# Discussion of "The Capacity of Government Debt" by Bernard Dumas, Paul Ehling and Chunyu Yang

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# What the paper does?

$$b_t = \sum_{n=0}^{\infty} \left( \frac{1+\gamma}{1+r} \right)^n s_{t+n}$$

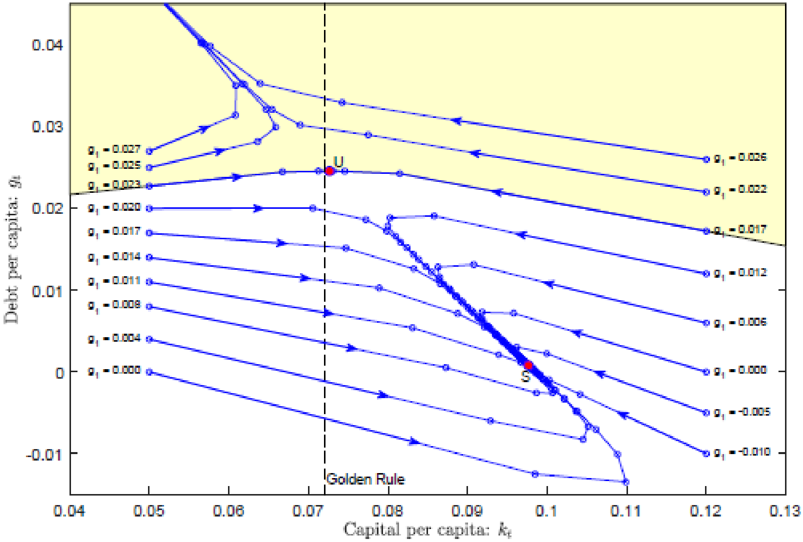
Characterizes the government debt capacity in a general equilibrium OLG model:

- Includes both fiscal and welfare costs of debt. In an model, government debt potentially welfare improving.
- Allows for endogenously determined interest rate. $r - \gamma$ an endogenous object!
- Crowding out of private investment.
- Equilibrium effects through wages and consumption.

Extensions:

- Debt is nominal.
- Government can affect the growth rate through R&D.

# Main Results



# What the paper abstracts from? And mostly rightly so

- Aggregate uncertainty and business cycle variation.
- Hedging costs.
- Government default and the associated risk.
- Taxation not distortionary, no labor supply responses.
- Fiscal policy exogenous and constant.
- Capital and bonds are perfect substitutes.

# Comment 1: capital and bonds perfect substitutes?

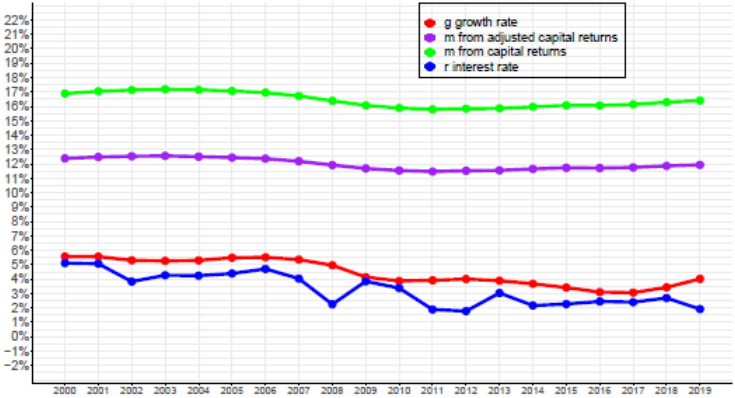



Figure: Source: Reis 2021

Why returns are different? 1. Risk 2. Liquidity 3. Cconvenience yields 4. Market power 5. Misallocation of capital 6. Institutional constraints 7. Used as a store of value.

# Comment 1: capital and bonds perfect substitutes?

How does this matter for debt capacity?

- When m>$\gamma$>r, government collects implicit revenue arising from the fact that m>r

$$b_t(1+m) = \underbrace{\sum_{n=0}^{\infty} \left(\frac{1+\gamma}{1+m}\right)^n s_{t+n}}_{(1)} + \underbrace{\sum_{n=0}^{\infty} \left(\frac{1+\gamma}{1+m}\right)^n b_{b+n}(m-r)}_{(2)}$$

  Allows for a much richer model!

  - More capital may increase surpluses (1), but reduce (2) by shrinking m-r.
  - Inflation can lower the LHS but inflation risk reduces (2).
  - Effects of inter-generational transfer no necessarily welfare improving when m>r.

- Gives rise to a non-trivial trade-off between bonds and capital. Can become extremely relevant when considering government default or inflation risk.

# Comment 2: Nominal debt

$$\frac{b_t}{1+\pi} = \sum_{n=0}^{\infty} \frac{1+\gamma}{1+r+\pi} s_t$$

- Inflation important because 1. Higher current inflation relaxes the inter-temporal constraint. 2. Higher future inflation tightens the intertemporal constraint.

- Can elaborate more on active-passive fiscal policy. What about not having the Taylor rule? Optimal policy usually suggest an active use of inflation as long as the real costs of inflation are not too large.

- Could elaborate more on your findings:
  - How does the path of inflation look like?
  - What is the economic intuition why $\bar{i}$ affects the debt capacity under different monetary policy regimes?

- What about having a more standard New-Keynesian model?
  - Money crowding out capital.
  - Both inflation and the change in money supply affect the government budget constraint. NK setting would help to isolate the role of inflation.

# Looking further

- Optimal policy
  - How to optimally design taxes that would bring the economy back to sustainable path?
  - Role for optimal debt management and inflation? Can we use inflation instead of taxes to bring the economy back to sustainable path?

- Role for debt maturity? Suppose the government now issues a coupon that decays at a rate $\delta$. The evolution of debt-to-GDP ratio now looks like:

$$b_t(1 + q(1 - \delta)) = s + q_t b_{t+1}(1 + \gamma)$$

and one can show that $q = \frac{1}{1+r}\frac{1}{\delta}$; Assuming $r > \gamma$

$$b_t = \frac{1+r}{r-\gamma}\frac{s}{1 + (\delta + r)(1 - \delta)} \quad \text{where } (\delta + r)(1 - \delta) > 0$$

Longer maturity increases debt capacity!