Discussion of Monetary Policy and the Redistribution Channel

Discussion by Gauti Eggertsson

NY Fed conference

Paper's goal

- Establish the link between redistribution and monetary policy.
  - Fisher debt-deflation channel
  - **Interest rate exposure channel**
- Traditional effect of monetary policy
  - Intertemporal substitution channel.
- Interest rate exposure channel provides connection to mortgage contracts
  - Does the effect of monetary policy depend on the nature on morgage contracts? **Yes.**

Aggregate Demand up to the Crisis

$$Y_t = E_t Y_{t+1} - \sigma(i_t - E_t \pi_{t+1} - r_t^e)$$

Representative household.

No role for redistribution. Mortgage design irrelevant

Why RHH? Main focus was on price dynamics.

Price dynamics here ?

$$P_t = \bar{P}$$

Focus: How aggregate spending (AD) evolves taking prices as given

- Fisher Debt Deflation Channel
  - Net nominal position (NNP)
- Interest rate channel
  - Unhedged interest rate exposure (URE)
- These things matter (redistribution) only to the extend that people consume differently out of wealth (MPC differ).
- Need to think about how this exposure is correlated with MPC.
- Very nice characterization in terms of sufficient statistics.

Organization

1. Fisher Effect and Interest Rate Exposure effect in a stripped down model.
   - Will not be doing justice to the sufficient statistic approach, which includes several models.
2. Role of duration and relation to mortgage contracts.
3. Comment on key mechanism in main GE model.

Basic *variation on Eggertsson-Krugman (2012*)

$$E_0 \sum_{t=0}^{\infty} \beta(i)^t \log C_t(i) \text{ with } i = s \text{ or b}$$

$$D_t(i) = (1 + i_{t-1}) D_{t-1}(i) - \frac{1}{2} P_t Y_t + P_t C_t(i)$$

$$(1 + r_t) \frac{D_t(i)}{P_t} \leq \bar{D}_t > 0$$

$$\beta(s) = \beta$$

Equilibrium in simple model: Steady state with P=P(L)

Borrower will borrow up to borrowing limit

$$C_L^b = \frac{1}{2} Y_L - (1-\beta)\bar{D}_L$$

Saver consumes endowment plus interest income

$$C_L^s = \frac{1}{2} Y_L + (1-\beta)\bar{D}_L$$

Saver satisfies Consumption Euler

Stead state interest will satisfy the savers discount factor

$$r = \frac{1-\beta}{\beta}$$

Experiment: Unexpected shock

There is a short run in which one of three variables is unexpectedly different

$$Y_S, \bar{D}_S, i_S$$

Look at an equilibria in which the borrower is at a his constraint

Short run

Exogenous

$$\bar{D}_S, i_S, Y_S$$

$$Y_S = C_S^s + C_S^b$$

$$C_S^b = \frac{1}{2} Y_S + \frac{\bar{D}}{1+i_S} \frac{P_L}{P_S} - \frac{\bar{D}_S}{P_S}$$

Interest Rate Exposure Channel

Fisher Channel

Endogenous

$$C_S^s, C_S^s, P_S$$

$$C_S^s = \frac{1}{1+i_S} \frac{P_L}{P_S} \beta^{-1} C_L^s$$

Intertemporal substitution channel

Production

- Each household supplies a labor endowment inelastically

$$L_t^b = L_t^s = \bar{L}$$

- Perfectly competitive firms maximize profits:

$$Y_t = L_t^{\alpha} \qquad \frac{W_t}{P_t} = \alpha L_t^{\alpha-1}$$

- If no further frictions exactly the same economy as before.

$$Y_t = \bar{L}^{\alpha}$$

Short run sticky wage: Aggregate supply

- Assume that for whatever reason wages in the short run do not adjust

$$W_S = 1 \qquad \frac{W_S}{P_S} = \alpha Y_S^{\frac{\alpha-1}{\alpha}} \qquad Y_S = L_S^{\alpha}$$

- Then

$$P_S = \frac{1}{\alpha} Y_S^{\frac{1-\alpha}{\alpha}}$$

Aggregate supply

$$\alpha \to 1 \quad \text{then } P_S = 1$$

Key point: Output can be different from labor endowment
What pins down equilibrium? Aggregate demand

Aggregate demand

$$\bar{D}_S, i_S$$

$$C_S^s, C_S^s, P_S, Y_S$$

$$P_S = \frac{1}{\alpha} Y_S^{\frac{1-\alpha}{\alpha}}$$

$$Y_S = C_S^s + C_S^b$$

$$C_S^b = \frac{1}{2} Y_S + \frac{\bar{D}}{1+i_S} \frac{P_L}{P_S} - \frac{D_S}{P_S}$$

Interest Rate Exposure Channel

Fisher Channel

$$C_S^s = \frac{1}{1+i_S} \frac{P_L}{P_S} \beta^{-1} C_L^s$$

Interest Rate Exposure Channel

What is the interest rate exposure channel?

$$C_S^b = \frac{1}{2} Y_S + \frac{\bar{D}}{1+i_S} \frac{P_L}{P_S} - \frac{D_S}{P_S}$$

- Comes from the borrowing constraint:
- Borrower is rolling over his debt
- Reduction in real interest rate ***increases his borrowing capacity***.
- He is at the borrowing constraint (MPC=1) so he will spend 1 to 1 any extra dollar.

Long term debt and interest rate exposure channel

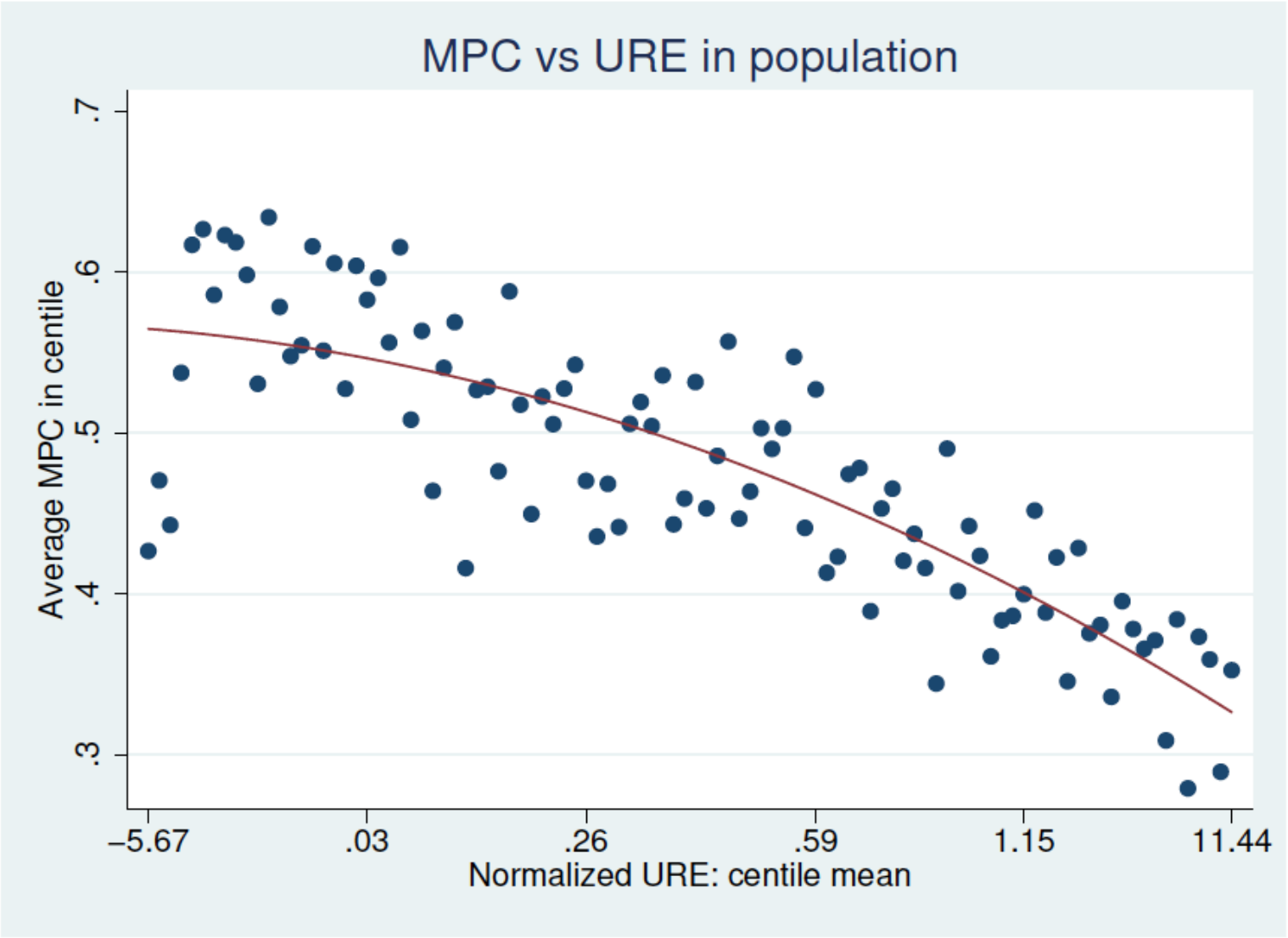
$$C_S^b = \frac{1}{2} Y_S + \frac{\bar{D}}{1+i_S} \frac{P_L}{P_S} - \frac{D_S}{P_S}$$

- This is all short term debt.
- Real interest rate will have a lot of effect on how much debt you can roll over.
- What if you hold long term debt?
- Less to refinance each and every period
- Smaller interest rate exposure

Co-variance of interest rate exposure and MPC

- In the model “borrower” has interest rate exposure.
- Also the one that has very high MPC.
- That “correlation” is key to result.
- Established explicitly in paper.
- Paper develops “sufficient statistics” of MPC and URE

Data


MPC vs URE in population
Average MPC in centile
.3
.4
.5
.6
.7
−5.67
.03
.26
.59
1.15
11.44
Normalized URE: centile mean

Some key results

- Paper argues that “interest rate exposure channel” may be as important as the intertemporal substitution channel via mix of empirical evidence and simulations.
- Implication: Structure of mortgage contacts have a big impact.
  - Suppose all US mortgages adjustable rates as in UK: Monetary policy doubles in impact.
- Model: Bewley style model.
  - Interesting assymetric effects in model

Overall assessment

- Very interesting paper
- Sophisticated combination of hard modeling and data work.
- Expect this to be a very influential paper.
- Comments ….

Comment

$$-Q_t \Lambda_{t+1} \leq \bar{D}_t P_t$$

- Would like to see a more explicit discussion on the relationship between long term debt and the borrowing constraint.
- Do people react to “balance sheet losses” of this kind?
- Lot of the action is coming from there.
  - Don’t have a fixed view on how reasonable this is

Conclusion

- Nice paper and an important contribution
- Suspect we will see many papers going forward exploring the details of Aggregate Demand.
- Housing and mortgages surely have a big role to play there.