

DISCUSSION OF A QUANTITATIVE THEORY OF HETEROGENEOUS RETURNS TO WEALTH

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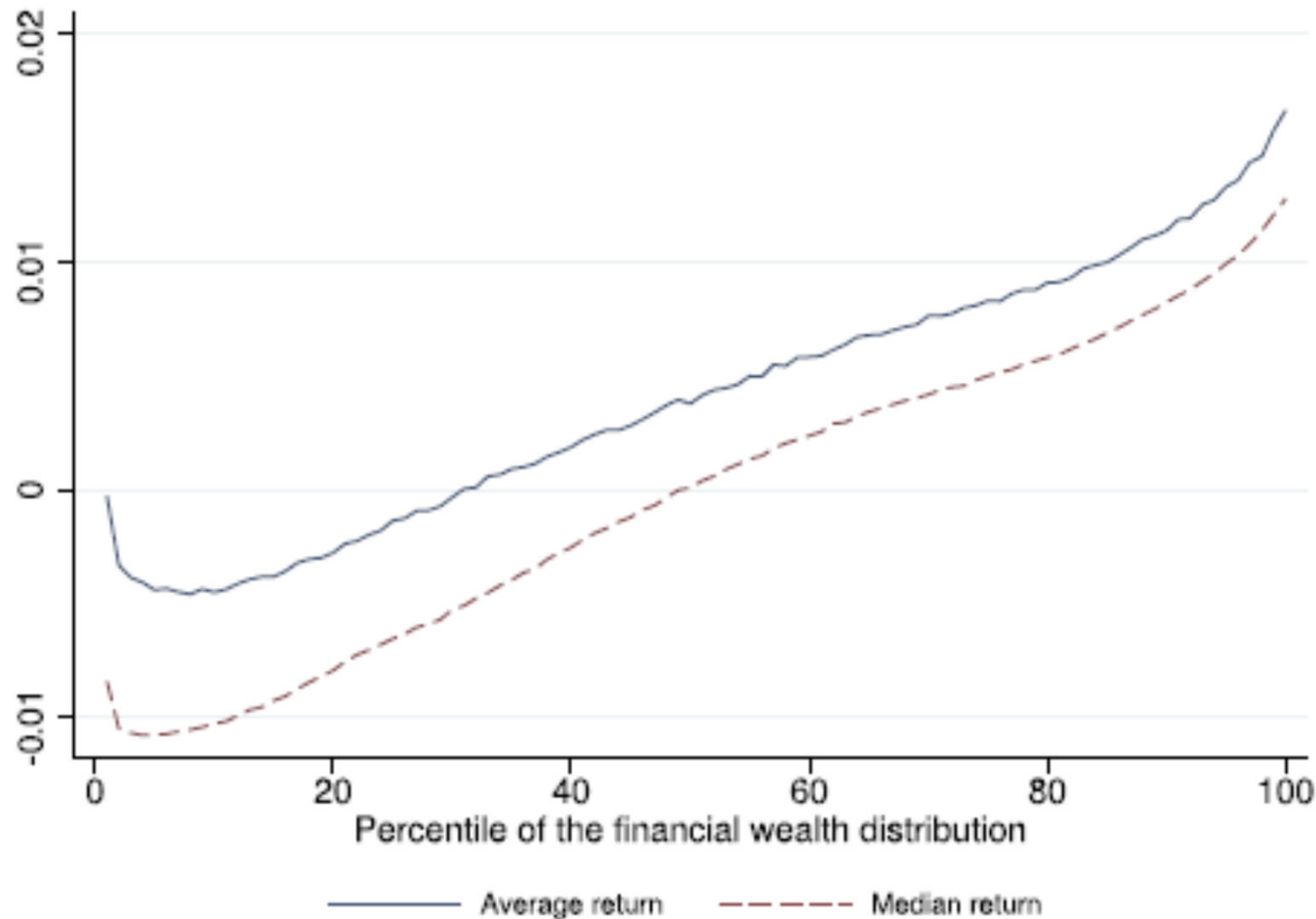
Recent Developments in Empirical Macroeconomics:
A Tribute to Bob Hall
Stanford, SIEPR
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OUTLINE

- 1) Heterogeneity in investor returns and potential explanations
- 2) Summary and key mechanisms
- 3) Is the model about investors and firms, or intermediaries?
- 4) Is this the right model of sophistication?

1. RETURN HETEROGENEITY

HETEROGENEITY AND PERSISTENCE IN RETURNS TO WEALTH



Panel A: Return to financial wealth

RETURN HETEROGENEITY

Explanations for return heterogeneity.

1. Risk aversion: 2-fund separation theorem
2. Hedging: e.g. housing, labor income.
3. Costs: fixed costs or bundling with services (checking acct. vs. saving account)
4. Other frictions: incentives (employer stock), private business, regulation of qualified investors, etc. mostly only for very wealthy
5. Sophistication. . .

2. SUMMARY OF PAPER

- Identical firms, CRS, No aggregate uncertainty
- Investors differ by income, wealth, financial sophistication
(Bewley + financial sophistication and matching friction)

Timing

1. Firms (differ by k) hire & produce; workers receive return on $t-1$ saving, profit share, and (stochastic) w_l , and consume
2. Money injected into the economy
3. Investors invest in (stochastic) financial sophistication
4. Firms each post r , which will be a distribution.
5. Investors matched randomly to (stochastic) number of firms, increasing in financial sophistic., choose highest r (maybe money)
6. Firms buy k

SUMMARY

At each posted r , a firm must (expect to) make the same profits.

- A firm posting $r = MPK$ makes no profits, so all $r < MPK$
- The distribution of r has no mass points. If not, one firm at mass point can increase r by a tiny bit and win all previous ties
- The distribution is continuous and goes all the way down to the minimum return (money). If not, then above any gap, the bottom firm drops to epsilon above the bottom r of the gap (or the minimum).

Result 1: the distribution of r is non-degenerate, so investors earn different rates of return

SUMMARY

Result 2: Heterogeneity in investor returns endogenous and interacts with heterogeneity in investor sophistication.

- When the inflation rate is higher, the bottom of the distribution of r shifts down. The distribution spreads out so there is more inequality in returns. More wealth inequality.
- Sophistication amplifies: more return to sophistication for wealthy
- General equilibrium amplifies: As finance spread widens, households (on average) face a lower r , save less, K declines, MPK rises, more dispersion.
- Note: another experiment with subsidizing sophistication, but evidence suggests that pushed financial education has almost no effects.
- Note: This may change with fixed costs & free entry, because the profitability of firms will be pinned down, only their mass will vary

Results 3: This is a model of the evolution of the efficiency of the financial sector at transferring saving to investment.

- Investors earn a distribution of r , firms all earn MPK

3. FINANCIAL INTERMEDIARIES

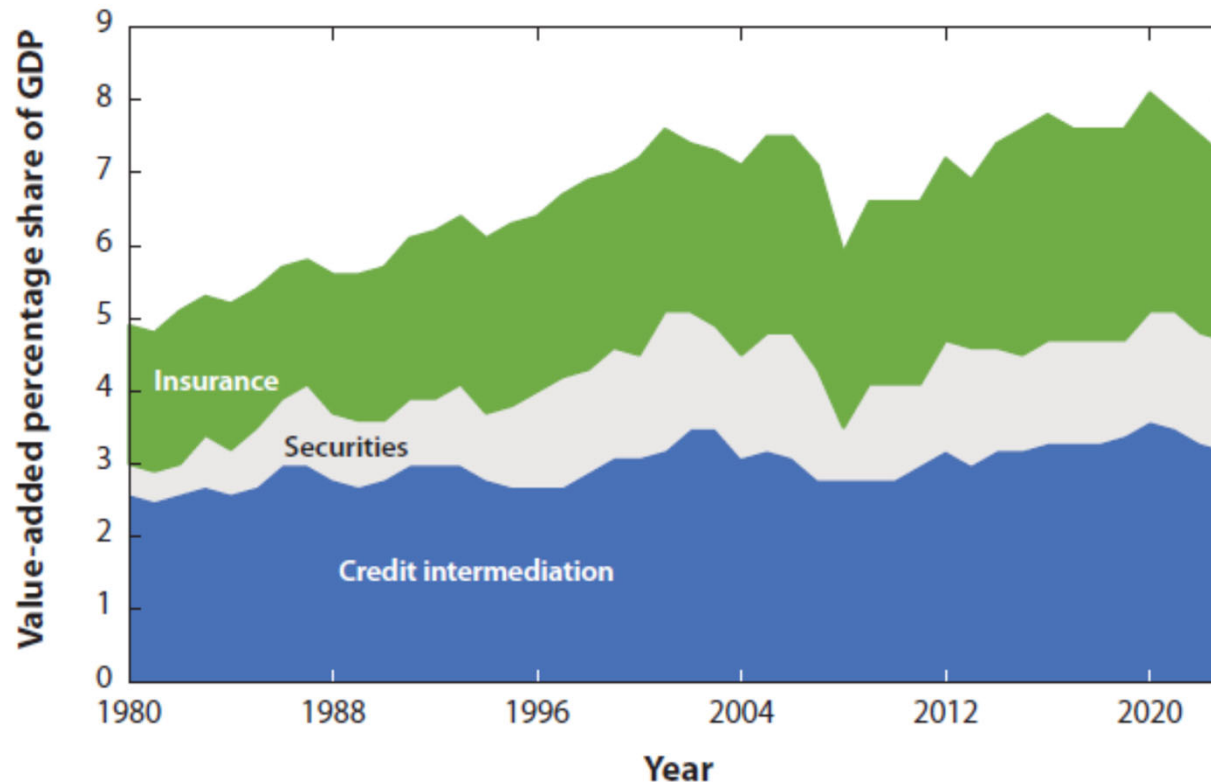


Figure 2

The growth of financial service subsectors, 1980–2023. Securities includes two subsectors: (a) securities, commodity contracts, and investments as well as (b) funds, trusts, and other financial vehicles. Data from US Bureau of Economic Analysis (2014, 2023a).

FINANCIAL INTERMEDIARIES?

This is not a model of firms posting r

- Model predicts larger firms have higher cost of capital
- Mutual funds, investment advisers, pension fund managers, PE and VC funds?

This is not a model of trading existing assets, but of issuance because it is about the cost of capital.

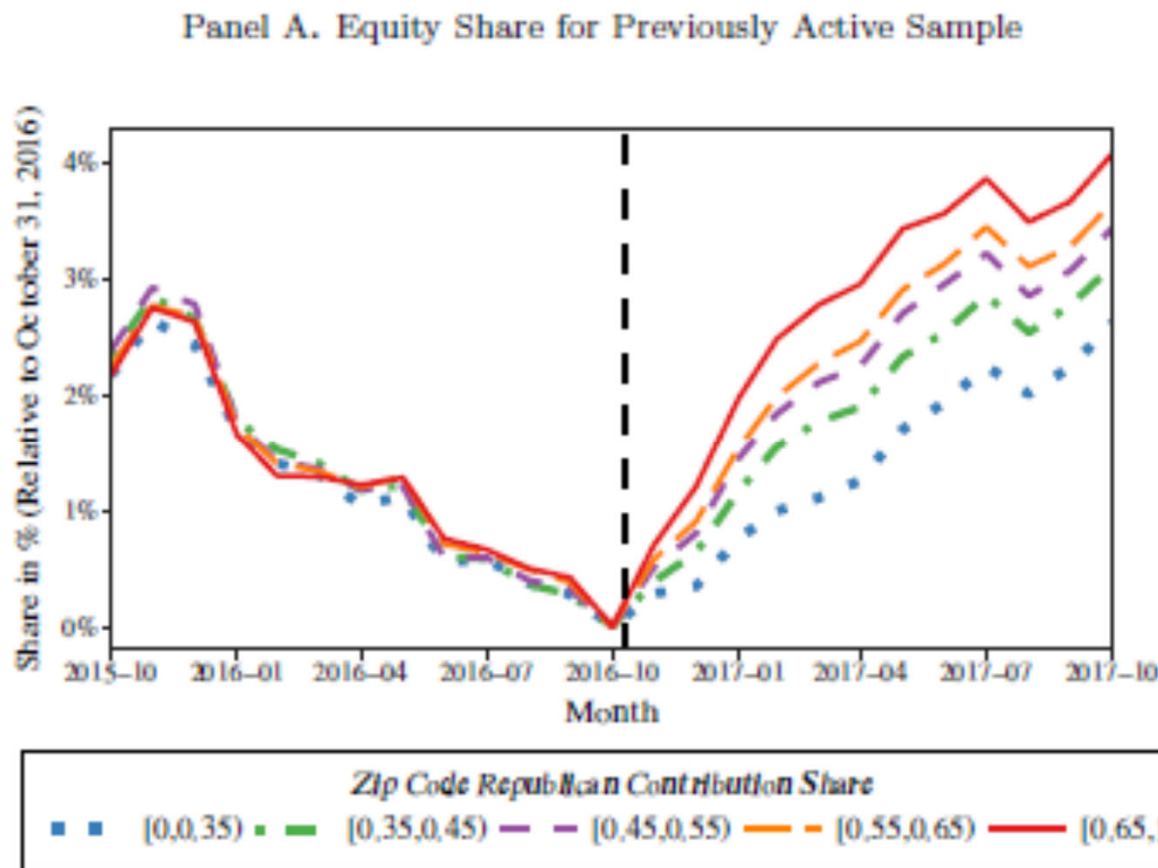
- IPOs, bond issuance, VC, PE, private credit?
- Comment: Financial intermediaries are also “sophisticated” relative to many firms.
- Do firms search to get low r ?

4. SOPHISTICATION AS SEARCH?

Lots of evidence for lack of sophistication in household finance

1. Search models (and demand systems with consideration sets) in borrowing/debt. e.g. auto loans. Also bank deposit rates.
2. Stocks and bonds are competitive, yet return heterogeneity.
 - Advise: don't pick stocks, get a mutual fund . . .
 - And sensitivity to nudges and products (e.g. TDFs)
3. Beliefs?
 - In our models, people use assets to pool risk and allocate aggregate risk to the most risk tolerant
 - In practice: hold a diversified portfolio but also **gamble** with market timing & a few stocks (& YOLO out of the money one day options?)
 - Manipulation of beliefs with advertising (Hortacsu and Syverson 2004), response of fee structure to Vanguard entry (Sun, 2021)
 - Evidence for beliefs driving portfolio choice:

BELIEFS



Controlling for hedging by comparing workers at the same firm,
living in same county, controlling for income and wealth
Do households use assets to hedge and pool risks, or to gamble?

CONCLUSION

1. Neat model of price dispersion applied to the financial sector to generate: heterogeneity in returns across people and in cost of capital across “firms”
2. Endogenous return heterogeneity interacting with endogenous wealth inequality
3. Model of the inefficiency of the financial sector: bigger gap between MPK and r leads to less capital and lower output (like a tax on capital)
4. Is this about firms or financial intermediaries, and if financial intermediaries, do firms also search for low r ?
5. Is matching with more firms the main way we should think about sophistication?