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January 27, 2010

ECON 4915 Development Economics (2010)

Seminar 1

Question 1
(For relevant discussion, check Bardhan Udry Ch. 6 Part II)

Suppose the production function is given by θe, where e denotes the tenant's effort and θ is a random parameter with expected value 1. The tenant's utility is given by $u_T(Y_T) - \frac{e^2}{2}$, where Y_T denotes the tenant's income. The landlord's utility is given by $u_L(Y_L)$ where Y_L denotes the landlord's income. For simplicity, we assume that output is priced at 1, so that the market value of θe is also θe.

a) Define fixed rent contract, sharecropping contract and wage contract. (while describing a wage contract, you can assume that effort is observable). In the given framework, describe the landlord and the tenant's utility under these different contractual scheme.

Assume both the landlord and the tenant are risk neutral, and $u_T(x) = u_L(x) = x$. Consider a contract in which the tenant's income is given by $Y_T = \alpha\theta e + S$, where α is the tenant's share and S is the side payment from the landlord to the tenant.

b) Describe the tenant's participation constraint when his reservation utility is given by zero. Next, describe the incentive compatibility constraint. Find the optimal level of share that the landlord prefers. Discuss your result.

Suppose the agent (tenant) is risk-averse and his utility is given by $u_T(x) = \log(1 + x)$. Further assume the following simplification: θ takes two values - $1/p$ with probability p, for some $p \in (0, 1)$, and 0 with probability $1 - p$.

c) Characterize the tenant's participation constraint and incentive compatibility constraint in the above scenario. Describe the landlord's optimization problem that determines how output should be split between the landlord and the tenant. (I do not expect you to find the optimal share, but you should describe the optimization problem that determines it).

Question 2

Consider the limited liability constraint model introduced in Bardhan & Udry (Ch. 6, part III, pp 67-70). Consider the following simplification: effort cost $d(e) = e^2$, reservation utility $m = 1/4$, and the wealth level is given by $w = 0$. So the limited liability constraint effectively reduces to $l \geq 0$.

a) First describe the landlord's least cost contract $(h(e), l(e))$ to induce an effort level of e.

b) For which values of effort, the limited liability constraint is binding?

Assume that the output in the high state is given by $H = 3$. Consider the following three scenarios in which the output in the low state is given by $L = 2.5, 2$ and 0.5.

c) Find the equilibrium level of effort. Is it efficient? Discuss your result in each of the three above scenarios (in terms of different L).

Question 3

Exercise $8(a, b, c)$ in Debraj ray (Ch. 12. exercises).

Question 4

Consider Banerjee, Gerter and Ghatak's JPE 2002 article (BGG).

a) Discuss the potential implication of an increase in the security of tenure on productivity. Base your argument on the relations a) between security of tenure and threat of eviction and b) between security of tenure and investment incentive, and their consequences on productivity. (You do not have to introduce any model here, a precise descriptive argument will be sufficient).

b) BGG supports the theoretical conjectures comparing district level data from Bangladesh (control group) and West Bengal (treatment group). An implicit assumption here is that the treatment group would perform exactly the same way as the control group if there had been no reform intervention. Discuss possible reasons why this assumption could be violated. What evidence did they provide to support this assumption?
(You should particularly address the following two issues. First, Bangladesh (formerly East Pakistan) was separated from India thirty years before the land reform 'operation Barga' was introduced in West Bengal and so how different were their performances in these years. Second, can we think of the land reform as an endogenous event rather than an exogenous treatment?)