Development Economics
Problem Set #3 Due Week 7

1. Land reform.

   Consider an agrarian economy. Each farmer chooses effort $e \in [0,1]$ that determines the probability of high harvest. The harvest is either $y < 1$ (with probability e) and 0 (with probability $1-e$). The cost of effort is $e^2/2$.

   (a) Assume that the farmer owns the land. Find the level of effort and the farmer's payoff.

   (b) Assume that the farmer is a liquidity-constrained tenant who rents the rent from a landlord. Landlord and tenant find a contract; effort is not contractible; the harvest is contractible. The timing is as follows: the landlord makes a take-it-or-leave-it offer to the tenant; the tenant accepts or rejects (in which case the game ends). Find the optimal contract, the level of effort and the total welfare in equilibrium. Compare to (a).

   (c) Suppose the government introduces a tenancy reform and regulates the landlord-tenant contract. Find the level of effort and welfare; find the optimal regulation in terms of total welfare. Compare to (a) and (b).

   (d) Suppose the government can tax the landlords and subsidize the tenants. From the point of view of the total welfare, what is the optimal tax?

2. Marriage.

   Suppose that the higher mortality rate of girls is a consequence of the fact that their parents are not taking care of them on a day to day basis. The probability of death is lower when parents ensure that girl stays healthy. Consider a context where parents pay a dowry when their daughters get married. Suppose that women don't work: they raise children. The healthier they are, the healthier their children.

   (a) Suppose that a girl born in a village A always gets marries in a village B. Suppose that technical change in agriculture ("the green revolution") in a village raises the demand for healthy boys in that village (there is more work on the field).

i. What is the expected relationship between the technical change in village B and female child mortality in village A (controlling for technical change in village A)?

ii. Using economic intuition, what relationship would you expect between technical change in village A and female child mortality in village A (controlling for family income and technical change in village B)?

(b) Andy Foster and mark Rosenzweig computed a measure of technical change in a village and in the marriage market using Indian data. They regressed the difference in mortality rates (boys - girls) on technical change in the village, technical change in the marriage market, and other controls.

i. What should the expected signs of coefficients be in light of your intuition in (i) and (ii).

ii. Look at table 3 in (attached) "Missing Women, the Marriage Market and Economic Growth" Foster and Rosenzweig (1999). Interpret the results in light of your predictions. What are the alternative explanations for the results?