Public Liquidity and Bank Lending: Treasuries, Quantitative Easing, and Central Bank Digital Currency

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prepared for the

2020 ECB Annual Money Market Conference

November 22, 2020

Main Idea

What the paper does

- Establishes Empirics:
  Increase in the supply of Treasury Debt-to-GDP ratio
  - reduces credit of firms intermediated by banks,
  - reduces GDP,
  - but has no statistically significant effect on investment.
- Provides theoretical microfoundation for these findings

How much public liquidity provision is optimal?

Trade-Off:

- +: Public liquidity is safer than private liquidity
- −: Pub. liquid. crowds out credit intermediated by banks.
  - Banks are investment experts
  - Bank debt risky
  - Banks are subject to moral hazard [Holmstrom-Tirole (1998)]: wedge between full value and external value of the firm ⇒ demand liquidity

Main Set-Up: Treasury Bond Case

- Three time periods: $0, 1, 2$ (sub-periods)
- Two states: high, low
- 3 (4) agent types: HH's, government, banks, (central bank)
- HH's investment opportunities:
  - Public debt B: Treasury bonds, safe, backed by taxation
  - Bank debt D: risky, moral hazard but more efficient
  - Direct capital investment K: risky, no moral hazard, less efficient
- **Objective:** Maximize HH's expected utility

$$p_h \ (\log(C_{1,h}) + C_{2,h}) + p_l \ (\log(C_{1,l}) + C_{2,l}) \qquad (1)$$

s.t.

- market clearing of Treasury bond and private debt market
- banks maximizing profits
- budget and moral hazard constraints

Main Result: Treasury Bond Case

In the limit case: $\theta \to \phi, \theta > \phi$:

- In the optimum: Not all liquidity is provided by the goverment $\bar{B}^* < 1$ but also by private banks despite moral hazard (unless banks have no technological advantage)
- In equilibrium (but away from optimum), as public debt provision $\bar{B}$ increases,
  - private debt is reduced,
  - HH's and banks direct investment is reduced (matching empirics)

Similar results for the case of QE and CBDC

Comments

This is a very interesting and timely paper:

QE during times of Corona

Comment: Deposit Insurance

The paper

- focuses on the limit case $\theta \to \phi$, $\theta > \phi$
- states that for severe moral hazard ($\theta >> \phi$), private debt is crowded out completely.

Q: Is the crowding out driven by riskiness of private debt or the extreme moral hazard?

Idea: Under complete, government-financed deposit insurance, private debt is as safe as public debt.

Q: Can deposit insurance make up for moral hazard, such that HH's investment in private debt prevails in the optimum under $\theta >> \phi$?

Comment: Safety of Public Debt and Twin Crises

Assumption in the paper: Public debt is safe.
Riskiness of bank debt has no direct implications for sovereign.
Here: banks do not invest in public debt

But: **Brunnermeier's: 'doom loop' (Twin crises)**

- If banks invest in government debt and...
- ... governments guarantee bank liabilities

$\Rightarrow$ **Sovering and bank balance sheets are interconnected**

sovereign crises $\Leftrightarrow$ banking crises
(risks are pos. correlated)

How would the riskiness of public debt and the correlation of risks affect the optimal provision of public liquidity?

Comment: International Capital Markets

In the paper:
'Public liquidity' is provided by one government (central bank) to domestic HH's

In real life: Capital and money markets are international.

- Foreign governments and central banks can provide liquidity to domestic HH's.
- Foreign HH's can demand domestic public liquidity or private debt.

Beware of the Interaction between the collective action of governments (central banks) and the collective behavior of all HH's
$\Rightarrow$ Optimal public liquidity in one country depends on public liquidity provided abroad

The End