

Land I

10/05/2008

Today's Agenda

1. Features of missing markets
2. Land rental contracts—contractual forms
3. Risk, tenancy and sharecropping

1. Missing Markets

- Interesting feature of rural organization—missing markets in land, labor, credit and insurance
- Three important reasons underlying imperfections within markets—information, incentives and limits to contracts
- Another important feature is that imperfections within one sector spill over into another.
- These features complicate real economies, otherwise all we would have to do is study supply and demand!
- Missing markets/imperfections within markets give rise to informal institutions, which serve to plug loopholes created because of incentive, informational or contractual constraints
- Some examples of these constraints

A. Information

i. Unobserved actions

- You lease land to tenant and expects tenant to put in some minimal effort
- You cannot observe effort
- Say you observe effort via amount of output produced. What's the problem now?
- Contract is limited due to imperfection stemming from lack of observability
- Moral hazard—danger that an agent will take actions in his interest and not yours.

ii. Unobserved types

- You lend to poor farmers
- Some borrowers are intrinsically bad risks but you do not know which ones, no records
- What if you charge high interest rates?

B. Incentives

i. Conflicts with insurance

- Return to first scenario
- Say you use indirect evidence to determine whether tenant shirking
- Such a contract creates uncertainty for economic agents who dislike uncertainty—lack of insurance creates inefficiency
- Not much you can do about this

ii. Short-term contracts

- Employer does not have unlimited rights over an employee
- No incentive for employer to invest in worker in form of nutrition of on-the-job training—in the end both employer and employee worse off
- Paradox of slavery

C. Enforcement

i. Limited Liability

- Lending to poor farmers
- If the risky investment project fails, you get nothing back
- So borrowers will want to over-invest in risky projects because lender bears downside risk
- Competitive assumption that borrowers can get all they want at a given rate of interest is violated
- Credit rationing—loan levels stay low, interest rates not raised because riskier borrowers attracted

ii. Breaking agreements

- Say farmers A and B have mutual insurance scheme
- Weak legal system may not be able to enforce contracts
- Informal insurance based on social agreement with sanctions evolves
- Information central to such a setup

2. Land Markets

- Proper functioning of land market important to economy
- Assume there are two inputs into production—land and labor
- Land is often unequally distributed

(Figure 12.1)

- Varying land-labor ratios lead to emergence of markets in labor and land
- Land market—large landowners lease out tracts of land to tenants
- We see variations in tenancy arrangements around the world—fixed rent and sharecropping

A. Contractual Forms

$$R = \alpha Y + F$$

- $\alpha=0, F>0$: fixed-rent contract with rent F
- α between 0 and 1, $F=0$: sharecropping contract with α going to landlord
- $\alpha=0, F < 0$: pure wage contract

B. Contracts and Incentives

- Marshallian inefficiency: Since sharecropping leaves the tenant with less than 100% of additional output, tenant will have incentive to undersupply effort.
- In the goal is to maximize output, will charging high fixed rent and then let tenant keep 120% of output increase efficiency even more?

C. Closer examination

- Production function
- Production costs—labor has a cost (e.g. opportunity cost)
- Which amount of labor L^* will maximize economic surplus?

(Figure 12.2)

i. Sharecropping

(Figure 12.3)

ii. Fixed-rent

(Figure 12.4)

- Use of contracts other than fixed-rent leads to a distortion of tenants input supply away from efficient level
- A rational landowner trying to maximize the earnings from land lease will always prefer a suitable fixed-rent contract to any share contract

- Return to Marshallian paradox: why it is not optimal to offer a return higher than 100%

(Figure 12.5)

- Some empirical evidence of lower yields associated with sharecropping
 - But then why do we see such a persistence of sharecropping?
3. Risk, tenancy and sharecropping
- Answer lies in understanding risk-aversion
 - Individual is risk-averse if he prefers certain sum of money to a lottery with the same expected value as A
 - She can be compensated for risk, but the greater the risk-aversion, the greater will have to be the compensation
- A. Utility from risky projects

(Figure 12.6)

B. Application to land contracts

- Abstract from production function, some fixed amount of labor and other inputs being applied to tenanted land
- Introduce uncertainty—even if farmer applies all inputs possible, size of harvest heavily dependent on nature
- Two levels of output—G (good), B (bad); $G > B$
- Landlord less risk-averse than tenant

A. Fixed-Rent

Tenant pays R to risk-neutral landlord no matter what output is

Tenant get G-R if good state

B-R if bad state

Probability of G is p

B. Sharecropping

Let's choose share so that expected return is exactly same as before. Expected return to landlord is:

$$psG + (1-p)sB$$

So if we equate the fixed-rent return to expected sharecropping return,

$$s = R/[pG + (1-p)B]$$

So, the landlord does the same under both cases. But which does tenant prefer?

- Under good state, fixed-rent yields G-R and sharecropping yields (1-s)G

$$(1-s)G - (G-R) = R - sG = R - GR/[pG + (1-p)B] < 0$$

Since $G > B$

- o Return to tenant in good state is lower
- o Return in bad state must be higher (since we set expected return to be same)
- o Spread of returns to tenant under sharecropping is narrower
- o Thus, if tenant is risk-averse he should prefer sharecropping
- o Landlord can play on this preference by cutting share a bit more, now he has a higher payoff
- o Sharecropping way to share not just output but also risk