What do I mean by “Distributional Macroeconomics”?

• Study of macroeconomic questions in terms of distributions rather than just aggregates
  
  • typical example: distributions of income and wealth

• More technically: macroeconomic theories in which relevant state variable is a distribution (or: “heterogeneous agent models”)
Main Message

• Hard to coherently think about macro if ignore distribution

• Instead, rich interaction:

inequality $\iff$ macroeconomy
Plan

1. Inequality in macroeconomics: a history of thought

2. Three applications of “distributional macro” from my own work

- based on joint work with Yves Achdou, SeHyoun Ahn, Abhijit Banerjee, Paco Buera, Andreas Fagereng, Jiequn Han, Martin Holm, Greg Kaplan, Jean-Michel Lasry, Pierre-Louis Lions, Bob Lucas, Gisle Natvik, Galo Nuño, Gianluca Violante, Tom Winberry, Christian Wolf
Inequality in Macro: A History of Thought

I find it useful to categorize macroeconomic theories as follows:

- **before modern macro**: 1930 to 1970
- **1st generation modern macro**: 1970 to 1990
- **2nd generation modern macro**: 1990 to financial crisis
- **3rd generation modern macro**: after the financial crisis

Main drivers of evolution in modern macro era

1. better data
2. better computers & algorithms
3. current events (rising inequality, financial crisis)
Before Modern Macro: 1930 to 1970

1. Keynesian IS/LM: about aggregates, no role for inequality/distribution by design

2. Distribution does play role in growth theory
   - mostly *factor* income distribution: Kaldor, Pasinetti and other Cambridge UK theorists
   - rarely *personal* income distribution: e.g. Stiglitz, Blinder

3.Disconnected empirical work on inequality (Kuznets)
First Generation Macro Theories: 1970 to 1990

Representative agent models, e.g. RBC & New Keynesian models

About aggregates, no role for inequality/distribution by design

Advertised as “microfounded” but representative agent assumption cuts 1st generation modern macro from micro inequality research
What’s wrong with that?

1. cannot speak to a number of important empirical facts, e.g.
   - unequally distributed growth
   - poorest hit hardest in recessions

2. cannot think coherently about welfare – “who gains, who loses?”
Second generation theories incorporate heterogeneity from micro data, particularly in income and wealth.
Second generation theories represent economy with a distribution...
Second generation theories represent economy with a distribution... that moves over time, responding to macroeconomic shocks, policies...
Second generation theories can potentially speak to

- unequally distributed growth
- poorest hit hardest in recessions

and are useful for welfare analysis
Second Generation Theories: Inequality $\not\Rightarrow$ Macro

- Typical finding: heterogeneity doesn’t matter much for macro agg’s
- Reason: in these theories, rich and poor differ in wealth but not consumption and saving behavior – rich = scaled version of poor
- Hence “inequality $\not\Rightarrow$ macro”, but also a knife-edge result
- Problem: in data, rich $\neq$ scaled version of poor, e.g. rich have
  - lower MPCs out of transitory income changes
  - higher saving rates out of permanent income, wealth
- Note: some important contributions from same time period don’t fit my narrative
  - Banerjee-Newman, Benabou, Galor-Zeira, Persson-Tabellini, ...
  - also related: 1950s “capitalist-worker theories” of Kaldor, Pasinetti, ...
Third Generation Theories: after the Crisis

• 3rd generation theories take micro data more seriously

• Leads them to emphasize things like
  • household balance sheets
  • credit constraints
  • MPCs that are high on average but heterogeneous
  • non-homotheticities, non-convexities

• Typical finding: distribution matters for macro

• Momentarily: three examples from my own work
Inequality in Macro: Summary

• Before modern macro: 1930 to 1970
  • it’s complicated

• 1st generation: 1970 to 1990
  • representative agent models (RBC, New Keynesian etc)
  • no role for inequality by design

• 2nd generation: 1990 to financial crisis
  • early “distributional macro” models
  • “macro ⇒ inequality” but “macro \(\not\equiv\) inequality”

• 3rd generation: after the financial crisis
  • current “distributional macro” models
  • rich interaction: “inequality \(\leftrightarrow\) macro”

• “Prior to the financial crisis, representative-agent models were the dominant paradigm for analyzing many macroeconomic questions [= 1st generation].”

• “However, a disaggregated approach seems needed to understand some key aspects of the Great Recession...”

• “While the economics profession has long been aware that these issues matter, their effects had been incorporated into macro models only to a very limited extent prior to the financial crisis [= 2nd generation].”

• “I am glad to now see a greater emphasis on the possible macroeconomic consequences of heterogeneity [= 3rd generation].”
Three Applications
Application 1: Monetary Transmission Mechanism

• From “Monetary Policy According to HANK” with Kaplan & Violante

• Distributional macro changes how to think about monetary policy

• Question: consumption response to interest rate cut?

• In standard “New Keynesian” framework used by central banks:
  • consumption ↑ due to strong intertemporal substitution
  • tiny indirect GE/multiplier effects because tiny MPCs
  • but both inconsistent with empirical evidence!

• Instead, in our framework consistent with micro evidence:
  • micro sensitivities to income and interest rate changes
    heterogeneous, depend on households’ balance sheets
  • 30% direct effects, 70% indirect GE effects
  • response of aggregate consumption depends on distribution
Application 2: Aggregate Consumption in a Recession

- From “When Inequality Matters for Macro and Macro Matters for Inequality” with Ahn, Kaplan, Winberry & Wolf
- Thought experiment: consumption response to negative income shock that disproportionately hits low-skilled households?
- 1st and 2nd generation view: low-skilled households well insured
- Our view: low-skilled not well insured, many live hand to mouth

![Graph showing aggregate consumption over quarters with 1st and 3rd generation projections]
Application 3: Misallocation and Productivity Losses from Financial Frictions

• From papers with Banerjee, Buera, Itskhoki

• Typical emerging economy:
  • imperfect credit market
  • large number of privately held firms

• With well-functioning credit market:
  • resources allocated to their most efficient use
  • independent of owners’ wealth

• Instead, with poorly-functioning credit market:
  • inefficient allocation of resources, low aggregate productivity
  • resource allocation tied to owners’ wealth
  • aggregate productivity depends on wealth distribution
Distributional Macroeconomics: Summary

• Yesterday’s discussion: policy institutions lack framework for thinking about distributional implications of macro policies

• Current macro research offers exactly that: economy = joint distribution of micro variables, not collection of aggregates

- Often: can’t ignore distribution even if care only about aggregates
- Not yet part of policy makers’ toolkit, but starting to change:
  • various central banks currently developing their own 3rd generation frameworks
References: Some “Third Generation” Papers

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- Auclert (2016) “Monetary Policy and the Redistribution Channel”
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- Den Haan, Rendahl & Riegler (2017) “Unemployment (fears) and Deflationary Spirals,”
- Guerrieri & Lorenzoni (2017) “Credit Crises, Precautionary Savings, and the Liquidity Trap”
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• Luetticke (2017), “Transmission of Monetary Policy with Heterogeneity in Household Portfolios”


• Hedlund, Karahan, Mitman & Ozkan (2017) “Monetary Policy, Heterogeneity and the Housing Channel”

• Hagedorn, Manovskii & Mitman (2017) “The Fiscal Multiplier”

• Oh & Reis (2012), “Targeted Transfers and the Fiscal Response to the Great Recession”


• Straub (2017), “Consumption, Savings & the Distribution of Permanent Income”

• Werning (2016), “Incomplete Markets and Aggregate Demand” (depends)

• Wong (2016), “Population Aging and the Transmission of Monetary Policy to Consumption”
References: Other Academic Articles

• Aiyagari (1994) “Uninsured Idiosyncratic Risk and Aggregate Saving”


• Benabou (1996) “Inequality and Growth”

• Bewley (1986) “Stationary Monetary Equilibrium with a Continuum of Independently Fluctuating Consumers”


• De Nardi & Fella (2017) “Saving and Wealth Inequality”

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- Krueger, Mitman & Perri (2016) “Macroeconomics and Household Heterogeneity”
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• Kaplan and Violante (2016) “Wealthy ‘hand-to-mouth’ households: key to understanding the impacts of fiscal stimulus”
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• Kocherlakota (2009) “Some Thoughts on the State of Macro”


• Yellen (2016) “Macroeconomic Research After the Crisis”
  https://www.federalreserve.gov/newsevents/speech/yellen20161014a.htm