Discussion of

“Optimal Fiscal and Monetary Policy under Rare Disasters: The Role of Government Debt and Monetary Conservatism”

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Motivation

- Great Recession of 2008-20??: Massive decline in economic activity.

- Massive (discretionary?) response of monetary and fiscal policy
  - Monetary policy: reduction in $i$ (and more exotic measures)
  - Fiscal policy: expansion in $G$ and in $B$
[Add GDP Growth Plot]
This Paper

- Determines numerically the optimal fiscal (tax and debt) and monetary (interest rate and money supply) policy in DSGE model with
  - Monopolistic competition
  - Price rigidity
  - Transaction costs that induce a money demand function
This Paper

- Three Key model ingredients not present in classic Ramsey optimal policy literature (as in e.g. Schmitt-Grohe and Uribe, 2004).
  - Rare productivity and government spending “disasters”
  - Potentially non-benevolent objective of the government
  - Inability of government to commit to policies ⇒ time consistency problem
Model: Standard Elements (Households)

- Households are workers, consumers-savers and producers

- Preferences

\[ E_0 \sum_{t=0}^{\infty} \beta^t \left( \frac{c_t^{1-\sigma}}{1-\sigma} - \alpha h_t \right) \]

- As worker, earn after tax wage \((1 - \tau_t)P_t w_t h_t\).
Model: Standard Elements (Households) _______

- As consumer purchases final good, which is a CES aggregate of continuum of intermediate goods with elasticity of substitution $\theta$. Cost of purchasing $c_t$ is

$$\left[1 + s \left(\frac{c_t P_t}{M_t}\right)\right] P_t c_t$$

which delivers money demand equation. Here $s$ is a time and policy-invariant function.

- As saver purchases cash $M_{t+1}$ and nominal government bonds $B_{t+1}$ at price $q_t = \frac{1}{1+i_t}$
Model: Standard Elements (Households)

- As monopolistically competitive producer of intermediate good with linear technology and aggregate productivity $a_t$ faces demand

$$d(\tilde{P}_t, P_t, y_t) = y_t \left( \frac{\tilde{P}_t}{P_t} \right)^{-\theta}$$

- Price adjustment costs

$$\frac{\kappa}{2} \left( \frac{\tilde{P}_t}{\tilde{P}_{t-1}} - 1 \right)^2$$
Model: Standard Elements (Government)

- Monetary policy $\bar{M}_{t+1}, q_t = \frac{1}{1+i_t}$

- Fiscal policy $\tau_t, \bar{B}_{t+1}$

- Budget constraint
  \[ \tau_t p_t w_t h_t + (\bar{M}_{t+1} - \bar{M}_t) + q_t \bar{B}_{t+1} = P_t g_t + \bar{B}_t \]
Model: Nonstandard Elements

- Rare disasters

\[
\log a_{t+1} = \rho_a \log a_t + \varepsilon_{t+1}^a + \log(1 - \kappa_t) \\
\log g_{t+1} = (1 - \rho_g)\bar{g} + \rho_g \log g_t + \varepsilon_{t+1}^g + \log(1 + \eta_t)
\]

- Government objective: period return function

\[
\frac{c_t^{1-\sigma}}{1 - \sigma} - \alpha h_t - \delta \left( \frac{P_t}{P_{t-1}} - \pi^* \right)^2
\]

and intertemporal discount factor \( \beta \).
Model: Nonstandard Elements: Optimal Markov Policy without Commitment

- Government cannot commit to future policies (but can commit to not default outright on its debt).

- Individual state variables $S = (M, B, \tilde{P}_{-})$. Aggregate state variables $\bar{S} = (\bar{M}, \bar{B}, P_{-1}; a, g)$.

- Government policy $\Psi$ maps $S$ into $(M', B', \tau, q)$.

- Given $\Psi$, household decision rule $D$ maps $(S, \bar{S})$ into $(M', B', \tilde{P}, c, h, \_)$.
Time Line

$S, S_{bar}$

Current Government
- Takes as given $D(\cdot), \Psi'(\cdot)$
- Chooses $\Psi(\cdot)$

Households
- Given $\Psi(\cdot) = \Psi'(\cdot)$

New Government
- Chooses $\Psi'(\cdot)$
- Choose $D(\cdot)$

Equilibrium: $D(\cdot), \Psi'(\cdot)$

Consistency: $\Psi(\cdot) = \Psi'(\cdot)$
Ambitious model delivers convincing answers, but for what question?

I take main questions to be (authors may disagree)

- How should monetary and fiscal policy respond to a disaster?
- Without government commitment, should there be monetary conservatism?
Question 1: How should Policy respond to a Disaster?

Our main interest in studying stabilization policies under lack of commitment is in characterizing the optimal response to a simultaneous disaster in a and g. Although our model is tacit about its genesis, such event can be casually interpreted as a financial crisis [p. 24]

- How about the current financial crisis?
Question 1: How should Policy respond to a Disaster?

- Collapse of 30% in TFP?

- (Exogenous) increase in $G$ by 50% a disaster? Certainly in the model! Welfare calculations!?

- Why do we need a model with $\delta > 0$ to answer this question? Turns out we don’t.
[Add p. 26-27 Plot]
Question 2: Why Monetary Conservatism

- Government has weird preferences $\frac{c^{1-\sigma}}{1-\sigma} - \alpha h - \delta \left( \frac{P}{P_{-1}} - \pi^* \right)^2$

- With commitment of government, no role for $\delta > 0$.

- But without commitment there might be inflation bias. Policies pursued with government objective $\delta > 0$ might be welfare enhancing even if they maximize the “wrong” objective.

- Results seem to confirm this.
Question 2: Why Monetary Conservatism

- With $\delta = 0$, the model has different ergodic distributions. Not clear the figure gives conclusive answers about welfare.

- Would really like to see:
  - Interpret $\delta$ as a structural parameter and calibrate it.
  - Let government choose $\pi^*$ optimally, once and for all with full commitment. What would it be?

- Side remark: do we really need rare disasters to answer this question?
[Add p. 25 Plot]
Comments: Computation

- Large shocks: local approximation might not be good enough. Paper uses global techniques. Good!
  - Show how good, relative to local approximations.
  - Show how nonlinear model is

- Approximation with polynomials efficient, but usually not good if policy functions have kinks. Doesn’t the zero lower bound for \( i \) cause kinks?
To Conclude

- Very ambitious model, computed with methods at the frontier of what is feasible.

- Lots of answers. But question(s) could be sharpened.

- Model used should fit the question(s). Correct shocks? Reasonable propagation?