Optimal Policy with Endogenous Signal Extraction: Hauk, Lanteri, Marcet (2016)

Discussant: Juan Passadore

June 12, 2016

Intro

- Challenges in Policy Design:
  - choose policies with limited information about model/fundamentals
  - variables to guess fundamentals are endogenous
- Question: policy design with endogenous signals?
- Paper: explores this question in AMSS setup. Two *contributions*:
  - Theory. General methodology. Applications. Clarifying.
  - Application. Fiscal Policy. Automatic stabilizers.
- Discussion:
  - Recap Main results.
  - Some comments.

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Full Information: Benchmark

- Setup:
  - Full Commitment.
  - 2 Periods. c_1, l_1, c_2, l_2 and τ_1, τ_2, b spending g.
  - Shocks. Productivity θl and taste shock $\gamma u(c)$.
- Equilibrium: taxes and labor supply

$$\frac{v'(l_1)}{u'(\theta l_1 - g)} = \theta\gamma(1 - \tau_1)$$

  - Unambiguous effect of the taste shock γ.
  - Ambiguous effect of the productivity shock θ.
  - Inference from high l? Unclear. Set id.
- Optimal Policy: high l is associated with high or low taxes? Depends on the shock. Perfect tax smoothing.

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Imperfect Information: Theory, Result 1

- Setup:
  - Perfect inf. households. Imperfect information government.
  - Signal I. Policy $\tau = \mathcal{R}(I)$. Reaction $I = h(\tau; \theta, \gamma)$. Program is

$$\max_{\mathcal{R}} \mathbb{E}_{\theta,\gamma} \left[W(I; \theta, \gamma) \right] \ s.t. \ \ \tau = \mathcal{R}(I) \qquad I = h(\tau; \theta, \gamma)$$

- Main Result, Theory:
  - Characterize Optimal Policy, modified FOC. Given $\bar{I}$, choose $\mathcal{R}$ so:

$$\int_{\theta \in \Theta(I_1, \mathcal{R})} W_I \frac{h_\tau}{h_\gamma} f_\theta(\theta) f_\gamma(\tilde{\gamma}) d\theta = 0$$

  - Policy changes support and the probability measure
  - Perfect smoothing? Unfeasible.
  - Less volatile taxes (closer to complete markets). Testable implication.

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Imperfect Information: Application, Result 2

- Setup:
  - iid shocks learnt after one period. Linear utility.
  - Markov equilibria with debt.

$$W(b) = \max_{\tau(I;b)} \mathbb{E}\left[\gamma(\theta I - g) - v(I) + \beta W(b') - \beta \frac{\chi}{2}(b' - b_{max})^2\right]$$

$$I = h(\tau(I;b), \theta, \gamma)$$

- Main Result, Application:
  - $\tau(I;b)$ more responsive for high debt.
  - Delay. Rationalizes ex-post behavior in Euro Area.
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Comments

- Result 1: Quantifying the channel
  - Theory paper. Still.
  - Consumption Equivalent?
- Result 2: Is the debt set too constrained?

$$\beta W(b') - \beta \frac{\chi}{2}(b' - b_{max})^2$$

  - Yes. Default?
  - No. Imposed debt set in Euro Area? Banks?
  - Do you actually approximate to the threshold?
- A taste for robustness?
  - $\theta\gamma \implies$ set id. $\Theta(I, \mathcal{R}, b)$
  - max,min. Loss function of debt.

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Final Remarks

- Really nice paper.
- Interesting and policy relevant question.
- Only the essential components to make the point.
- Setting is natural for other optimal policy applications
  - Monetary policy, Sov Debt
  - Managing Expectations
  - Influencing beliefs of agents
- Looking forward to more papers coming!
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