Discussion of
Social Insurance, Information Revelation and Lack of Commitment

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Celebrating one more Great Prize for Bob Lucas
October, 2016.
• Impressive paper: Hidden information and lack of commitment.

• Which problems do we have in mind?

• Section 2: Two period model. \((2 \times 2 \times 2)\)

• Section 3: Infinite period model. \((\infty, N, \text{endogenous})\)

• Talk about \((2 \times 2 \times 1)\) and then \((2 \times 2 \times 2)\).
• Unit mass of agents with preferences

\[ E \left[ \theta^i \ln c_1(i) + \ln c_2(i) \right], \text{ for } i \in [0, 1] \]

• \( \theta^i = 1 + \Delta \) with probability \( \frac{1}{2} \) (high)

• \( \theta^i = 1 - \Delta \) with probability \( \frac{1}{2} \) (low)

• Endowment is 1 in each period.
Timing

- Principal chooses contract.

- Agents make announcement $(l, h)$

- Principal reoptimizes. If changes contract, pays $\kappa$.

- First period consumption.

- Second period consumption.
First best:

• Max

\[ \frac{1}{2} [(1 - \Delta) \ln c_1(l) + \ln c_2(l)] + \frac{1}{2} [(1 + \Delta) \ln c_1(h) + \ln c_2(h)] \]

st

\[ \frac{1}{2} [c_1(l) + c_1(h) + c_2(l) + c_2(h)] \leq 2 \]

• Solution

\[
\begin{align*}
    c_1(l)^{FB} &= (1 - \Delta) \\
    c_1(h)^{FB} &= (1 + \Delta) \\
    c_2(l)^{FB} &= c_2(h)^{FB} = 1,
\end{align*}
\]
• Utility of first best

\[ U^{FB} = \frac{1}{2} \ln[(1 - \Delta)^{(1-\Delta)}(1 + \Delta)^{(1+\Delta)}] > 0 \text{ for } \Delta > 0 \]

• Autarky:

\[ c_1(l) = c_1(h) = c_2(l) = c_2(h) = 1. \]

• Utility at autarky

\[ U^A = 0 \]
Hidden information.

- Max

\[
\frac{1}{2} [(1 - \Delta) \ln c_1(l) + \ln c_2(l)] + \frac{1}{2} [(1 + \Delta) \ln c_1(h) + \ln c_2(h)]
\]

st

\[
\frac{1}{2} [c_1(l) + c_1(h) + c_2(l) + c_2(h)] \leq 2
\]

and

\[
[\ln c_2(l) - \ln c_2(h)] \geq \theta^l [\ln c_1(h) - \ln c_1(l)]
\]
Solution

\[ c_1(l)^{FB} < c_1(l)^{HI} < 1 < c_1(h)^{HI} < c_1(h)^{FB} \]

\[ c_2(l)^{HI} > c_2(h)^{HI} \]

Utility of hidden information

\[ U^{FB} > U^{HI} > U^{A} = 0 \]
• Consider agents revealed type and principal reoptimizes.

• At that stage, principal solves FB problem.

• It will chose **not** to change to the FB contract iff

\[ U^{FB} - \kappa \leq U^{HI} \]

• Thus, if this condition holds, the HI solutions obtains.

• If not, and all agents are treated equally, autarky is the solution.

  – Contract is not credible, incentive constraint not satisfied, no information revealed.
• Assume that the HI is not sustainable

\[ U^{FB} - \kappa > U^{HI} \, . \]

• Split the unit mass into two groups of agents, \( i \in [0, \alpha) \) and \( j \in [\alpha, 1] \).

• Consider the following social contract

  – HI allocation to \( i \in [0, \alpha) \),

  – autarky to \( j \in [\alpha, 1] \).

• Principal acquires less information.
• This is credible as long as

$$\alpha U^{FB} + (1 - \alpha) U^A - \kappa < \alpha U^{HI} + (1 - \alpha) U^A$$

or

$$\alpha U^{FB} - \kappa < \alpha U^{HI}$$

• This condition is satisfied for $\alpha$ small enough.
• Can find $\tilde{\alpha}$ such that

$$U^{FB} - \frac{k}{\tilde{\alpha}} = U^{HI}$$

• $\tilde{\alpha}$ is a measure of the degree of social insurance that is sustainable.

• Avoid having "too much" information.

• Source of asymmetry: $U_i > U_j$ for $i \in [0, \alpha)$, and $j \in [\alpha, 1]$. 
• Beauty of the dynamic model:
  – $\kappa, \alpha$ and utility levels for each group are all endogenous.

• Comments:
  – Even simpler $2 \times 2 \times 2$.
  – How should we rethink social insurance?