Retirment in the shadow (banking)
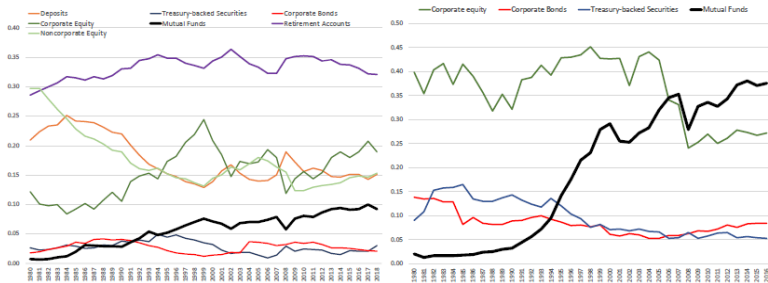# by Ordoñez and Piguillem

Alberto Martin

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Overview

- In recent years: significant expansion in securitization and shadow banking activities

Figure 1: Evolution of Shadow Banking

- This paper: increase in life expectancy
  - Last four decades: from 77 to 83 years
  - Increase in retirement savings fuels expansion of shadow banking
- Calibrated model: life expectancy crucial to account for rise of shadow banking and credit

A(n embarrassingly) simple model

- Two-period OLG structure

- *Preferences*: continuum of agents that maximize

$$U_t^i = \log(C_0) + \beta \cdot \log\left(C_{t+1}^i\right),$$

  where I think of β as likelihood of reaching old age.

- *Technology*: $F(K_t, L_t) = K_t^\alpha \cdot L_t^{1-\alpha}$

  - ▸ Young endowed with one unit of labor; competitive factor markets.
  - ▸ Capital produced with consumption goods and depreciates fully.

- Young deposit savings in banks, who invest:

  - ▸ *Traditional banks*: produce 1 unit of capital per unit of investment.
  - ▸ *Shadow banks*: produce $A > 1$ units of capital per unit investment.
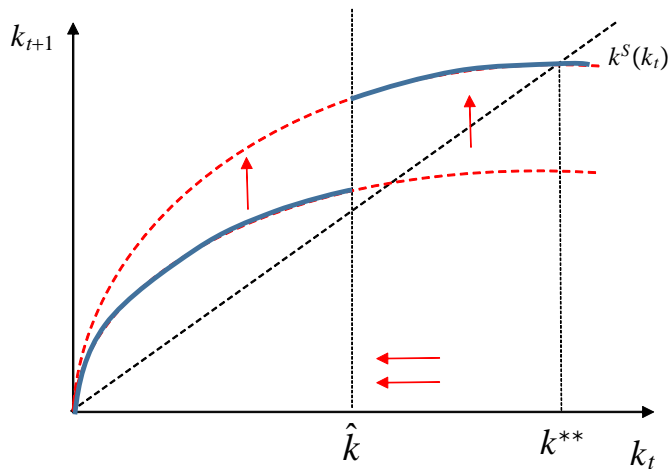 - ▸ Dealing with shadow bank requires fixed cost κ.

A simple model: dynamics
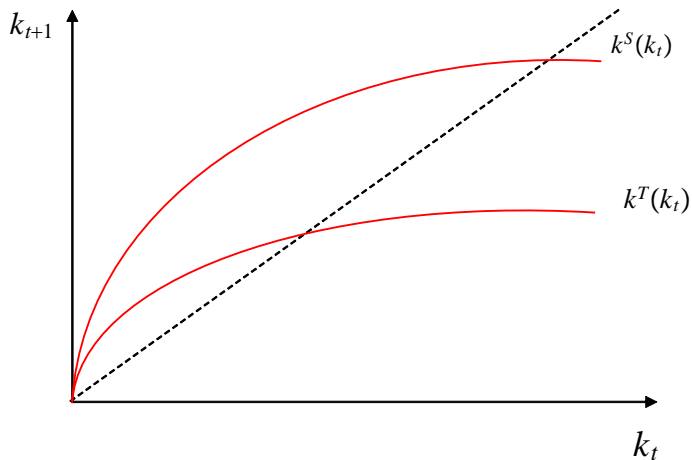
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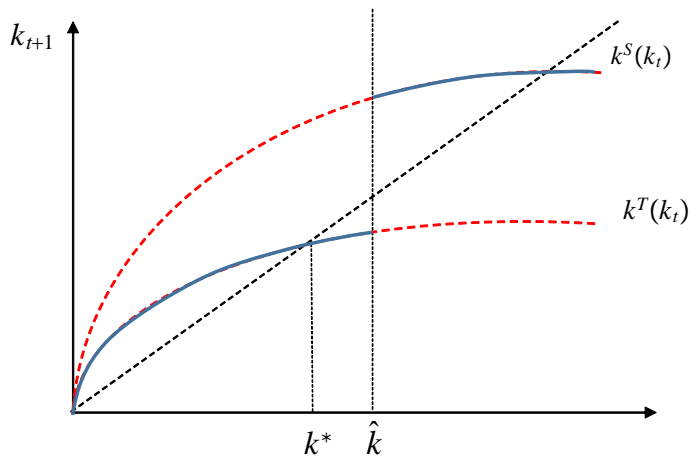
A simple model: increase in life expectancy

In the paper....

- ...similar flavor, slightly more complicated setup
    - Work for T periods, then retirement and constant probability of death δ.
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- **Agents' problem:**
  - How much to save.
  - *How to save:* banks or capital markets.

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- Directly purchase bonds or capital (or, equivalently, firm) in **capital markets**.
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- Banks can be **"traditional"** or **"shadow"**
  - ▸ Shadow banks: higher returns on portfolio
    - ★ Banks subject to runs: liquidate capital at "fire sale" prices.
    - ★ Shadow banks better at reselling capital → higher capital holdings → higher returns.
    - ★ Fall in intermediation spread.
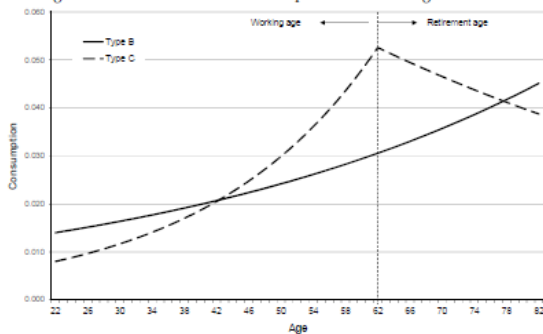 - ▸ Disadvantage of shadow banks: fixed cost κ.

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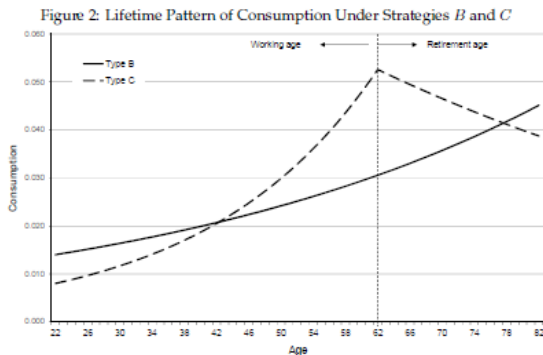
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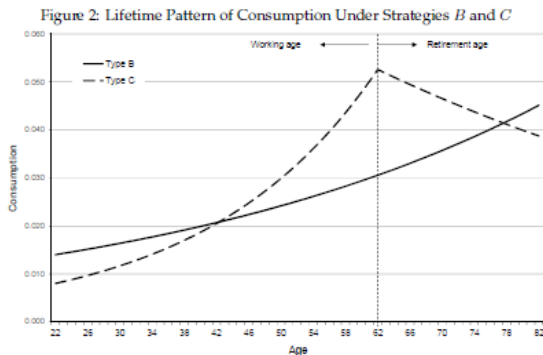
- **Result #1:** under some parametric conditions, selfish agents use banks.
- **Result #2:** among selfish, a higher survival probability shifts choice to shadow banks.

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- But effect doubles when combined existence of shadow banks.
  - Shadow banks boost effect of life expectancy.

General reaction

- Interesting, rich paper on a very important topic

- Huge demographic transition in many rich countries
  - Rise in longevity.
  - Fall in fertility.

- What is the effects on financial markets?
  - Interest rate? (e.g., Carvalho et al. (2017), Lisack et al. (2017))
  - Risk premia / stock prices? (e.g., Geanakoplos et al. (2006))

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  - Superior savings technology at a fixed cost.
  - No difference in risk profile, type of investment, etc...
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- In fact, theory's main prediction of theory is growth in annuities!
  - But paper silent on this.

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- But who are these altruists in reality?
  - Direct investment in capital markets: wealthy households.
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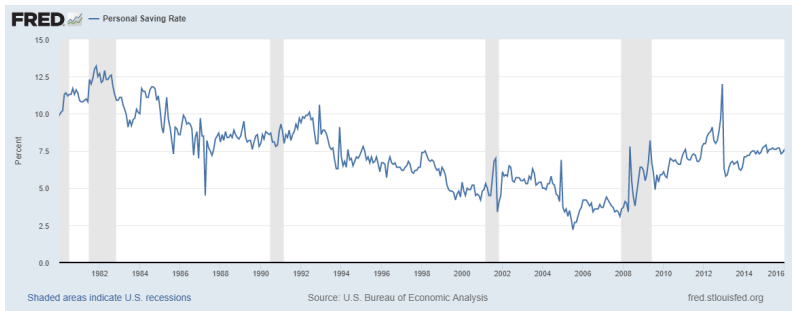
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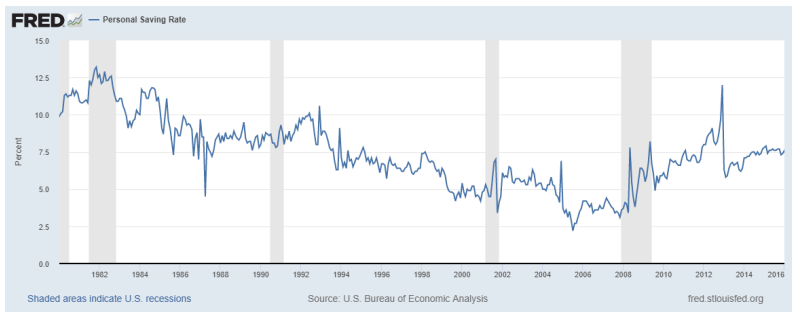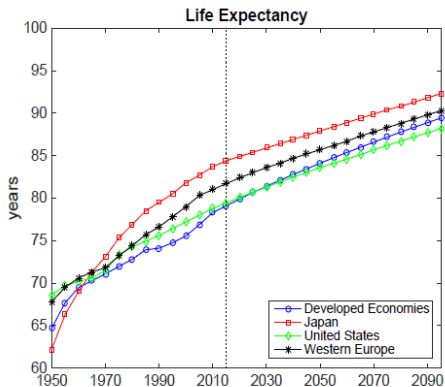

- Perhaps higher savings are foreign: "global imbalances".
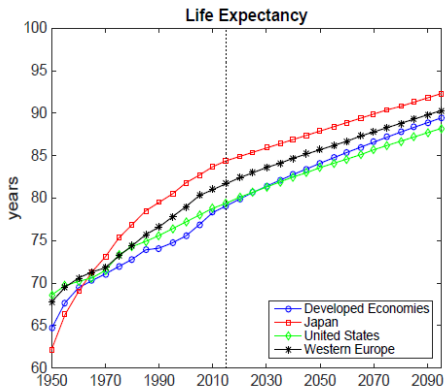
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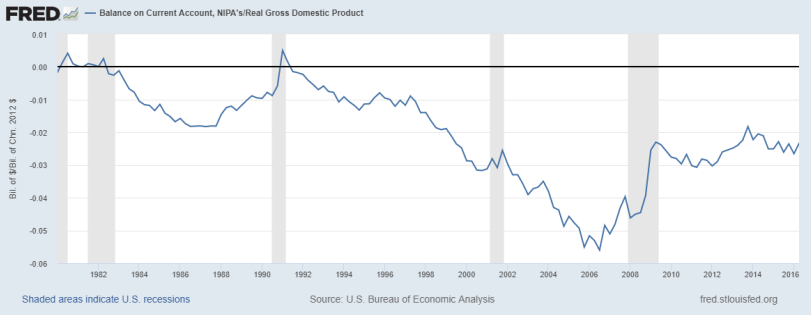
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Life Expectancy

Legend:
- Developed Economies
- Japan
- United States
- Western Europe
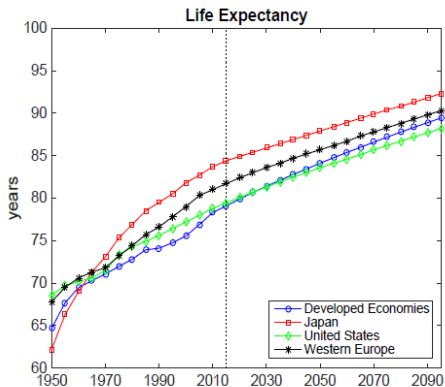
- Shouldn't we have expected similar developments elsewhere?
- Perhaps combine with previous comments:
  - Increase in life expectancy raises savings throughout the world.
  - US supplies these assets through expansion in shadow banks.

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- **Implication #1:** rise of shadow banks was the result of baby boomers saving for retirement.
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- **Implication #2:** as fertility falls, will shadow banking sector shrink?
  - Implications for macroeconomic growth and risk going forward.

Conclusions

- Interesting paper on a very important topic.

- Key lingering questions:
    - Why shadow banks?
    - Why altruists?
    - Where are the savings?
    - Why the US?
    - What about fertility?