Lecture 11

Good Research Topics and Open Questions

Distributional Macroeconomics

Part II of ECON 2149

Benjamin Moll

Harvard University, Spring 2018

1. Improve Macro Theories of Income Distribution

- Title of course/lecture "Income and Wealth Distribution in Macro"
- Aiyagari-Bewley-Huggett model = rich theory of wealth distribution
  - caveat: ability to match data? See problem set
  - either way, important building block for richer models
- ... but no deep theory of income distribution
  - labor income $= w \times z$, $z =$ exogenous process
  - capital income $= r \times a$, i.e. proportional to wealth
- Can we do better?
  - idea: marry with assignment model $\Rightarrow$ income $= w(z)$, $w'' \neq 0$
- References:
  - Sattinger (1979), "Differential Rents and the Distribution of Earnings"
  - these Acemoglu lecture notes `http://economics.mit.edu/files/10480`
  - Gabaix and Landier (2008), "Why has CEO Pay Increased so Much?"
  - Acemoglu and Autor (2011), "Skills, Tasks and Technologies"

2. Less Restrictive Assignment Models?

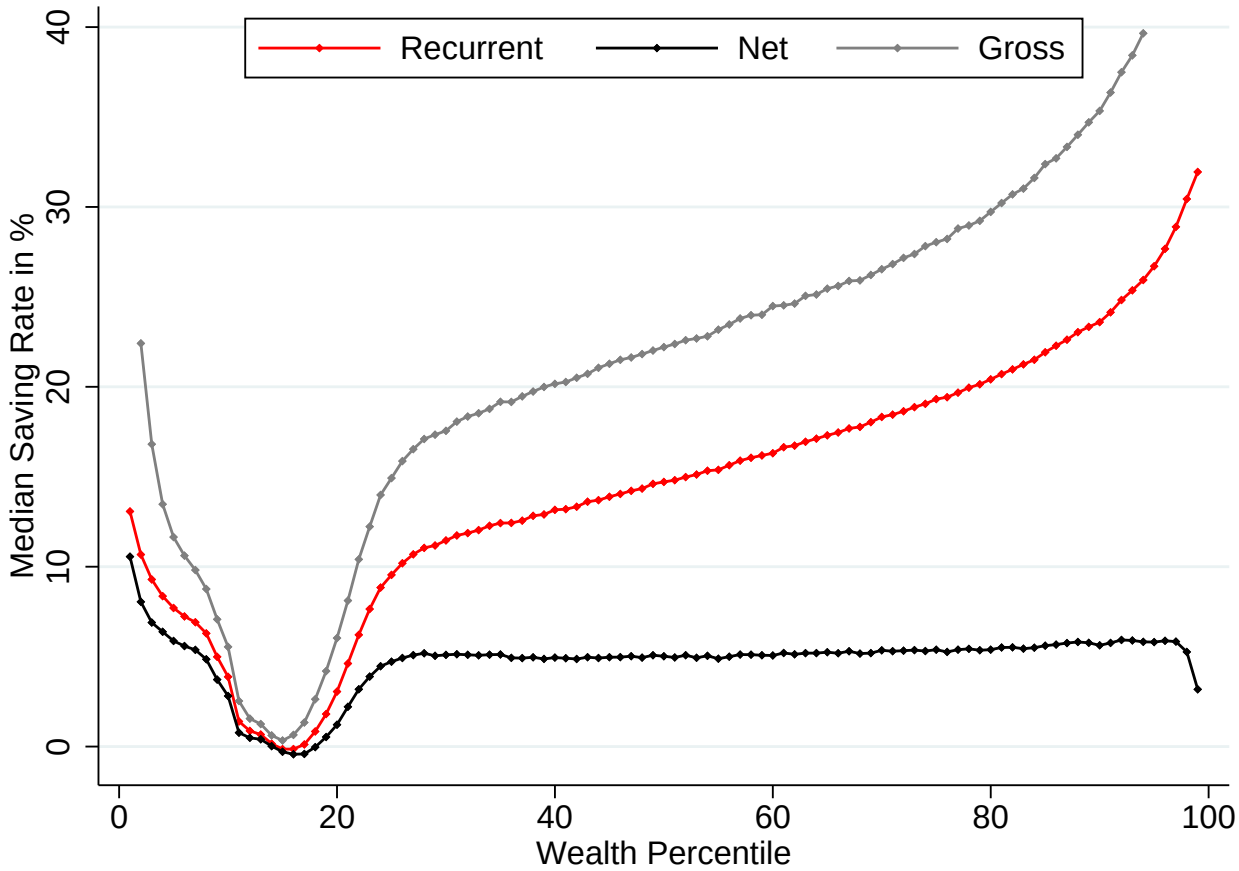
- Sattinger setup, notation in `http://economics.mit.edu/files/10480`
- Workers with skill s, CDF $H(s)$
- Firms with productivity x, CDF $G(x)$
- One-to-one matching, output $f(x, s)$
- Result: if $f_{xs}(x, s) > 0$ all (x, s) (f is supermodular), then "positive assortative matching" (PAM), assignment equation is

$$x = \phi(s) \quad \text{with} \quad \phi' > 0$$

- Wage function $w(s)$ found from $w'(s) = f_s(\phi(s), s) \Rightarrow w''(s) > 0$
- Open question:
  - supermodularity = strong, sufficient condition for obtaining assignment equation $x = \phi(s)$
  - obtain assignment equation under weaker assumptions than supermodularity, still able to say something?
  - Optimal transport theory may be useful (Galichon, Villani, ...)

3. Integrating Het Agent Macro & Household Finance

- het agent macro and wealth inequality literatures need to take into account changing asset prices
- e.g. in Fagereng-Holm-Moll-Natvik, we find that large fraction of rich people's saving is via recurrent capital gains



3. Integrating Het Agent Macro & Household Finance

- Macro needs to take household balance sheets seriously, but not just liquid/illiquid assets without asset price risk as in KV & KMV
- Potentially large payoffs from this
- E.g. consider Kindleberger's "Manias, Panics and Crashes"
  `http://www.princeton.edu/~moll/kindleberger.pdf`
  - "In the manic phase, people of wealth or credit switch out of money to borrow to buy real or illiquid financial assets."
  - "In panic, the reverse movement takes place, for real or financial assets to money or repayment of debt, with a crash in the prices of commodities, houses, buildings, land, stocks, bonds – in short, whatever has been the subject of the mania."
- Can we make sense of statements like this/spell this out?
  - unclear
  - but what's clear is that attempts of doing so need to feature: (i) heterogeneity, (ii) multiple assets (& something behavioral?)

4. Integrating Het Agent Macro & Behavioral Econ

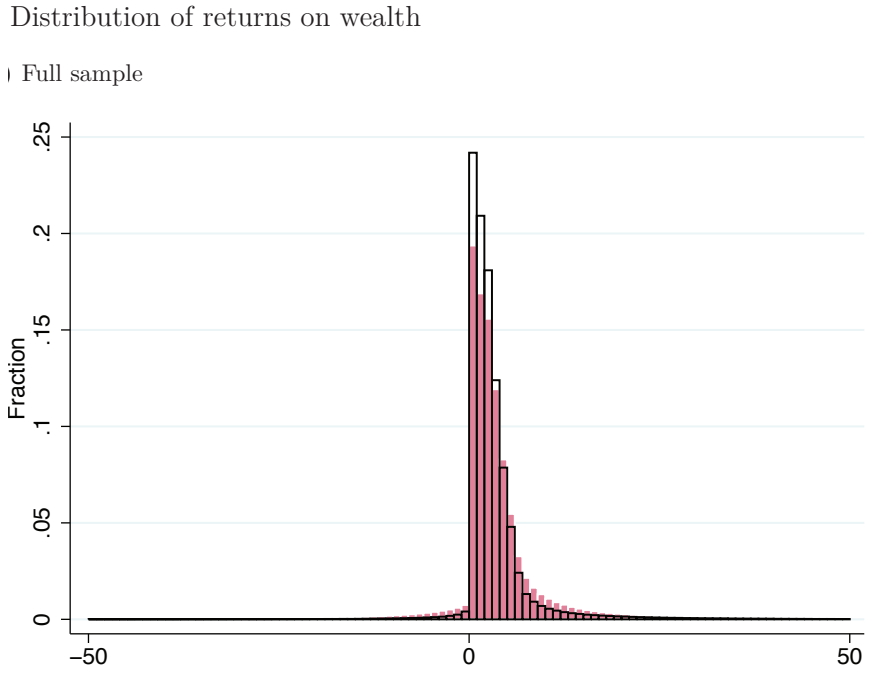
- Reason to believe there are interesting interactions
  - example: Farhi-Werning "Monetary Policy, Bounded Rationality, and Incomplete Markets"
- As another example, consider hyperbolic discounting
  - Barro "Laibson meets Ramsey in Neoclassical Growth Model": in rep agent model, only changes effective discount rate
  - but we know that hyperbolic discounting does have bite when
    1. there are borrowing constraints
    2. with portfolio choice
  - both of these are standard features of theories we covered
- $\Rightarrow$ does adding hyperbolic discounting to standard macro het agent models generate something interesting?
- Also potentially important: departures from rational expectations
  - survey expectations typically feature extreme heterogeneity
  - more generally, literature needs more empirical discipline!

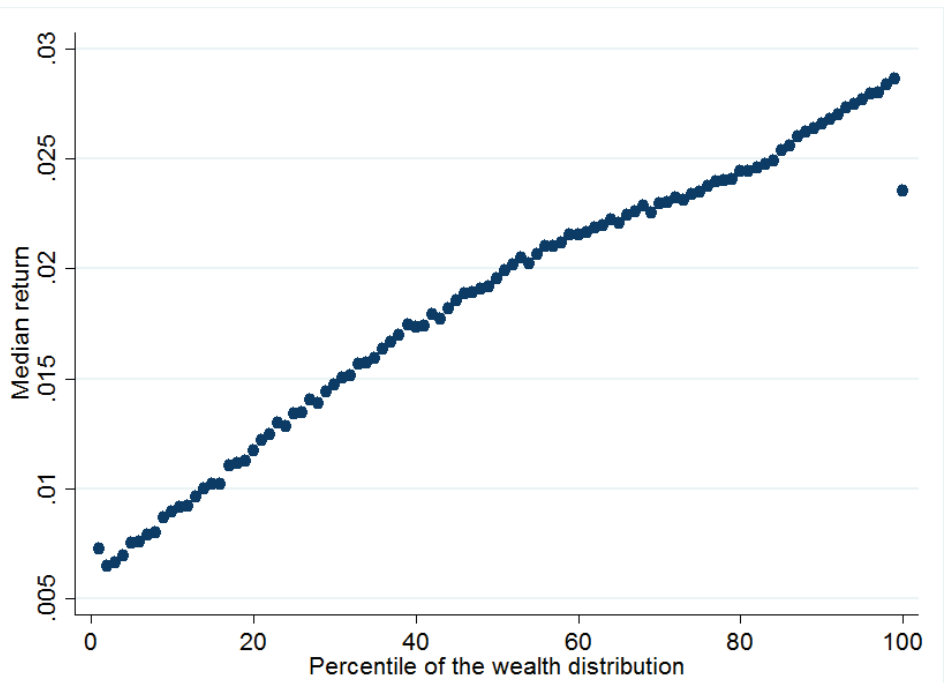
5. Drivers of Top Inequality?

- "What fraction" of top inequality is efficient in the sense of people getting paid marginal product? What fraction due to rent-seeking?
- What are the underlying economic forces that drove the increase in top inequality?
  - technical change?
  - globalization?
  - superstars?
  - rent-seeking?
  - particular sectors/occupations?
- Evidence for scale- and type-dependence?
  - for wealth: Fagereng, Guiso, Malacrino and Pistaferri (2016), "Heterogeneity and Persistence in Returns to Wealth"
  - what about income?

5. Returns to Wealth: Fagereng et al (2016)

- Using Norwegian administrative data (Norway has wealth tax), document massive heterogeneity in returns to wealth
  - range of over 500 basis points between 10th and 90th pctile
  - returns positively correlated with wealth





- Interesting open question: can a process for returns to wealth like the one documented by FGMP quantitatively generate fast dynamics in top wealth inequality?

6. Open Questions in HANK literature

- Loads left to do! Just see Janet Yellen's speech:

  `http://www.federalreserve.gov/newsevents/speech/yellen20161014a.htm`

  - "the various linkages between heterogeneity and aggregate demand are not yet well understood, either empirically or theoretically."
  - "More broadly, even though the tools of monetary policy are generally not well suited to achieve distributional objectives, it is important for policymakers to understand and monitor the effects of macroeconomic developments on different groups within society."

- Two more or less random examples of great questions:

  1. Does inequality affect level of aggregate consumption/saving?
     some progress in Auclert and Rognlie (2016) "Inequality and Aggregate Demand"
  2. How does housing/mortgages affect monetary transmission?
     some progress in Hedlund-Karahan-Mitman-Ozkan (2016) "Monetary Policy, Heterogeneity and the Housing Channel"

- Particularly useful: empirical evidence but through lens of model
  e.g. Cloyne-Ferreira-Surico "Monetary Policy when Households have Debt"

7. HANK for Firms

- Many of HANK literature's arguments about household behavior have analogues for firms
  - representative firm models just don't cut it vis à vis micro data
- Nice example of relevant empirical evidence: Zwick and Mahon (2017) "Tax Policy and Heterogeneous Investment Behavior"
  - small and cash-poor companies respond more to tax breaks for new equipment ("bonus depreciation")
  - firms respond strongly when policy generates immediate cash flows, but not when cash flows only come in future
  - "This heterogeneity [...] supports models in which financial frictions or fixed costs amplify investment responses."
- For example of macro model taking this seriously, see Winberry (2016) "Lumpy Investment, Business Cycles, and Stimulus Policy"
- But again still lots left to do! Example: policy analysis in GE.

A Good Model for Doing "Micro to Macro" Research

- What should interplay of theory and data look like?
- What's a good model for doing macro work that takes heterogeneity and aggregation seriously?
- Disclaimer: like everything else, my personal opinion – really there is no single "right" approach here!
- I like the following model for doing research: "identified moments"
    - not a new idea, already implemented in a number of papers but nicely spelled out and given a name in Nakamura & Steinsson (2018) "Identification in Macroeconomics"
    - (see footnote: "The term 'identified moments' may seems odd to some...")
    - nicely fits in with "distributional macro" philosophy
    - typical strategy for empirically disciplining parameters of macro models: use some set of moments (calibration or GMM)
    - key idea: some moments are better than others

Example: Marginal Propensity to Consume

- Huge literature, some with arguably random variation:
  - e.g. Johnson-Parker-Souleles, Parker-Souleles-Johnson-McClelland, Fagereng-Holm-Natvik, ...
- Idea: MPCs from this literature are credibly "identified moments"
- $\Rightarrow$ if you have a macro model, and MPCs are central to what you are using it for, your model better match these MPC estimates
- Nice example: Kaplan and Violante (2014)
- In principle, could include MPC estimates as explicit calibration targets (if I recall correctly, Kaplan-Violante don't)
- End product of "identified moments" research model:
  - structural model that can be used for policy analysis
  - but at least partly satisfies "applied micro standard" for credible identification of a causal effect

And finally, some more general advice

Above all: be ambitious, try to think big, take risks

- "What explains recessions?"
- as opposed to ε variation on your advisor's work!

Read the newspaper, economics blogs, old books, crazy articles from other fields, policy debates, really anything else that may inspire you

- "If you want to be interesting, you have to be interested"

Get your hands on some (high-quality micro) data & play around with it

- Erik Hurst homework 1: find a fact in micro data that interests you

  `http://faculty.chicagobooth.edu/erik.hurst/teaching/index_phd.html`

Be just a little bit strategic and figure out what "the market" wants

Thanks for six fun weeks!