

Discussion of "Scarcity of Safe Assets, Inflation, and the Policy Trap" by Andolfatto and Williamson

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Goal

- Explain the behavior of inflation and interest rate during and after the Great Recession
 - Short-term nominal interest rate close to zero but positive inflation
 - Inflation has been falling with the unemployment rate since 2012
 - Velocity of money declined since 2009
 - Inflation rate has fallen below inflation targets
- Inconsistent with either NK theory or the quantity theory of money

Solution

- Allow government bond to act as a safe asset/collateral when private credit is constrained.
- Liquidity premium to bond return = inflation, when nominal interest rate is zero.
- Using Taylor rule tends to draw the economy to the liquidity trap with inflation below the central bank's target.

Key Equations: moneyless economy

Households can only save intertemporally, i.e. $b_{t+1} \geq 0$:

$$EE : u'(c_t^1) \geq \beta \frac{1}{q_t} E_t \left[\frac{u'(c_{t+1}^1)}{\pi_{t+1}} \right]$$

- Efficient consumption c^*

$u'(c^*) = \gamma$ where γ is the production cost

- Real interest rate $= 1/\beta$.
- Higher nominal interest rate $1/q_t$, lower c_t^1 .

Key Equations: money goods

Suppose that consumption has to be purchased using money, additional Euler Equation for money holding

$$u'(c_t^1) = \beta E_t \left[\frac{u'(c_{t+1}^1)}{\pi_{t+1}} \right]$$

- Efficient consumption c^* has to be implemented by the Friedman rule:

$$\pi = 1/\beta, q = 1.$$

Key Equations: credit goods

Add consumption good 2 that can be purchased using bond b and credit κ .

$$\text{No arbitrage condition } u'(c_1) = \frac{u'(c_2)}{q}$$

$$\text{Liquidity constraint } V + q\kappa \geq \theta c_1 + (1 - \theta) qc_2$$

where V is the government debt (fiscal policy).

- Given $\{V, q, \kappa\}$, the equilibrium consumption:

$$c_1 \leq c_2 \leq c^*$$

Key Equations: unconstrained equilibrium

If the government debt is abundant:

$$c_2 = c^*.$$

Inflation is pinned down completely by the monetary policy q

$$\pi = \beta \frac{u'(c_1)}{\gamma} = \frac{\beta}{q}.$$

- Higher nominal interest rate reduces c_1 .

Key Equations: constrained equilibrium

If the government debt is scarce:

$$c_2 < c^* \text{ and } V + q\kappa = \theta c_1 + (1 - \theta) qc_2.$$

The fiscal and monetary policies jointly determine inflation:

$$\pi = \beta \frac{1}{\gamma(V + q\kappa)} \text{ if } u(c) = \ln c.$$

- Inflation rate can be positive during a liquidity trap due to a lower κ .
- Improving private credit (higher κ) reduces inflation π .
- At ZLB, open market sale of government bonds can improve welfare since it increases the supply of scarce assets.
- Taylor rule dictates the CB to maintain ZIRP when π reduces, leading to a policy trap.

Comment 1: Borrow your way out of a liquidity shortage?

This paper: optimal monetary policy given a suboptimal fiscal policy rule
But...

- A constrained equilibrium can be avoided if enough government debt:

$$V_t > c^*.$$

- Efficient allocation is achieved by $V_t > c^*$ and $q_t = 1$.
- How exogenous could V be?
 - Any upper bound of V ? European sovereign debt crises
 - Higher V could reduce q :
a tradeoff between money goods and credit goods.

Comment 2: Bargain your way out of a liquidity shortage?

- How exogenous could V be?
- Given $\{\bar{M}_t, \bar{B}_t, q_t\}$,

$$V_t = \frac{\bar{M}_t + q_t \bar{B}_t}{p_t}$$

Could agents agree on a low p_t to avoid the constrained equilibrium?

- Even if assuming V_t to be chosen given p_t in the asset market,

$$\theta c_t^1 + q_t (1 - \theta) c_t^2 \leq \frac{p_{t-1} (m_t + b_t^a + b_t^g)}{p_t} + \tau_t + n_t + q_t \kappa - \kappa$$

What prevent agents in the goods market to rebargain and reach a low enough p_t ?

- Need a more detailed story about how p_t is determined.

Comment 3: Non-optimal ZIRP?

Welfare increases with nominal interest rate $1/q$ as long as q is close to 1. Because 1 unit of money can be swapped to more than 1 unit of bonds.

- But q close to 1: this swap (open market sale) only marginally enlarges the quantity of liquid assets on the market.
- Higher nominal interest rate may harm other unmodelled interest rate sensitive spending, e.g., firm investment, durable goods.
- Not clear which effect is more quantitatively important

Summarizing...

- A very interesting paper that helps us
 - to understand the behavior of inflation and interest rate since the Great Recession
 - to reflect on optimal monetary policy in face of liquidity shortage
- It highlights the role of government debt in exchange and argues that ZIRP may not be optimal when government debt bears a liquidity premium.
- To make a liquidity shortage more relevant:
 - Too much government debt may undermine its role in exchange
 - Need some level of price stickiness
- The gain of raising interest rate from ZLB may be marginal compared to its cost of harming investment and durable goods consumption.