The theory of unconventional monetary policy

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Overview

Setup explicit model where OMO have distributional effects

Objective: discuss “risk composition” of CB balance sheet

Key questions:

– do OMO matter (for allocations)?

– what about non-standard OMO (e.g. trading Bonds for Equity)?

– can CB policy improve welfare (i.e. complete markets)?

Bottomline: lots of food for tough in simple model highly pedagogical: explicit fiscal-monetary nexus, distributional effects (Wallace’s irrelevance, non-Ricardian effects)
Main ingredients of the theory

2 period model (flex prices, MIU), all vars in dollars:

- **heterogenous agents**: 2 workers and 1 entrepreneur

- **redistributive taxation** $T_1 = T_2 = T_3$, transfers $TR_1 = TR_2 = \frac{QB}{2}$, $TR_3 = 0$

- **segmented asset markets**: only workers (i=1,2) buy $B$ and get $TR_i > 0$

- **incomplete asset markets** (NO AD securities)
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Note: workers’ nominal wealth $\mathcal{W}_i$

$$\mathcal{W}_i = w + \frac{TR_i}{Q} - T_i = (\text{use budg. const}) = w + \frac{B}{2} - \frac{B}{3} - \frac{rM}{3}$$

- nominal bonds are net wealth (no ricardian equivalence)
- monetary policy $M$ sets seigniorage tax ($rM$) for given $B$
Proposition 1. Let \( \{M, B\} \geq 0 \) characterize monetary and fiscal policy, and let \( w > 0 \) satisfy the feasibility conditions,

\[
w \geq \frac{\mu_i B}{4(1+\lambda+\mu)-6\mu_i}, \quad i \in \{1,2\} \quad \text{and} \quad w \geq \frac{2-\mu+\lambda(2-3\alpha)B}{\mu+\alpha\lambda}.
\]

(23)

The equilibrium level of nominal wealth, the interest rate, the real wage and are given by,

\[
\mathcal{W} = \frac{6w+B}{2(1+\lambda+\mu)}, \quad r = \frac{\gamma}{M} \mathcal{W}, \quad \frac{w}{p} = \alpha \left(2-\frac{\mu\mathcal{W}}{w}\right)^{\alpha-1}.
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The equilibrium values of \( \{n_i,M_i\}_{i \in 1,2}, \{c_i\}_{i=1,2,3}, y, n \) are determined by equations (11) – (13) and (16) – (18) respectively. \( \square \)

3 equations (24) in 4 vars: \( \mathcal{W}, w, p, r \): (real) multiplicity if \( \alpha < 1 \), Homo-1

– real allocations indexed by e.g. \( w \) (nominal wage): 1-eq given \( B/w \)
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– alternatively: fixing \( r \) (small open ec. or economy with capital) would do
Channels for redistribution and OMO “relevance”

- targeted fiscal transfers $TR_i$ redistribute from EE to workers
- OMO (increase $\theta = M/B$) redistributes towards EE: $T_3 = \frac{B-rM}{3} = B\frac{1-r\theta}{3}$
- notice “equivalence” between fiscal ($T_i, B$) and monetary policy ($M$)
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- Prop. 8: monetary policy replicates CM with IM + segmented model.
  – technically: bonds and equity purchases by CB replicate CM payoffs
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- venerable tradition, some great papers in this line:
    how you get liquidity effects via incomplete participation (segmentation)
    liquidity and output effects via segmentation, mostly impact effect, some have propagation
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  - multiple equilibria not needed (alternatively: endowment shocks)
  - differential fiscal taxation ($T_1 > 0, T_3 = 0$) not needed
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  - Note: unconventional policy is about providing social insurance

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- nice talking about risk management equity vs bonds vs money .... but
  - (1) the theory behind such assets is very ad hoc: $M$ not “essential” !
  - (2) would agents replicate CB policy by themselves if we let them?