamics
  - timing of reserve accumulation matters
  - and depends on weight on inflation vs output
- What's the benchmark?
  - always have active liquidity or tax management
  - what about second-best with constant liquidity and taxes?
- Assumptions about tax instruments matter

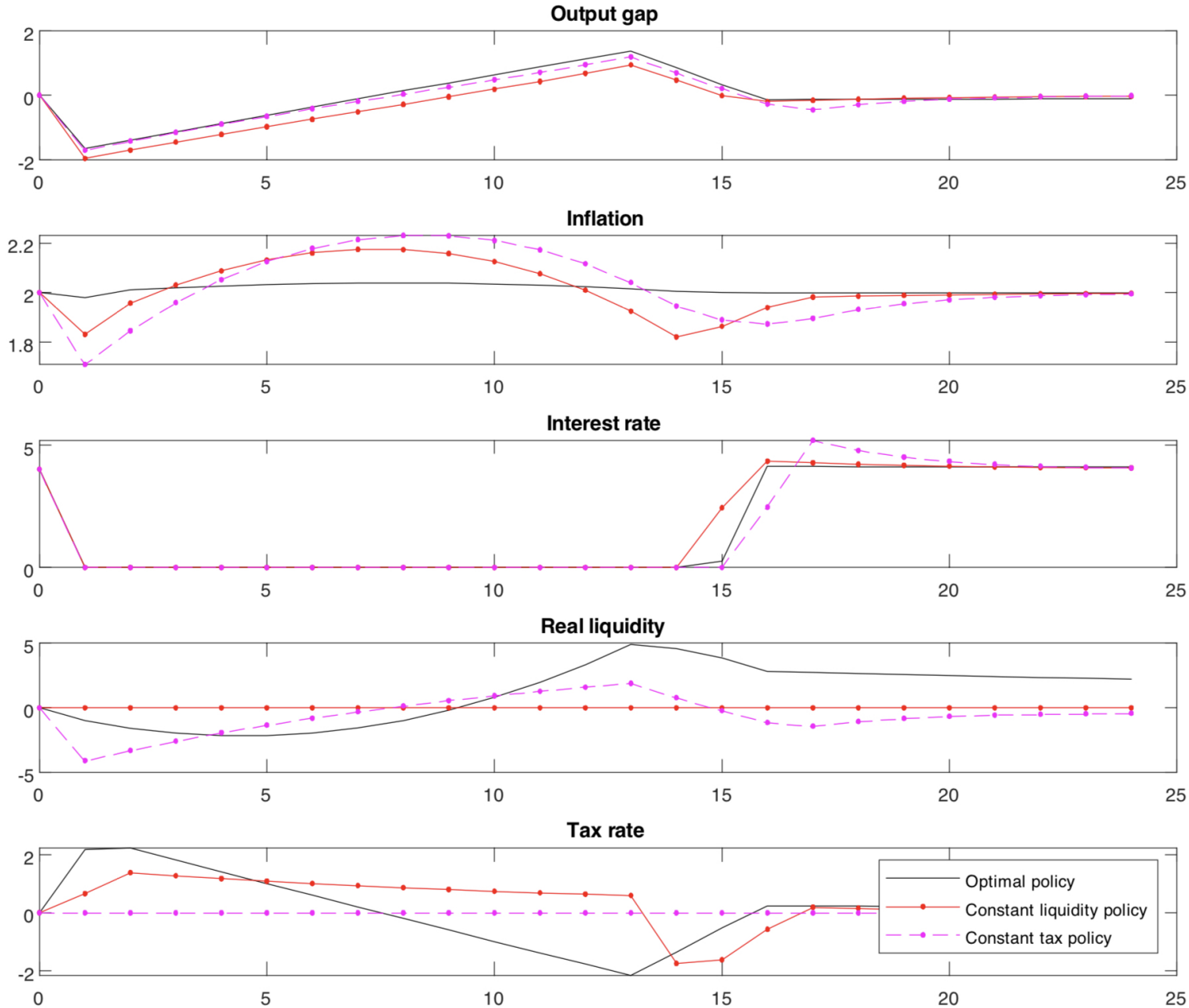
Tax instruments

- Only output tax, no wage subsidy
  - creates inflation
  - lowers real wage $\rightarrow$ labor supply
- Important restriction:
  - rules out ZLB stabilization with tax policy (Correia et al.)
  - shapes optimal tax and reserve path

CB cares about inflation



CB cares about output



Liquidity: costs and benefits

- Gov't debt $\uparrow \Longrightarrow$ transfer resources to constrained agents $\Longrightarrow$ output $\uparrow$
  - low-MPC savers to high-MPC borrowers
  - unproductive savers to productive entrepreneurs
- Focus on gov't bond purchases
  - but CB can buy private assets directly
  - with no need to raise distortionary taxes
- What if balance sheet expansion financed by foreign?
- Financial market reaction, communication ("taper tantrum")

Conclusion

- Workhorse model of reserve management
  - reserve policy$\longleftrightarrow$ spreads $\longleftrightarrow$ gov't budget
- Normative analysis
  - great baseline
  - reserves vs tax instruments
  - allocative role of liquidity, CB portfolio
  - interaction with financial markets