Comments on "On Financing Retirement, Health, and Long-term Care in Japan"

Keiichiro Kobayashi

Keio University and Tokyo Foundation for Policy Research

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Summary: goal and model structure

- Goal:
  To compare policy options to finance the costs of population aging.

- Model structute:
  Deterministic OLG with intra-cohort heterogeneity
  - Based on McGrattan and Prescott (2017)
  - Two business sectors
    - ★ Sector 1 are subject to corporate income tax
    - ★ Sector 2, unincorporated household businesses, are not.
  - Modification for household asset holdings
    - ★ Fraction ϕ_t consists of government debt
    - ★ Fraction $1 - \phi_t$ consists of private capital

Summary: cost of population aging

- Government budget

$$B_{t+1} = B_t + i_t^d B_t + \text{[policy expenditures – tax revenues]} \quad (1)$$

  - The interest rate is fixed exogenously (at $i_t^d = 1$ percent?).
  - Sustainable as of 2015, i.e., (1) is satisfied for $B_{t+1} = B_t$
- Household asset holdings:
  - government debt ϕa_t
  - private capital $(1 - \phi_t)a_t$
- Return on household asset holdings $(1 + i_t)a_t$:

$$1 + i_t = \phi_t(1 + i_t^d) + (1 - \phi_t)(1 + i_t^k),$$

  where i_t^d is exogenous, and $(i_t,\ i_t^k)$ are equilibrium outcomes.
- Δ[policy expenditures – tax revenues], an increase in fiscal deficit, are caused by population aging.

Summary: policy options

$$B_{t+1} = B_t + i_t^d B_t + [\text{policy expenditures} - \text{tax revenues}]$$

- The cost of population aging:
  Δ[policy expenditures – tax revenues] consists of
  - an increase in pension payments
  - health and long-term care payments

- The cost of population aging should be financed by the following options:
  1. Consumption tax
  2. Social security contributions
  3. Debt financing
  4. A uniform increase in health and long-term care copayments

Summary: results of policy comparison

1. Consumption tax: preferred fiancing option
   - baseline case
2. Social security contributions
   - equivalent to an increase in labor income tax
   - more distortionary than consumption tax (7 percent of GDP)
3. Debt financing
   - inaction until debt-GDP ratio goes up to 300 percent and then increase consumption tax
   - heavily distortionary due to substantial crowding out of private capital (20 percent of GDP)
4. A uniform increase in health and long-term care copayments
   - this policy exacerbate inequality, as health and long-term care expenditures are very similar across the income class (welfare loss for the middle class workers is 6 percent)

Comment 1

- Valuable paper that enables quantitative welfare comparison between realistic policy options
- The scope of the paper is (reasonably) limited
  - government debt dynamics are simplified
  - nominal variables and inflation are abstracted away

Comment 2

- Is the assumption on asset holdings innocuous?

Assumption 1

$\exists \phi_t$, exogenously, such that $b_t \geq \phi_t a_t$.
Interest rate on government debt i_t^d is exogenously fixed.

  - Growth rate of government debt is reduced
  - Private capital is crowed out

- This is an implicit tax on capital income
- The preferred option is actually consumption tax with implicit capital tax
- Without Assumption 1, the preferred option may not be better than other options.
- It may be possible to endogenize Assumption 1 with incomplete markets Bewley models (e.g., Aiyagari 1994)

Comment 3

- Why do we need two business sectors in the model?
- Having two sectors seems to have no effect on the policy comparison
- It may be relevant if the authors consider the option of increasing corporate tax, which may become a reasonable alternative, given that Assumption 1 is lifted.