Discussion of

Stock Market Investment: The Role of Human Capital by Athreya, Ionescu, Neelakantan

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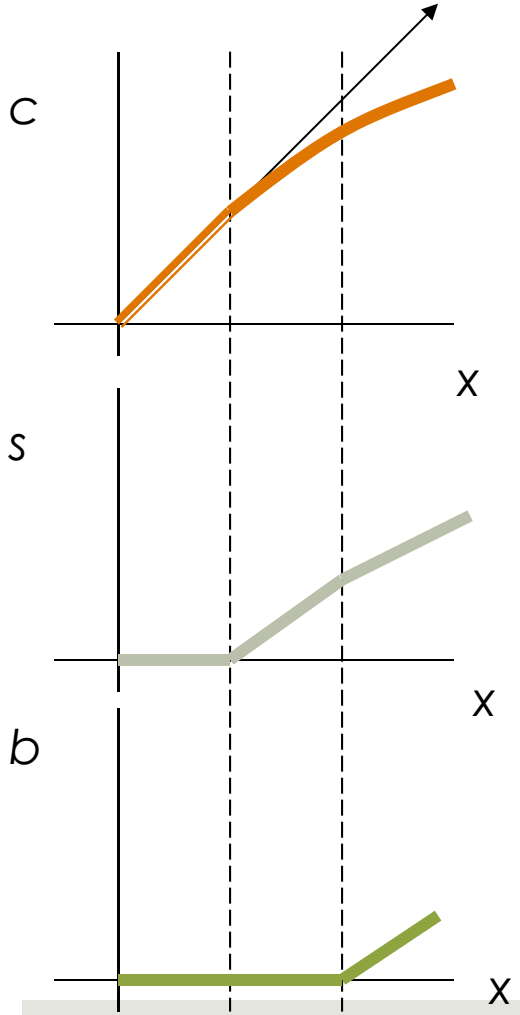
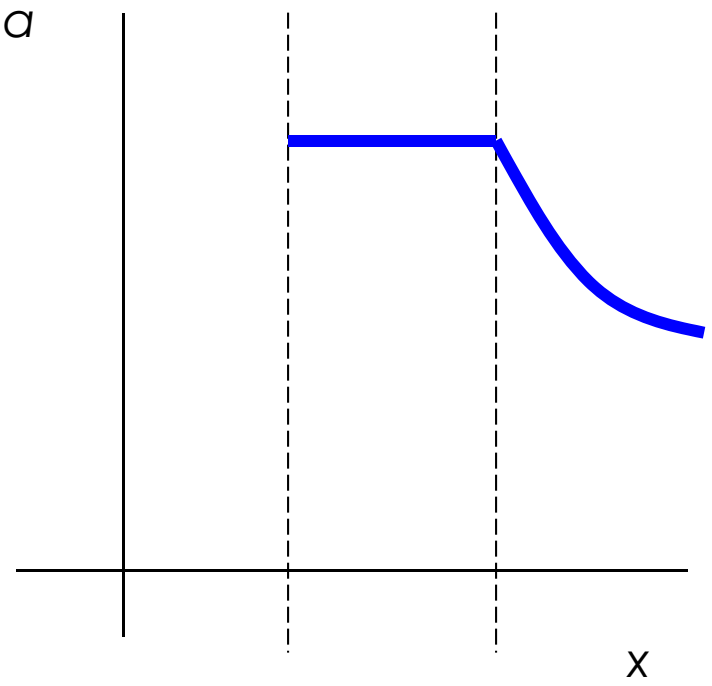
Two puzzles: Stock Market Participation and Portfolio Specialization

- **Participation:** An expected-utility maximizer faced with a risky asset offering higher expected return than the riskless asset will always invest ε in the risky asset
  (Arrow 1987, Haliassos and Bertaut 1995)
  - Reason:
    - Expected return is higher
    - Relevant measure of risk (covariance) is zero

- **Portfolio share:** With background risk, often 100% *for some range*
  (Heaton and Lucas, 1997; Haliassos, Michaelides, 2003; Cocco, Gomes, Maenhout, 2005)
  - Reason: Attractive to borrow to invest in stocks but borrowing constraint

Consumption, Stockholding, Riskless Asset Holding, and Risky Portfolio Share in a Model with Short Sales Constraints (Haliassos and Michaelides 2003)





Ways to account for non-participation or limited risky portfolio share in the data

- **Reduce attractiveness of stocks relative to bonds**
  - **Fixed entry (and participation) costs only for stocks**
    - Haliassos and Bertaut (1995), Vissing Jorgensen (2002), Haliassos and Michaelides (2003), Gomes and Michaelides (2005): Expected stock payoffs have to overcome this hurdle
  - **Limit expected-return attractiveness**
    - **Trust**
      - Guiso, Sapienza, Zingales (JF 2008): probability of getting cheated with stocks
    - **Subjective expectations:**
      - Dominitz and Manski (JEEA 2007): Many people don't agree on equity premium
    - **Interest rate wedge:**
      - Davis, Kubler, Willen (2006): stocks not a good deal if you have to borrow
- **Assume the agent does not consider the full asset menu**
  - **Asset ignorance:** Guiso and Jappelli (2005)
  - **Social interactions: only some can lower their entry/participation costs**
    - Hong, Kubik, Stein (2004): sociability encourages stockholding
    - Duflo and Saez (2006): learning about assets from coworkers
  - **Narrow framing:** (Barberis, Huang, Thaler, 2006)

Ways to account for non-participation or limited risky portfolio share in the data

- **Magnify the risks: Probability of disasters** (Alan, 2012)
  - Alan follows an insight from Reitz (1988), brought back by Barro (2006).
    - There is a positive probability of a disastrous income state; and then, conditional on that occurring, a positive probability of a disaster in stock returns
- **Introduce competition of stocks with a third asset**
  - Possible substitution of **private businesses** for stocks
    - Heaton and Lucas (2000) make this argument for rich households
    - Roussanov (2012): desire to beat the Joneses through access to a private asset (unlisted business) rather than to listed stocks
  - Competition with investment in **human capital**
    - **This paper!**
    - **Very interesting, very well written, very worthwhile to examine**

The margin between stocks and education in the model

- Competition between investing in human capital accumulation and in stocks
  - Time can be used for work or for education
  - Earnings plus borrowing can be used for consumption or asset holding
  - Thus, time spent on education reduces funds available for stockholding
- Human capital return
  - Heterogeneous initial h
  - Heterogeneous ability to accumulate h by investing time
  - w=h(a)(1-l)z (goes up with time invested in education, only z is stochastic)
- Stock return
  - Stochastic, same for every holder
- Costs of investing in human capital
  - No tuition fees but Time producing consumption
  - Leisure: irrelevant for utility
- Costs of investing in stocks
  - No entry or participation costs, no info costs
  - Foregone consumption or human capital accumulation
- **Borrowing:** with $r^L > r^B$ and r^L close to Er^S

Comment: stocks-education margin

- In the model, stocks are for those who find investment in education not so profitable (any more)
- Arguments and models exist for investment in human capital to **influence not only future labor earnings but also stock returns/entry/monitoring costs:** this biases the tradeoff on which results rest
  - Motivating point for **entry/participation costs**
  - Point of **financial literacy literature** (Investment in financial literacy: Lusardi/Michaud/Mitchell, Jappelli/Padula)
  - Would affect portfolio shares but also participation

Comment: Competition or complementarity between stockholding and education?

- Very mixed model implications:
  - In the model, **the least educated are more likely to invest in stocks** than in education, because educational investment is hopeless for them.
  - Those with the **highest initial h participate in stocks in the highest rates**. But this is because they find investment in h not so rewarding and do not expect a sizeable increase in earnings.
  - **Higher h accumulation**:
    - if achieved through higher initial h and ability or an improvement in the h production technology, it leads to **an increase** in stock market participation.
    - If it comes from greater allocation of time to h accumulation, it leads **to lower** stock market participation.
- But empirical results on education are unambiguous! Could it be because it facilitates stockholding instead of competing with it?

Comment: education-work margin

- Ease of taking up education is exaggerated:
  - Education is assumed to be incremental and feasible at any time, costing leisure that does not enter utility.
  - Work is assumed to be smoothly adjusted to fit the time needs of education
- Fixed costs literature did not ignore human capital:
  - always stressed that education could lower fixed costs, but it was implied that education would favor stockholding rather than displacing it.

Comment: Matching age effects

- Why are HS dropouts dropped from the data?
  - This is a paper about the education margin, and they differ in variances and slope of earnings
- Empirical profiles matched suffer from the **Ameriks/Zeldes problem**: they are upward sloping because of the assumption of cohort but not time effects (see next slide)
- Yet, the model **abstracts from factors that would give cohort effects substance**: e.g., familiarity with stocks in formative years or stock market experiences.

The difference in age effects between setting cohort or time effects to zero

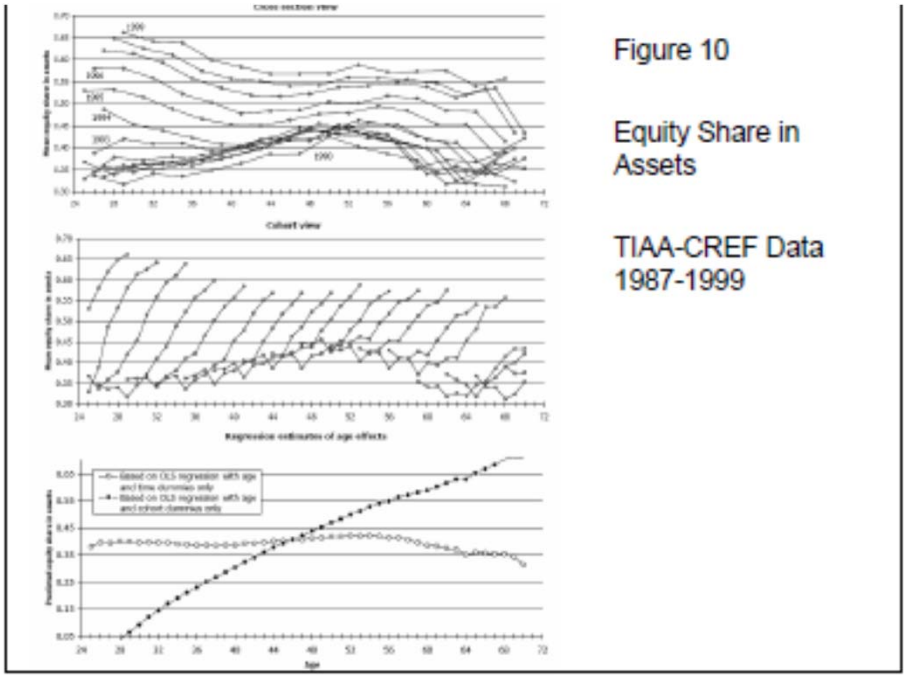


Figure 10

Equity Share in Assets

TIAA-CREF Data 1987-1999

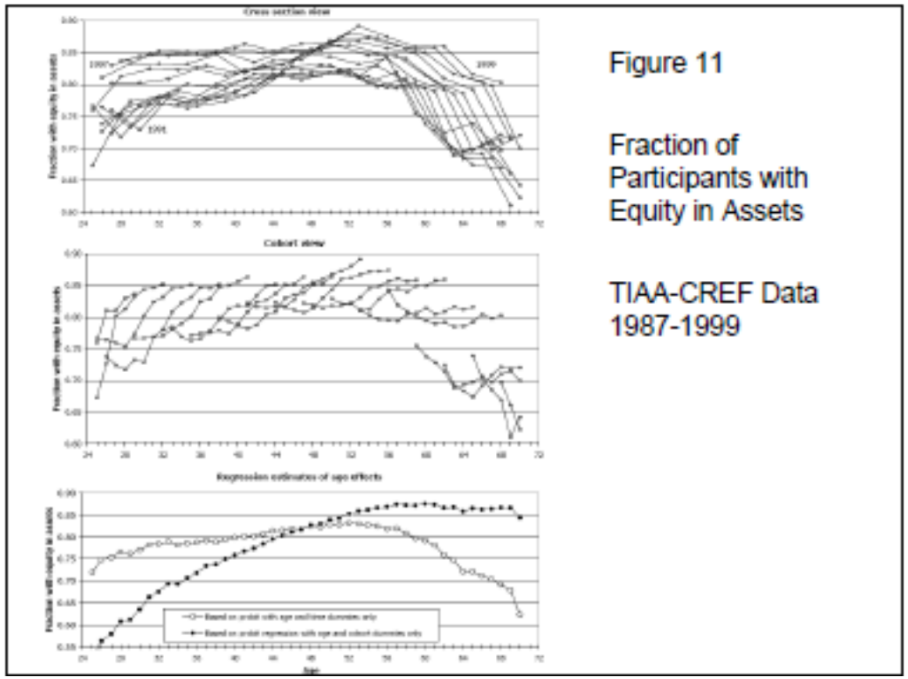


Figure 11

Fraction of Participants with Equity in Assets

TIAA-CREF Data 1987-1999

Source: Ameriks and Zeldes (2005)

Comments on age effects (ctd)

- The model generates **too much of a positive slope in stockholding against age** because it understates benefits to stockholding earlier in life and makes it too easy late in life. This is also reflected in the model/data graphs.
- Monitoring and info costs can generate **exits** from the stock market. Where do exits come from here?
- Accumulating literature on **portfolio inertia, transactions costs, and rational inattention** (Duffie, Abel-Eberly-Panageas, Brunnermeier-Nagel, Bilias-Georgarakos-Haliassos). Could the logic of the model be extended to those phenomena?