Demographic Trends and the Real Interest Rate

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Discussion by Sebnem Kalemli-Ozcan

What does the paper do?

- Quantifies the role of demographic change (aging) on the decline in global (advanced country) real interest rates
- Investigate the effect of aging on house prices, household debt
- Main finding: demographics can explain a large part of the decline in real rates and rise in house prices and household debt since 1980s.
- Projection: trends will persist given the slow moving persistence process of demographics; global imbalances will get worse

General Impression

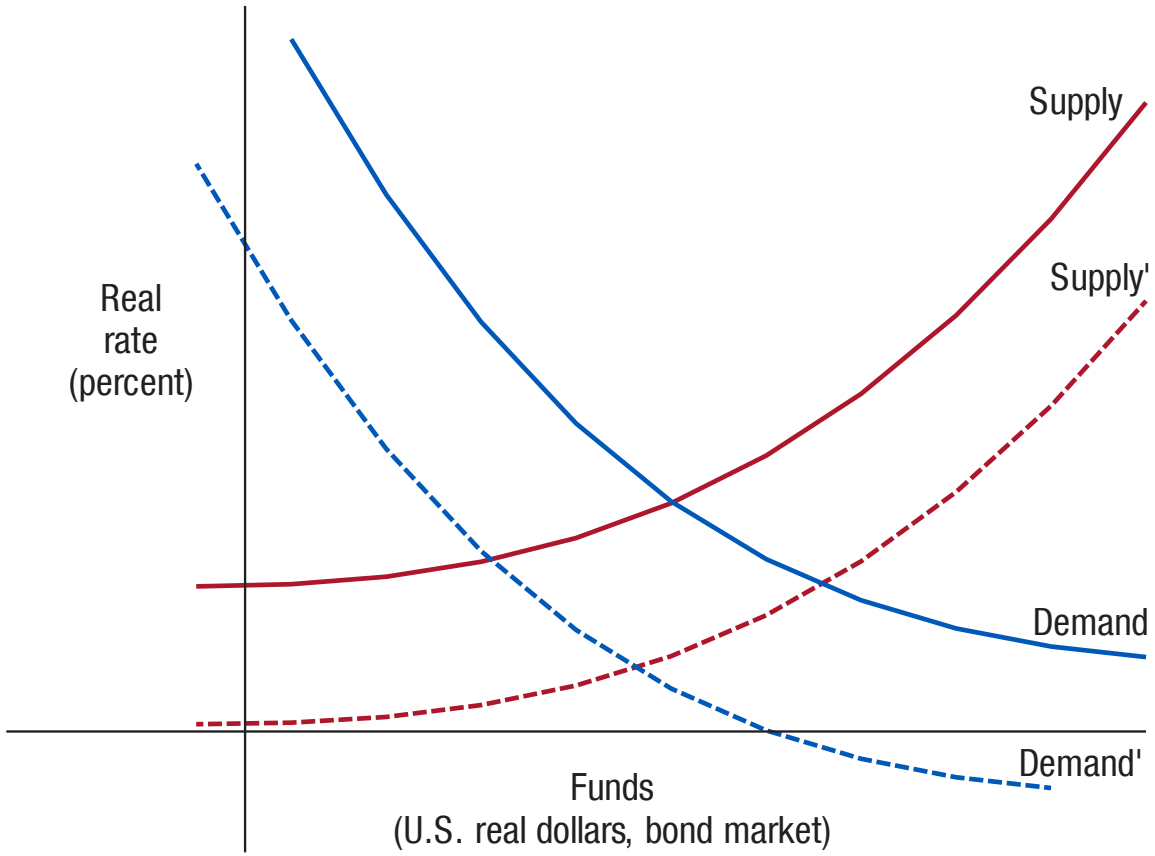
- I like the paper.
- I am very sympathetic to taking demographics seriously as one of the key reasons behind the decline in real rates.
- I am going to highlight some modeling and data issues which, upon dealing with, will help to clarify and strengthen the paper.

POINT 1: Savings Rate or Wealth Accumulation?

- I believe the authors want wealth but they have life cycle savings
- What are the issues with a savings focus?

Shifts in Demand and Supply for Funds

Figure 3.5. Real Interest Rate and Shifts in Demand for and Supply of Funds



Source: IMF staff illustration.

General framework for the global decline in real rates

- Investment Decline: The decline in relative price of investment—matches the timing of decline starting in 1980s
- Saving Increase: Savings of China—post 2000 period
  - $S = S_{priv} + S_{pub}$ Low public saving/high public debt depress private saving (OLG with no RE)–role of FP
  - No role for aging since aging decreases saving in standard PIH/life cycle model so real rates rise
- Monetary Policy Easing: Important role since 1980s both for short and long term rates
- Portfolio Shifts: Important role since 2000s given demand for safe US assets

Figure 3.6. Investment-to-GDP Ratios

(Percent of GDP)

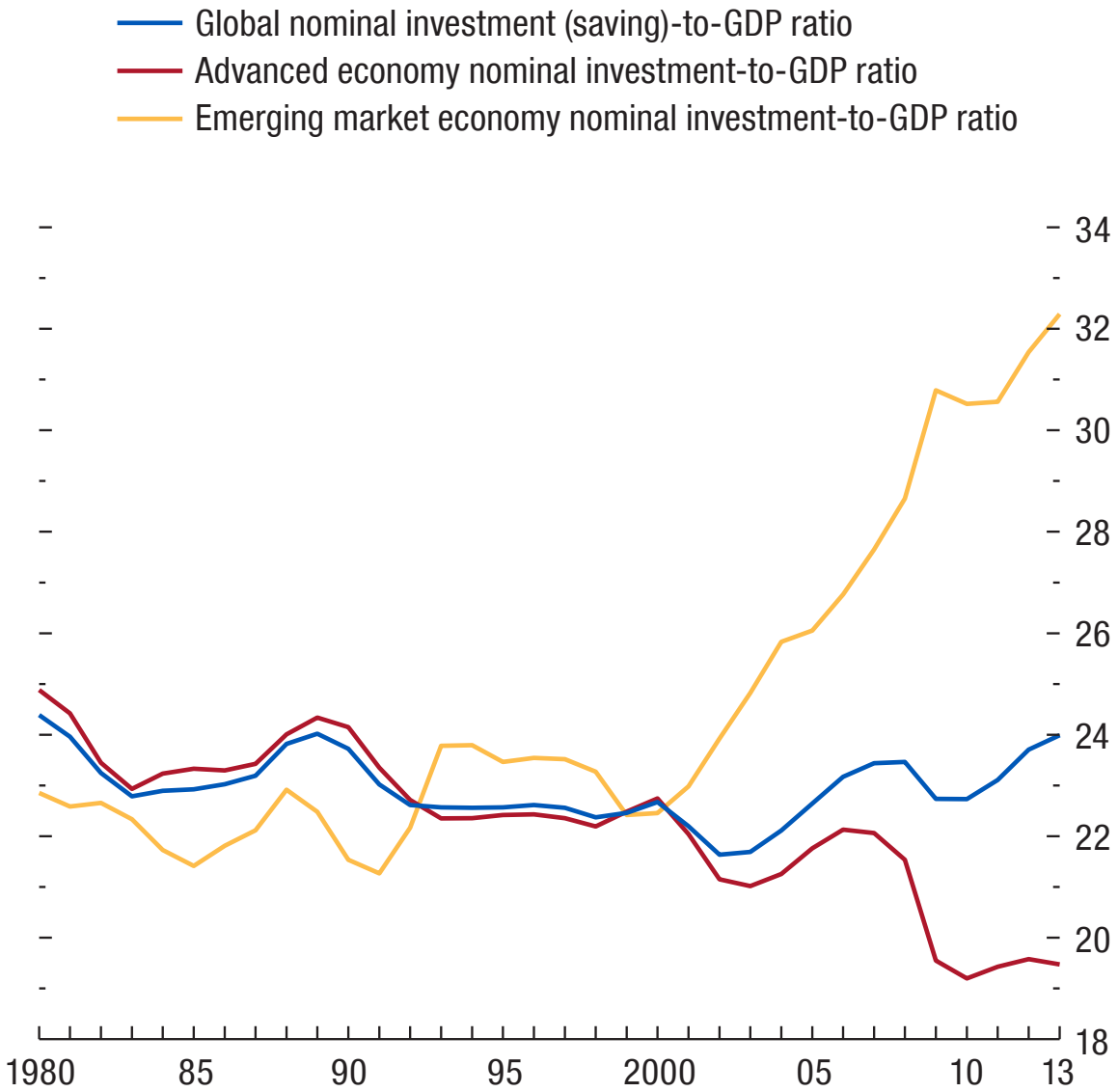
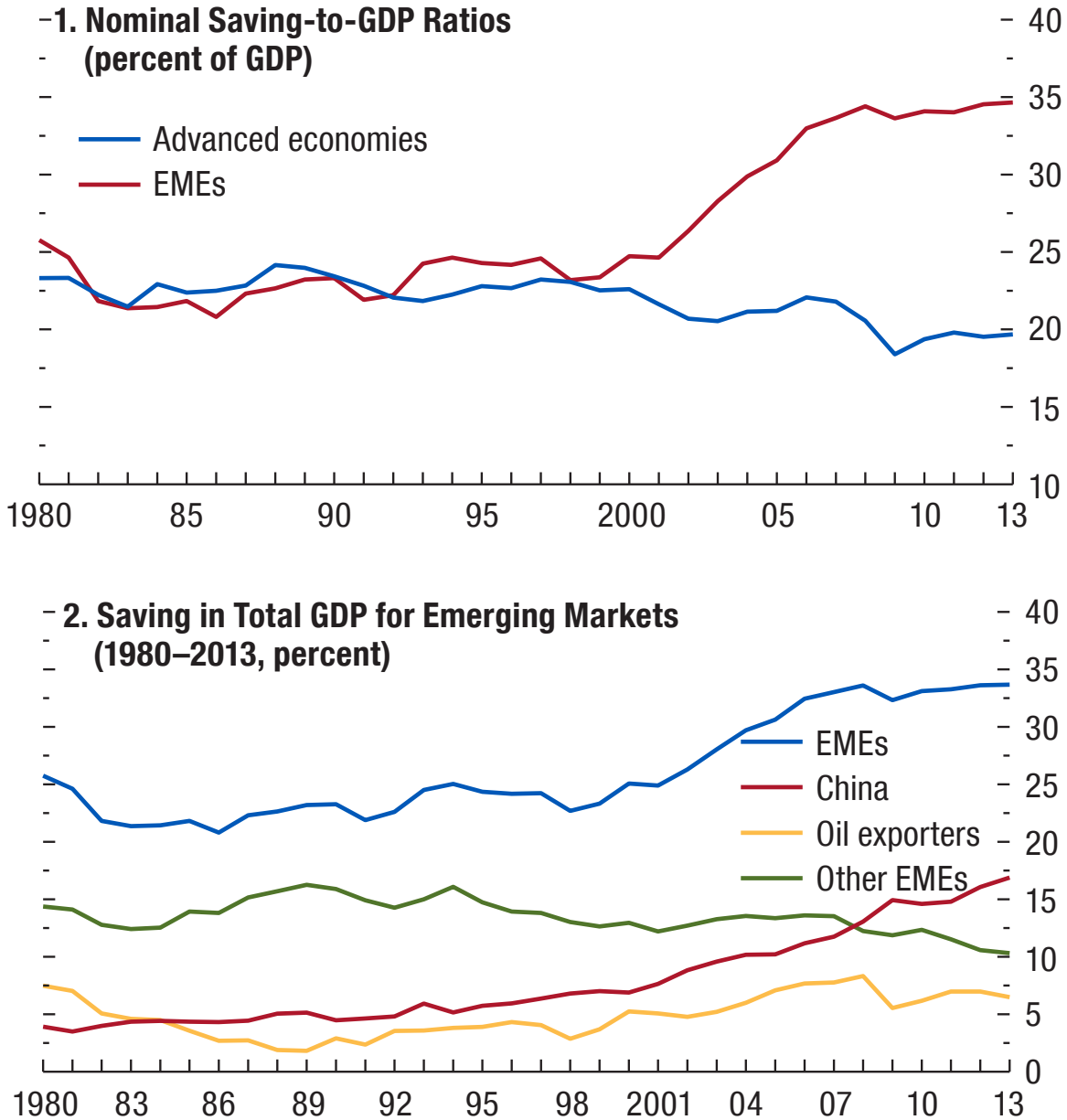
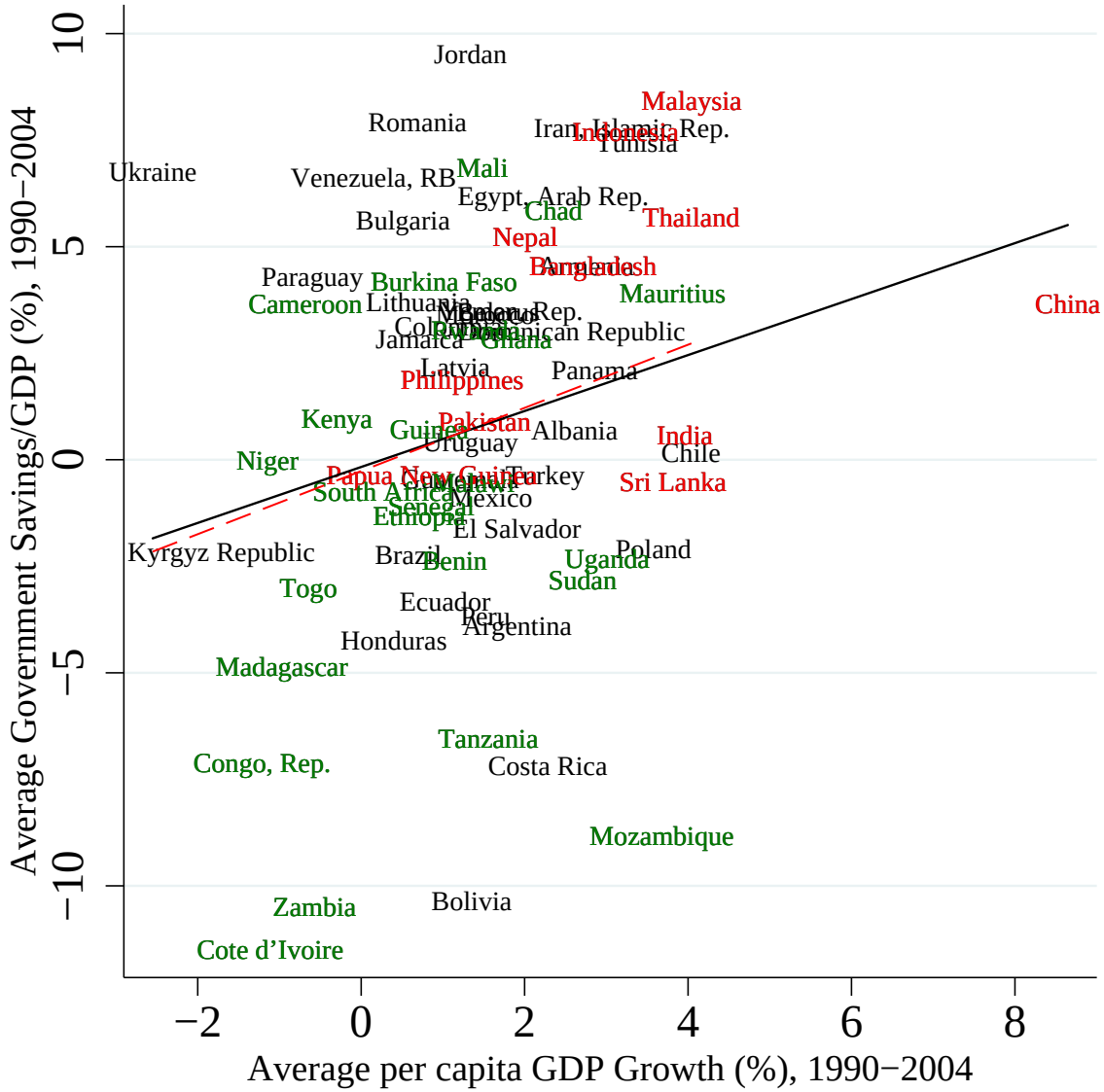


Figure 3.8. Saving Shifts in Emerging Markets



Savings: Role of Public Savings and Asia
Alfaro et al., 2014 JEEA



Legend:
Red dash line = Developing Countries excluding China

Savings: No Role for EM Private Saving
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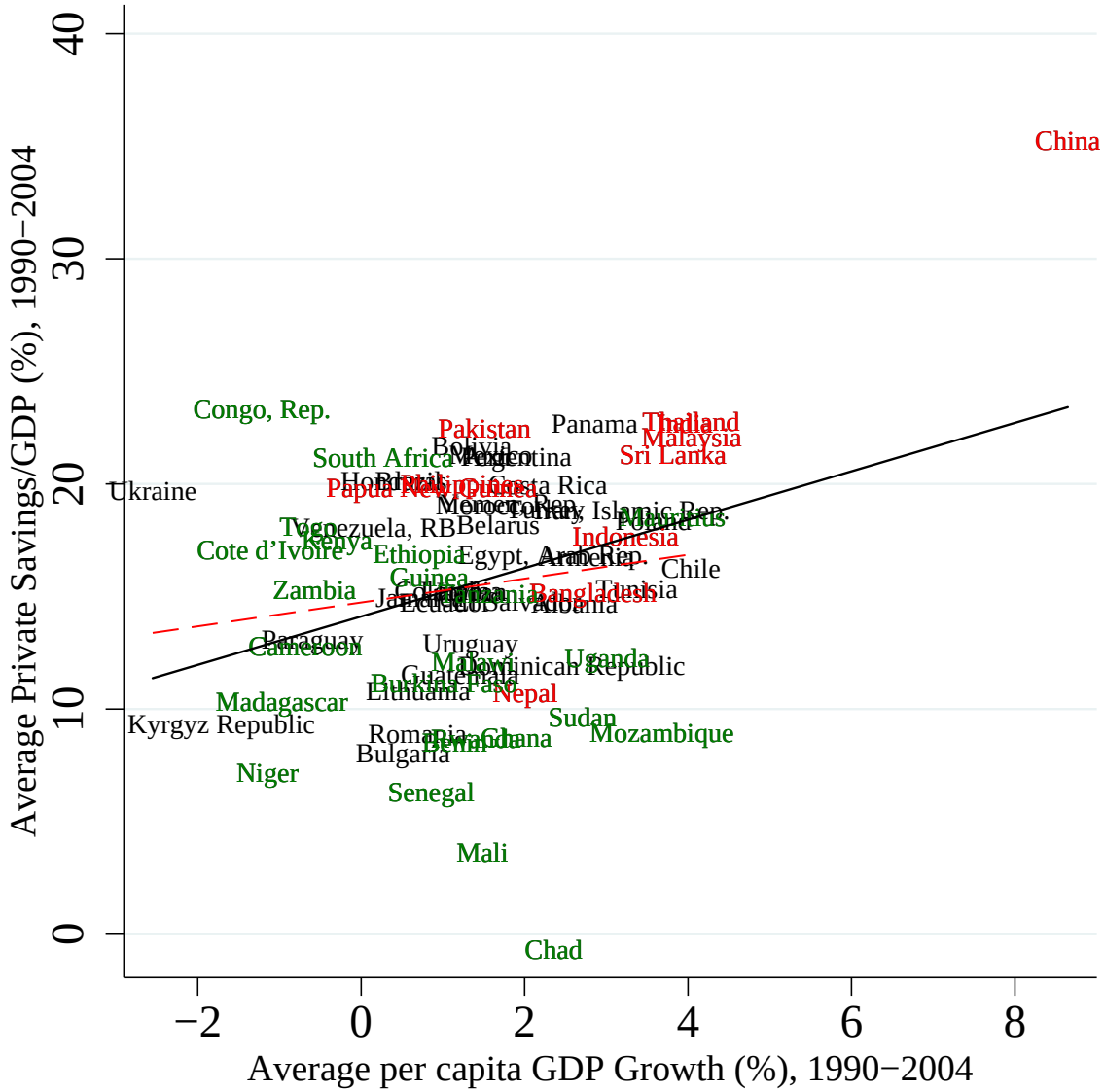

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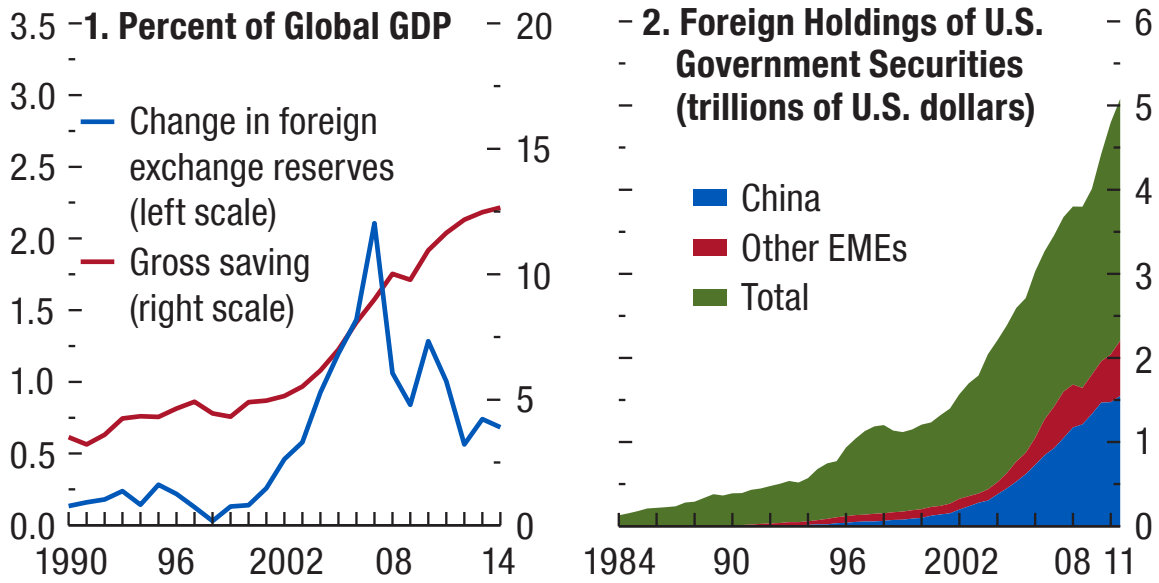
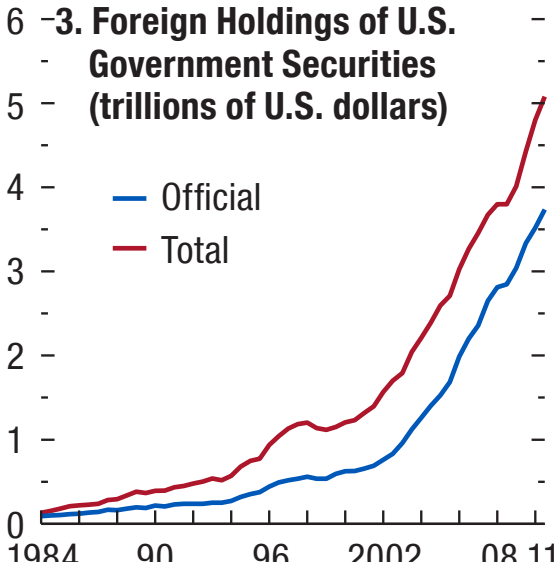
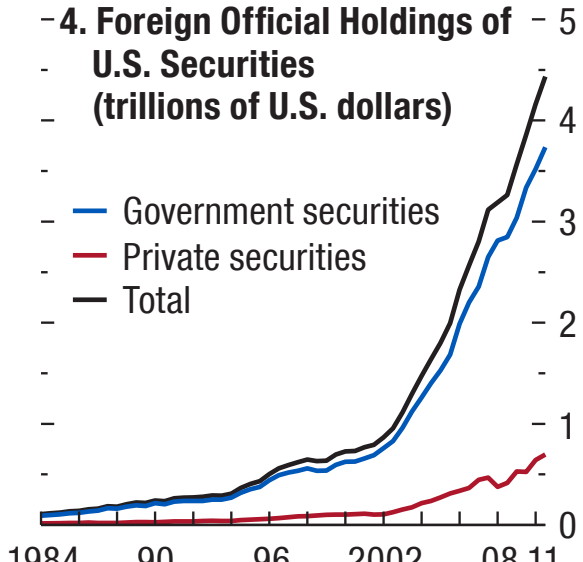
Public Savings in Asia and Demand for Safe Assets

Figure 3.12. Portfolio Shifts and Relative Demand for Bonds versus Equity







K/Y Ratio rather than Savings

- In a life cycle model, easy to get a rise in K/Y ratio with demographics and get an associated decline in real rates
- Can we add to the model to make wealth accumulation central given increases in longevity?

Wealth accumulation in a model of retirement

- Life cycle savings is not a good model for wealth accumulation
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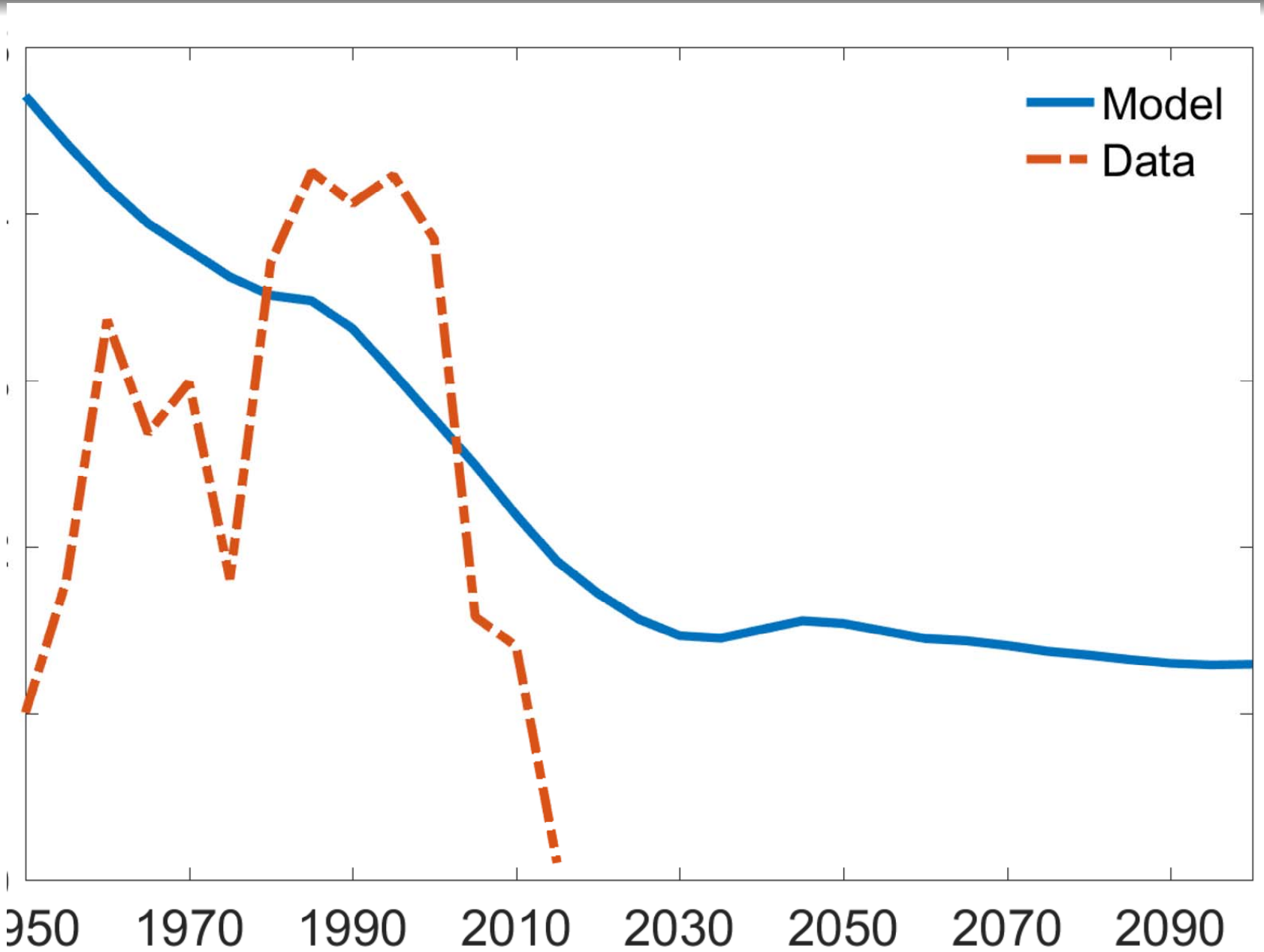
- The model should have endogenous fertility and retirement
- Then the role of pensions, annuities become important together with the role of baby-boomers: not every country has pay-as-you-go systems
  - Abel and Blanchard (1983); Cutler et al. (1990); Auerbach and Kotlikoff (1987); Lim and Weil (2003)

POINT 2: Evaluating Model's Success

- Authors are upfront on being not the only explanation but claim a large fraction of the decline explained.

Calibration



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- Nothing is NOT targeted it seems–distributions of targeted and non-targeted variables will help
- Figure 5 and 6 are all targeted so how do we evaluate model success?
- Open economy dimension is important, maybe calibration should focus on that extension, instead of closed economy
  - Recent data shows global imbalances are narrowing, the model implies they will get worse via demographics, important to quantify this effect on real rates.

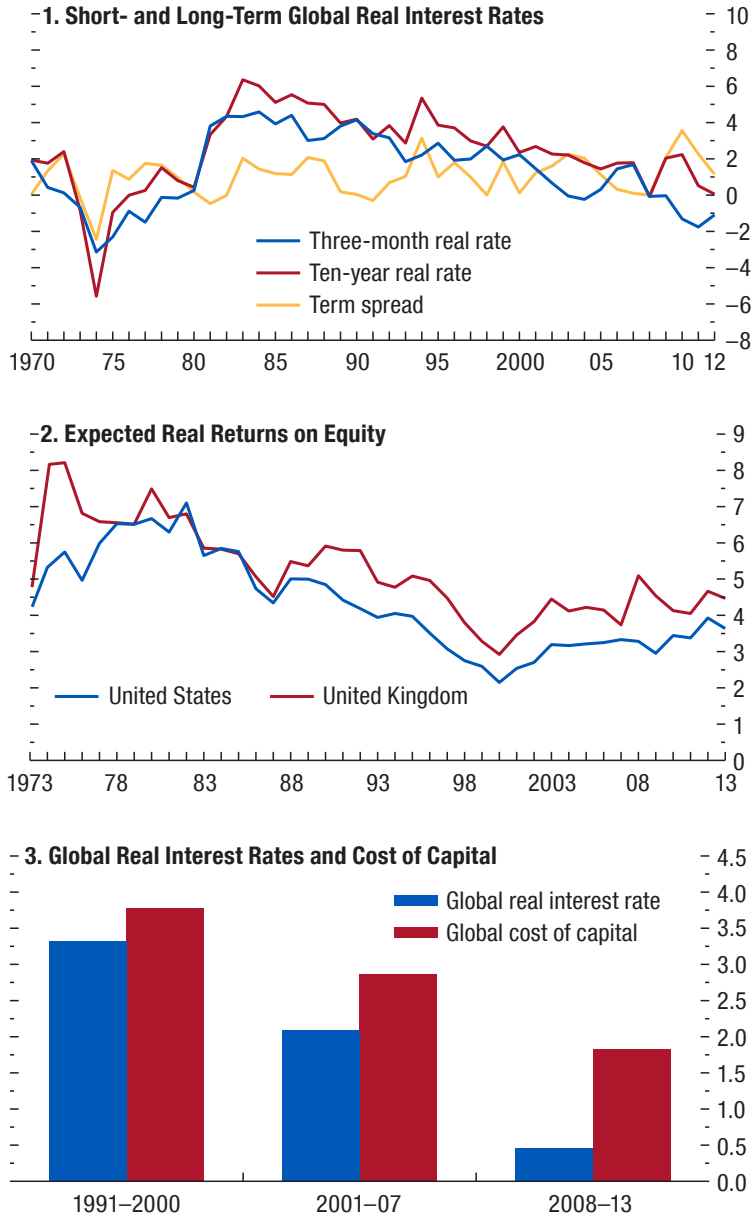
POINT 3: Measurement—What are the real rates?

What are the real rates?

- King and Low (2014) for real rates or Rachel and Smith (2015) for natural interest rate? (not equal unless monetary policy is neutral)
- Directly observable real rates: yields on inflation-indexed bonds, only available for a handful of countries (countries here are ok probably)
- Approximate real rates: Difference between nominal rates and inflation expectations
- At the end what we want is cost of capital

Real Rates and Cost of Capital

Figure 3.3. Real Interest Rates, Real Returns on Equity, and Cost of Capital
(Percent a year)



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- For the next draft, it will help to make the point sharper if authors can clarify these points:
  - Endogenous retirement: fixed retirement age not very reasonable when aging is due to longevity
  - Maybe adding endogenous fertility if the aim is to explain the decline in real rates via wealth accumulation which goes via declining births (more important than housing)
  - Improve the calibration on non targeted moments
  - Clarify measurement issues