Development Economics

Credit issues – Rural financial institutions

Ray, Debraj. 1998. *Development Economics*, Chapter 14 (pp529-561).

- Objectives of today's lecture:
  To understand economic incentives of borrowers and lenders in the rural credit markets in developing countries.

- Characteristics of the rural credit markets in developing countries:
  1. It is difficult for a money lender to identify risks. In other words, a money lender cannot easily find out which potential borrowers are risky or which potential borrowers are relatively safe.
  2. Typically, no collateral is put upon a credit transaction – Farmers (borrowers) are too poor to have assets that work as collateral.
  3. Once a poor farmer defaults or refuses to repay a loan, the money lender cannot resort to a legal process because a legal system to honor and monitor credit transactions is absent or very weak in rural areas in a developing country.

  These characteristics of the rural financial markets in developing countries effectively prevent formal lenders (such as government and commercial banks and credit bureaus) from participating in the rural financial markets.

- *Involuntary default* and *voluntary* (or *strategic) default*:
  Involuntary default refers to a situation where a borrower does not have enough resources to repay the loan for which she is liable. *Voluntary default* or *strategic default* mentions a situation where a borrower refuses to repay the loan for which she is liable, although she has enough resources to repay the loan.

- Theoretical Model 1 (focusing on involuntary default and assuming away voluntary or strategic default):
  1. Claim: Rural borrowers have *limited liability*, thus rural borrowers are more likely to engage in risky projects than the social optimal.
  2. Assumptions:
     i. A farmer who is risk-neutral (for simplicity) has two projects.
     ii. Under Project A, the revenue is \$3,000 with the probability 0.5 and

$4,000 with the probability 0.5. Under Project B, the revenue is $5,000 with the probability 0.5 and $0 with the probability 0.5.

iii. Both projects need an initial investment of $2,500. The farmer is poor. He needs to borrow $2,500 to initiate one of the two projects.

iv. The local moneylender lends money to the farmer with interest rate 10% per annum. But he must borrow money from a government bank with interest rate 5% per annum to give the credit to the farmer. The government bank offers a loan to the moneylender because the moneylender provides some form of collateral to the government bank.

v. The local moneylender gets repaid the full amount with interest as long as the farmer has enough resources to pay back. The local moneylender gets repaid nothing if the farmer has no resources. In other words, we assume away the possibility of a voluntary (or strategic) default on the part of the farmer. Further, we assume away social sanctions the local money lender could impose on the farmer in the case of a loan default.

vi. The usual characteristics of the rural financial institutions (discussed above) apply.

3. Model implication:

   A farmer considers his own profit (not a social profit) when making a decision on a project. This would lead to a socially suboptimal outcome in a rural area in a developing country where a legal system to honor credit transactions is absent or weak and no collateral is provided upon credit transactions.

- Theoretical Model 2 (focusing on voluntary or strategic default and assuming away involuntary default):
  1. Claim: In the absence of a proper legal system and the lack of collateral, a credit transaction is more difficult to occur.
  2. Assumptions:
     i. A farmer has two projects.
     ii. One project: work on somebody else's farmland with remuneration A (fixed amount).
     iii. The other project: work on her own land. She needs to borrow L (variable) from a moneylender to buy farm inputs (seeds, fertilizer, pesticide, and the like). Her profit function before repaying the loan is given by $f(L)$ where $f'(L) > 0$ and $f''(L) < 0$, so her financial profit is given by

$f(L) - L(1+i)$ where i is the interest rate charged on the loan, if she repays the loan.

iv. We assume away the possibility of *involuntary default* due to crop failures (bad weather, insect pests, and the like), so $f(L) - L(1+i)$ is always positive as long as the farmer makes a rational decision about the amount of a loan to be borrowed.

v. The money lender is a monopoly in the rural financial market, so he can set i at his discretion.

vi. The usual characteristics of the rural financial institutions (discussed above) apply.

vii. (As usual, perfect information is assumed, so all pieces of information, such as the optimal level of L, the level of A, and the level of i, are in public.)

3. Additional assumptions for the infinite horizon of time:
    i. The credit transaction potentially continues forever in the future.
    ii. The moneylender offers the loan as long as the farmer repaid in the past. However, once the farmer defaults on the loan, the moneylender will never offer the loan in the future.
    iii. The discount factor for the farmer: $0 < \delta < 1$
4. Model implication:

    For credit transactions to occur, a society with both a proper legal system and collateral upon credit transactions needs the condition (*) only, while a society with neither a proper legal system nor collateral upon credit transactions needs the condition (**). This implies that credit transactions are more difficult to occur in a society where a proper legal system is absent and no collateral is provided upon credit transactions.

- Conclusions:

Without a proper legal system and collateral, credit transactions are more difficult to occur in the rural credit market in a developing country. We showed two reasons for this. First, the absence of a proper legal system and the lack of collateral creates a situation where a rural borrower incurs only limited liability, increasing default incidence. Second, a rural borrower can resort to voluntary (or strategic) defaults without being seriously penalized due to the absence of a proper legal system and the lack of collateral.