Behavioral Macroeconomics

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“Textbook” Model

Three equations:
• Consumption Euler eq.
• Phillips curve
• Taylor rule
### Big Divide in Macroeconomics

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Consumption Euler Equation

Big Picture: How does consumption respond to income and interest rates?

\[ U'(C_t) = \beta E_t (1 + R_{i,t+1}) U'(C_{t+1}) \]
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Lots of research on this one

• But views still diverge on whether behavioral features are needed versus “sophisticated” rational models

• Two examples
  – Post-retirement consumption drop
    • Hurst, 2008: “The Retirement of a Consumption Puzzle” argues consumption complementarities explain drop
    • But e.g. Chetty et al, 2013 find little “rational response” to differences in firms’ retirement contributions
  – High MPC’s
    • Kaplan-Violante (2014) argue that illiquid assets generate high MPC’s even for rich people
    • But maybe even households with high liquidity have high MPC’s (Pagel-Varnadottir, 2016)
Phillips Curve

Big Picture: How does inflation respond to future inflation expectations and output gap

\[ \pi_t = \beta E_t(\pi_{t+1}) + \kappa (Y_t - Y^*) \]
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Phillips Curve

Big Picture: How does inflation respond to future inflation expectations and output gap

$$\pi_t = \beta E_t(\pi_{t+1}) + \kappa(Y_t-Y^*)$$

But should it look like this?

$$\pi_t = \beta \pi_{t-1} + \kappa(Y_t-Y^*)$$

Or this?

$$\pi_t = \beta \pi_{t-1} + \gamma E_t(\pi_{t+1}) + \kappa(Y_t-Y^*)$$
Phillips Curve: Short history

• “Old” Keynesian models used to have people use purely adaptive expectations to update views

• Sargent (1981) pointed out that end of hyperinflations don’t fit this view (at all)

• New Keynesian model hyper-forward looking

• Views seem to be trending back in the adaptive expectations direction
  – But where in between should we stop?
Consumption Function: Short history

• “Old” Keynesian view: Consumption a function of current income
• Friedman etc. argued that this didn’t make any sense. People should be forward looking
• New Keynesian model hyper-forward looking
• Views seem to be trending back towards less forward-looking models (e.g., recent research on forward guidance “puzzle”)
  – But where in between should we stop?
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Microfoundations for Phillips curve

• Calvo “model”: Fixed probability of change
• Menu cost model: Fixed cost of adjustment
  – Acceptable to freshwater macroeconomists

Much maligned: Not much empirical evidence that this is “really” what is going on
  – E.g., Survey evidence suggests customers are important
  – Behavioral factors probably important

But will they yield a different Phillips curve?
Many alternatives to rational expectations on the table...

• Rational inattention (Woodford, 2002; Sims, 2003)
• Sticky information (Mankiw-Reis, 2002)
• Sparsity (Gabaix, 2014)
• K-level thinking (Woodford-Garcia-Schmidt, 2015; Farhi-Werning, 2016)
• Lack of common knowledge (Lucas, 1972; Angeletos-Lian, 2017)
• Present bias (Laibson 1997; O’Donoghue-Rabin, 1999)
• Personal expectations (Malmendier-Nagel 2011, 2016)
Guiding principles

• Macroeconomists have a lot going on in their models
  – You will always get the questions: “Is this Big” and “Does this matter for macro” in a macro seminar

• Macro is only one letter away from Macho
  – Frictions are for girlymen in macroland
  – Macroeconomists unlikely to include “new frictions” unless they have clear payoffs
Is It First Order for Macro?

- Can we tell the difference?
- Will it make a difference?
- Maybe we should just empirically estimate degree of forward-lookingness?
- Is it worth adding another parameter to already super-complicated models?

Perhaps it make the model simpler?
PE vs. GE thinking

• Big challenge in solving macro models is GE consequences of policies
  – Often a fixed point problem
  – But if we can’t solve the model, can the people in our models?

• Recent work considers possibility that individuals see PE but not GE consequences of e.g. monetary policy (e.g., Gabaix, Farhi & Werning, Woodford-Garcia-Schmidt)
  – Interest rates may fall, but I have no idea what this will do to my income
  – May make models easier to solve
Price-Level Determinacy

• What really pins down the level of prices and inflation?
  – Could there be self-fulfilling bubbles (multiple equilibria) if people start expecting these little green pieces of paper to lose value
  – Old debate and recent confusion (Cochrane, 2012)

• Traditional arguments for uniqueness require “superrational” beliefs about the distant future

• My conjecture: If we all woke up tomorrow and “remembered” high inflation for the last 10 years, the inflation rate would jump (Malmendier-Nagel, 2014)

• Maybe “behavioral” model provides more compelling, and simpler reason for uniqueness
Welfare Costs of Business Cycles

• Famous argument by Lucas that standard models imply small welfare costs of business cycles (Lucas, 1987)
  – Why Lucas stopped working on business cycles
  – Large follow-up literature on what is missing from model

• But is there a more radical view?
  – Macro (and micro) typically assume that people dislike working (e.g. people like days off)
  – But is this reasonable for unemployment?

• Man’s search for meaning (Ariely et al., 2008) may be important
  – Unemployment may affect people’s happiness and sense of self-worth (beyond the impact on their bank accounts)