

Insurance II

12/04/2008

Final Exam: Friday 12/12 9am SB 201

Pre-midterm material: Population lectures, chapter 9

Post-midterm material: Chapter 11-15, only portion of Prof. Foster's lectures relevant to HW 5 #1.

In-class review Tuesday 12/9; I am available Tuesday-Thursday, email to set time

Today's Agenda

1. The perfect insurance model (15.2)
2. Limits to insurance: Information (15.3)
3. Limits to insurance: Enforcement (15.4)

So far—

- Individuals can smooth their consumption through self-insurance, credit or mutual insurance
- We saw a very simple example of mutual insurance with two people

1. The Perfect Insurance Model

Basics

- Let's expand last class's insurance scheme to an entire village with a large number of farmers
- Assume the fortunes of all people in the village are independent
- What is the average income of this village—model this as a “coin-tossing” problem
- We see various forms of informal insurance schemes in developing countries
- Such transactions are based on some social norm of reciprocity
- What are the economic incentives that sustain social institutions and norms?

A. The perfect insurance model—Theory

Each (identical) farmer's income:

$$Y = A + \varepsilon + \theta$$

A = each farmer's average income

ε = random shock to each farmer (independent of each other)

θ = common/aggregate uncertainty in village

- A is average income, so the random terms have mean value zero
- Think about all idiosyncratic variation in ε being insured away like we discussed before

So each farmer's insured income after smoothing is given by:

$$Y\text{-bar} = A + \theta \text{ (=consumption)}$$

- If farmer's are risk-averse, they will prefer Y-bar to Y
- Can aggregate shock θ be insured away as well?

B. The perfect insurance model— Empirical Evidence

- We can test whether perfect insurance model holds by running a regression of the following form:
- If people do insure perfectly, what coefficients should we expect?
- This means fluctuations/shocks in individual household income should not effect consumption
- There are some serious empirical problems that need to be tackled before running such a regression
- Once econometric issues are overcome, Indian data (1975-84) shows effect of household income on individual consumption is no more than 14%, coefficients on group consumption is one
- We see smoothing taking place but cannot be sure it is insurance
- Studies in Thailand, Cote D'Ivoire do not show smoothing; even in the Indian data smoothing may be restricted to better-off households
- And what if households smooth their income stream in the first place?
- Generally, perfect insurance model does not fit empirical facts.

2. Limits to Insurance: Information

- Why can't households insure one another even when income shocks are idiosyncratic?
- The limits to perfect insurance can be traced back to usual suspects: limited information and limited enforceability
- Two kind of information problems:
 - i. Community members may not have information to verify claim of final outcome
 - ii. To what extent did individual actions lead to final outcome—moral hazard

A. Limited Information about the final outcome

- This informational barrier precludes insurance over very large anonymous groups or spatial distances
- Whether this problem exists at village level depends on the level of *social capital* within a village
- If this information problem does exist then insurance very difficult to implement

B. Limited information about what led to the outcome

- Moral hazard—the possibility that the occurrence of some insurable event can be influenced by unobservable actions of the individual
- Let's see how full insurance may compromise incentives to put in full effort

- We see that each farmer has incentive to slack off under a perfect insurance scheme.
- To what extent can insurance be provided? That is, what is the imperfect/second-best insurance scheme?

- Information constraints pose a problem for effective insurance, so we may see insurance networks over groups with better access to information of members e.g. families. But what is the drawback of this?

3. Limits to insurance: Enforcement

- Mutual insurance contracts rarely written down and enforced by law
- What are the enforcement issues

A. Enforcements-based limits to perfect insurance

- Model

B. Enforcement and imperfect insurance

- What if enforcement constraint does not hold—perfect insurance is unattainable
- What is the second-best insurance available?
- Write down the insurance budget equation and enforcement constraint.

- In order to find the second-best insurance scheme, we are looking for “least dispersed” values of X and Y that are compatible with both equations. Figure below plots how the LHS of the enforcement constraint changes as we alter X from the perfect insurance case to the no-insurance case.

$$u(X) + N\{ pu(X) + (1-p)u(Y) \} \geq u(H) + N\{ pu(H) + (1-p)u(L) \} - S$$

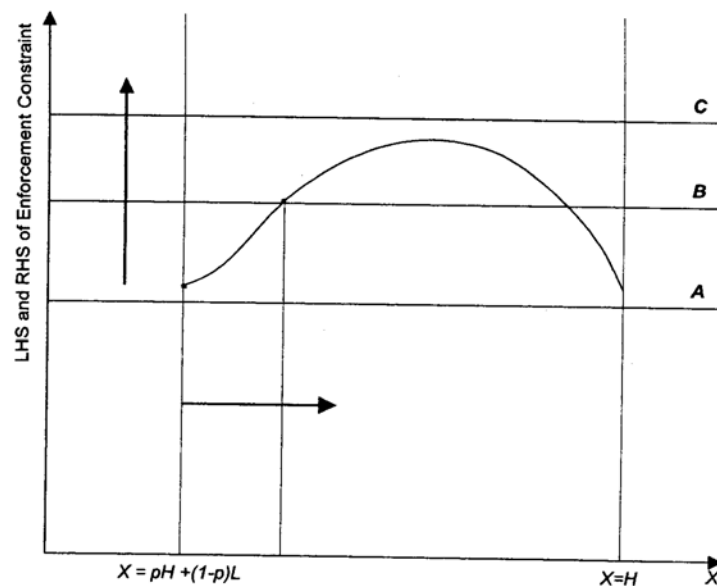


Figure 15.1. The enforcement constraint and imperfect insurance.

C. Some Extensions

- i. Self-insurance and mutual insurance: The greater the possibilities for self-insurance, the more likely it is that mutual insurance schemes won't work.
- ii. Correlated shocks: say we were to expand the model to include correlated shocks. Who will want to deviate when the entire economy is in an aggregate depressed state? What happens as inequality increases?
- iii. Credit versus insurance
 - What is the difference between credit and insurance?
 - Thinking about a credit-insurance mix scheme