Discussion of "Public Debt as Private Liquidity: Optimal Policy" by George-Marios Angeletos, Fabrice Collard, Harris Dellas

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SUMMARY

This paper

- **solves** for optimal fiscal policy with distortionary taxes & debt liquidity yield
- **finds** that the gov. trades off tax smoothing/liquidity provision/interest rate manipulation

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- microfoundations + reduced-form Ramsey problem
- Analytical results + phase diagrams

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Discussion

1. Overview
2. Comments

A Simplified 2-period Model

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Environment

- Households

$$\max_{c_1, c_2, a_1, n_1, n_2} \quad c_1 - n_1^2/2 + V(a_1) + \beta\left(c_2 - n_2^2/2\right)$$

$$\text{s.t.:} \quad c_1 + q_1 a_1 = w_1 n_1$$

$$c_2 = w_2 n_2 + a_1$$

- Firms: $\max\{(1-\tau_t)An_t - w_t n_t\}$
- Government: $g = \tau_1 A n_1 + q_1 b_1, \;\; g + b_1 = \tau_2 A n_2$
- Market clearing: $c_t + g = An_t, \;\; b_1 = a_1$

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Solution

- Allocation: $n_t = w_t = (1-\tau_t)A$, $c_t = (1-\tau_t)A^2 - g$
- Prices: $q_1 = \beta + V'(b_1)$
- Government revenue: $s_t = \tau_t(1-\tau_t)A^2$ (the Laffer curve)

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Main Result

Policy problem

$$
\begin{aligned}
\mathcal{U} &= c_1 - n_1^2/2 + V(a_1) + \beta \left(c_2 - n_2^2/2 \right) \\
&= \frac{1}{2} A^2 \left[1 - \tau(s_1)^2 \right] + \beta \frac{1}{2} A^2 \left[1 - \tau(s_2)^2 \right] + V(b_1) + t.i.p. \\
&= U(s_1) \qquad\qquad\qquad + \beta U(s_2) \qquad\qquad\qquad + V(b_1) + t.i.p.
\end{aligned}
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\text{s.t.:}\; g = s_1 + b_1 \left[V'(b_1) + \beta \right],
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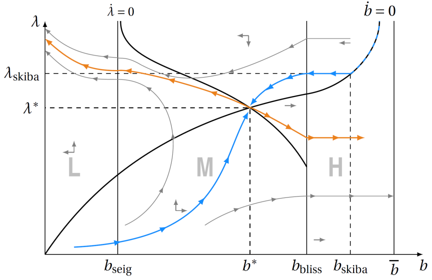
\text{s.t.: } g &= s_1 + b_1\left[V'(b_1) + \beta\right], \\
g + b_1 &= s_2.
\end{aligned}$$

The main formula

$$V'(b_1) + [-U'(s_1)]V'(b_1)\left[1 + \frac{V''(b_1)b_1}{V'(b_1)}\right] + \beta\left[U'(s_2) - U'(s_1)\right] = 0$$

A dynamic model



Steady state

$$V'(b^*) + [-U'(s^*)]V'(b^*)\left[1 + \frac{V''(b^*)b^*}{V'(b^*)}\right] = 0$$

where $s^* = g + (\rho - V'(b^*))b^*$.

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A simple numerical exercise

- $\rho = 0.035,\ r \approx 0$ (TIPS, May 27, 2022) $\Rightarrow V'(b) = \rho - r = 0.035$

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- $\rho = 0.035,\ r \approx 0$ (TIPS, May 27, 2022) $\Rightarrow V'(b) = \rho - r = 0.035$
- $dV'(b)/d\log b = -0.017$ (Krishnamurthy, Vissing-Jorgensen, 2012)

$$1 + \frac{V''(b)b}{V'(b)} = 1 + \frac{1}{V'(b)} \cdot \frac{dV'(b)}{d\log b} = 1 + \frac{1}{0.035 - 0} \cdot (-0.017) > 0$$

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Numerical value of optimal debt?

Comment 2: open economy

Current paper considers a closed economy.

Foreign demand for safe assets

- Domestic safe assets are purchased by foreigners
- The benefits of liquidity creation may not all be felt at home

Foreign supply of safe assets

- Safe interest rate may be determined by the world supply of safe assets
- Domestic debt issuance may have a limited effect on liquidity yield

Over/under supply of safe assets in the world?

COMMENT 3: SOURCE OF $V(b)$ MATTERS

$$r(b) = \rho - V'(b)$$

Microfoundation in the paper

- precautionary saving (Bewley, Aiyagari)
- debt as collateral (Woodford, 1990; Holmström and Tirole, 1998)

Other sources

- Adverse selection + info-insensitive debt (Dang, Gorton, Holmstrom, 2020)
- Disasters (Kocherlakota, 2021; Mian, Straub, Sufi, 2022)

Comment 3b: disasters + default

Mehrotra, Sergeyev (2021)

- An increase in the probability of disasters $p \uparrow$
- A (potential) decline in the safe interest rate $r_t \downarrow$
- A decline in the level of maximum sustainable debt $\overline{b} \downarrow$

It is possible that the optimal response here is to reduce government debt

Conclusion

- A very interesting, polished, and relevant paper!

- Comments:
  - a simple calibration
  - open economy
  - the source of low r matters + lower rates may imply lower debt