EUROPEAN CENTRAL BANK
EUROSYSTEM

Discussion of:

"Comparison of Various Fiscal Policies in the Face of Different Demographic Stages"

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Contribution to the literature

- **Existing literature** on the impact of fiscal policy (stimulus) depending on aging [Honda and Miyamoto (2021), Miyamoto and Yoshino (2022)]

- Basso and Rachedi (2021): *Higher marginal propensity to consume* of the young → larger response of labour and consumption following a spending expansion → *larger fiscal multipliers* in younger societies

- **Miyamoto et al. (2024**): impact of aging on the effectiveness of different **fiscal instruments**

This paper

- **Four different fiscal expenditures**:

    1. Government consumption

    2. One-time government transfers to households

    3. Public investment

    4. R&D spending

- State-of-the-art **dynamic stochastic general equilibrium** (DSGE) model

- Model calibrated on **Japanese data**

- Impulse responses to the four different g shocks under different assumptions on the **share of workers vs. retirees**: $\Phi=(0.85, 0.55)$

Key findings

- **Aging** → weakens the effectiveness of 3 out of 4 instruments: **government consumption, R&D spending and public investment**

- **Transfers** exhibit a greater demand expansion effect with aging due to a larger increase in retirees' consumption

- **R&D expenditure** is the most effective measure across all time spans, followed by public investment. Transfers the least effective.
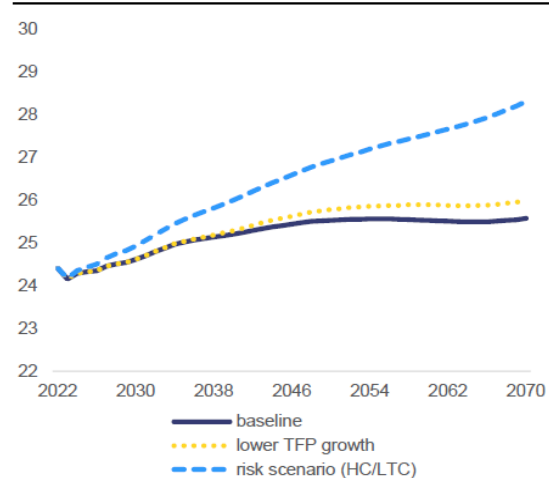
This paper

- Very interesting and policy-relevant paper (especially in rapidly aging societies, like Japan but also the EU)!

Graph 2: EU – Population by age group and sex, 2022 and 2070 (thousands)
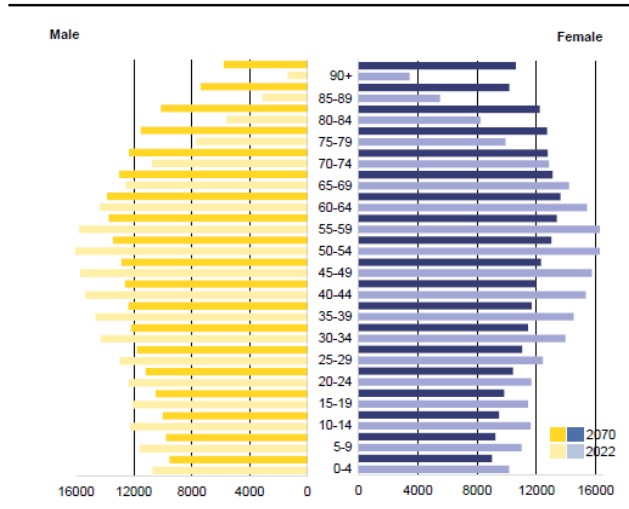
Source: European Commission, EPC.

Graph 4: EU – Total age-related expenditure: baseline, lower TFP growth and risk scenario (% of GDP)

Source: European Commission, EPC.

Comment #1

- Results based on the assumption of **rule-of-thumb retirees**

- They consume their full pension plus transfers, no savings

$$c_{r,t} = s \times \overline{w} + TR_{r,t}$$

→ this explains higher effects of transfers in an aging society

- At odds with Basso and Rachedi (2021)

- Some estimates and descriptive statistics on MPC would be useful

- Akihiko Yoshida's (anecdotal) evidence!

Comment #2

- Pensions are a fraction of SS value of real wages:

$$c_{r,t} = s \times \overline{w} + TR_{r,t}$$

- In an aging society (the share of pensioners increase from 15% to 45%) pensions would need to ensure the sustainability of a fully-funded pension system → what are the **implications of a declining s**?

Comment #3: R&D

Funding sources for research & development in the United States
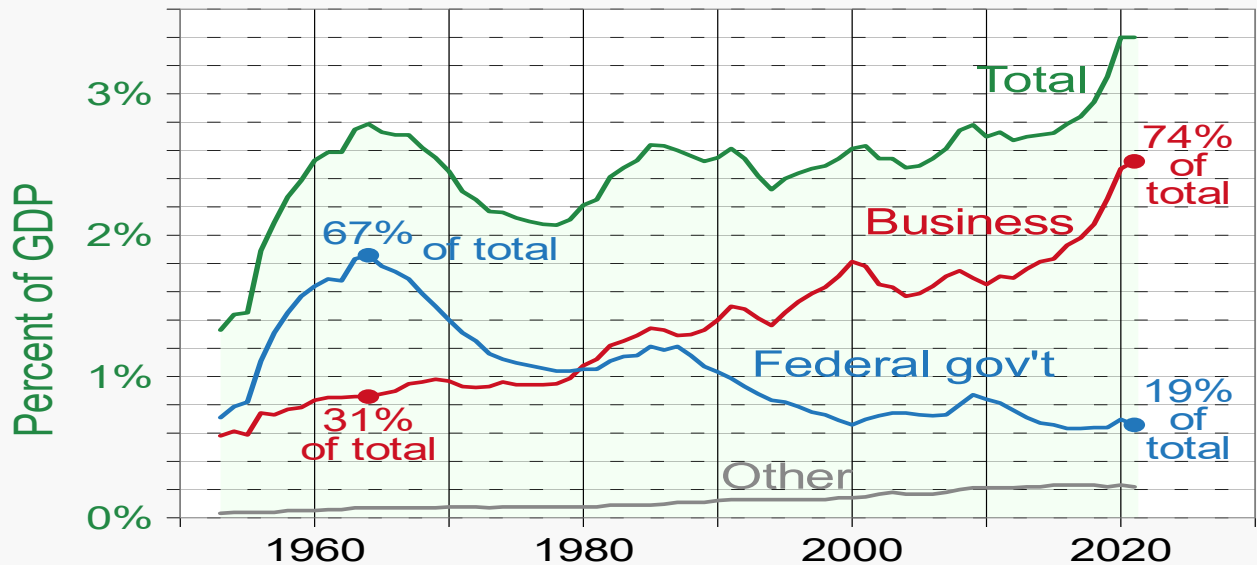
- Is government R&D in Japan a significant part of total R&D?
- Why public investment does not affect TFP?

$$d\log(A_t) = \beta_1 \frac{RD_t}{Y_t} + \beta_2 \log(A_{t-1})$$

Source: Anderson, G.; Moris, F. (2023). "Federally Funded R&D Declines as a Share of GDP and Total R&D". National Science Foundation, National Center for Science and Engineering Statistics

Comment #4: impact of aging on fiscal multipliers

- The impact of demographics on present values fiscal multipliers seem to be small (apart from R&D) spending
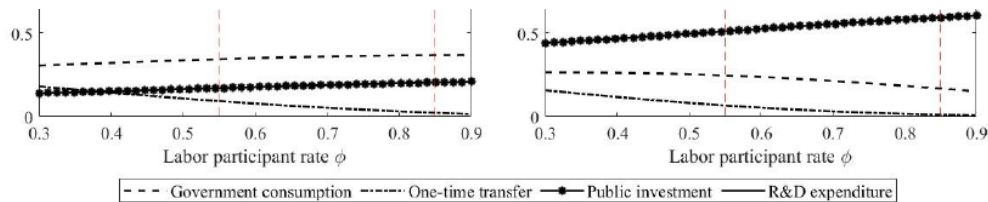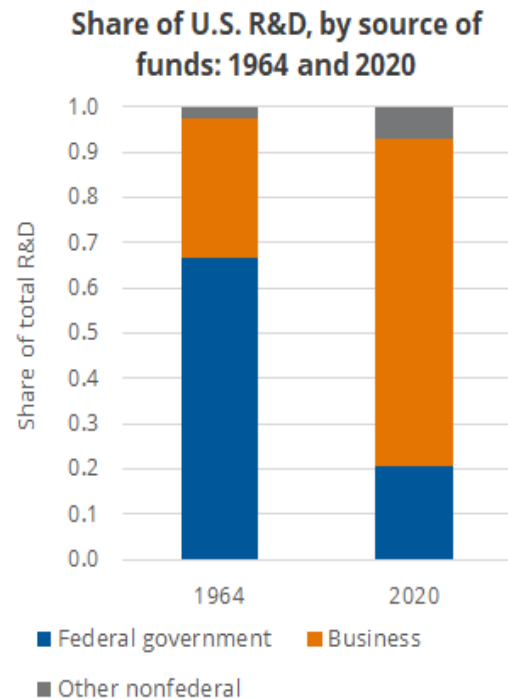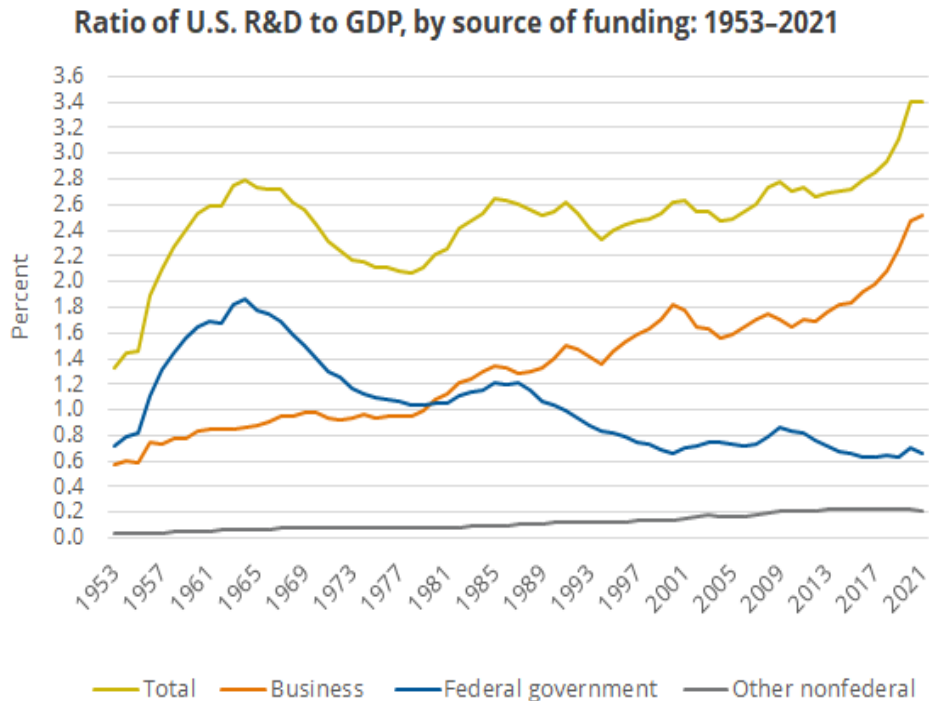

Figure 7: Present value fiscal multipliers of four fiscal expenditures under different demographic structures

Comment #5: policy implications

- How to **alleviate the impact of aging in Japan** (and other advance economies)?

- Migration, pension reforms

- Gains from productivity growth, e.g., AI revolution

- However, labor productivity seems to be higher than previously thought in Japan, if one looks at GDP per working age population rather than GDP per capita (Fernández-Villaverde, Ventura, Yao, 2023; Abbritti, Cimadomo, Consolo, 2024)

Thank you!

Is R&D a significant part of public spending?

Ratio of U.S. R&D to GDP, by source of funding: 1953–2021

Share of U.S. R&D, by source of funds: 1964 and 2020

- Source: Anderson, G.; Moris, F. (2023). "Federally Funded R&D Declines as a Share of GDP and Total R&D".

  National Science Foundation, National Center for Science and Engineering Statistics
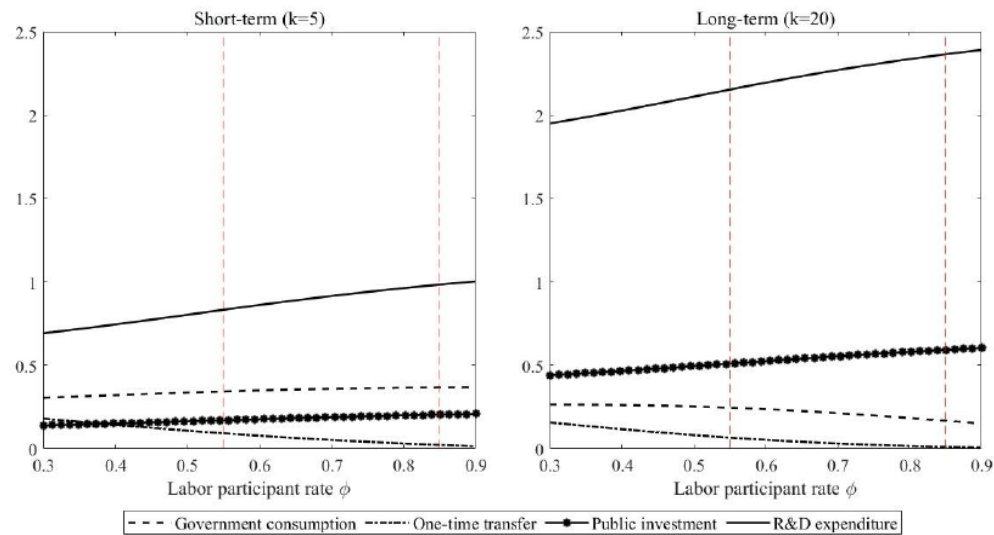
Present value fiscal multipliers

Figure 7: Present value fiscal multipliers of four fiscal expenditures under different demographic structures