Rural credit market

Why is credit required?

- Risky production
- Seasonal production
- Incomplete insurance market

Credit is needed for efficient production as well as smoothing out consumption.

When farmers are poor, these motivations are stronger.

Type of credit transaction

- Formal money lenders (banks, microfinance institutions)
- Informal money lenders
- Social and family network
- Various contractual arrangements with landlord, large farms

Forms of government intervention

- Interest rate ceilings
- Targetting sectoral credits
- Subsidized credit programs for farmers, rural enterprisers

Why may government intervention be required?

On the positive side

- Credit is a factor of production. If market fails to ensure its optimal supply because of agency problems (moral hazard, informational asymmetry), production will not be at the efficient level
- Informal money lending are typically exploitative in nature

On the negative side

- Low interest rates reduces savings mobilization
- Demand for credit increases; it may lead to more rent seeking behavior

Can the market resolved the agency problems completely?

A model of moral hazard

A large number of competitive moneylenders.

In the benchmark case, assume action a can be observed.

Production:

R *with probability* $\pi(a)$

0 *with probability* $1-\pi(a)$

Lender charges i *and expects borrower to put effort* a

Lender's expected utility $i\pi(a)$

Borrower's expected utility $\pi(a)(R-i)-D(a)$

Competitive equilibrium with complete observation

$$\underset{i,a}{Max}\ \ \pi(a)(R-i)-D(a)$$

$$such\ \ that$$

$$(LPC)\ \ i\pi(a)\geq\rho$$

$$(BPC)\ \ \pi(a)(R-i)-D(a)\geq D(a)$$

First argue that LPC is binding.

Ignore BPC and solve the first order condition. If BPC is satisfied, at that solution, the solution of the first order condition is indeed the solution of the problem. Note that there may not be any feasible solution for this problem. Discuss the graph in class.

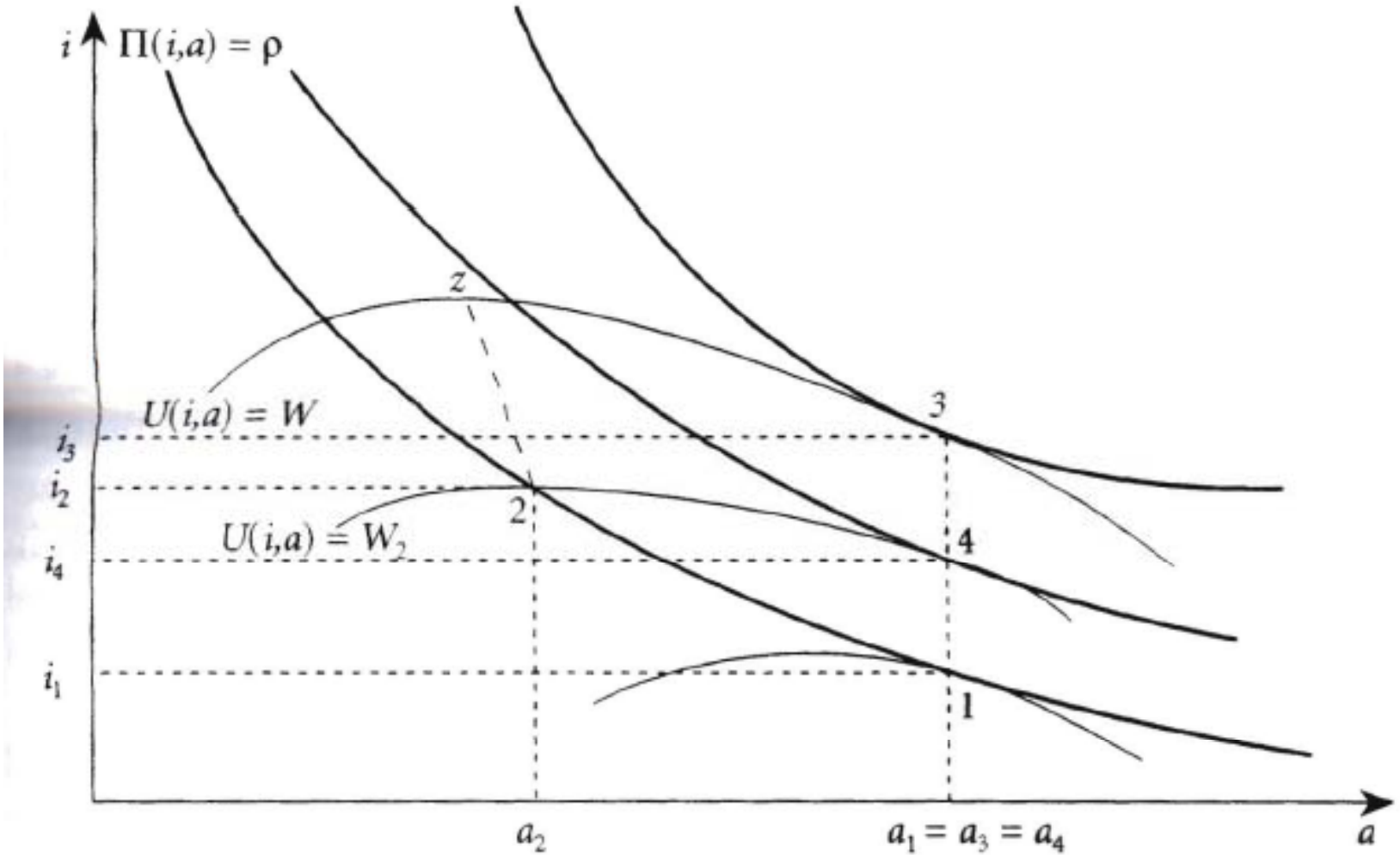

Figure 7.1

Competitive equilibrium with Moral hazard

$$\underset{i,a}{Max}\ \ \pi(a)(R-i)-D(a)$$

$$such\ \ that$$

$$(LPC)\ \ i\pi(a)\geq\rho$$

$$(BPC)\ \ \pi(a)(R-i)-D(a)\geq W$$

$$(BICC)\ \ a\in\arg\max_{a}\ \pi(a)(R-i)-D(a)$$

LPC is still binding, but first best solution fails to satisfy the BICC. Show that the level of effort will be reduced in equilibrium. (discussion in class)

Competitive equilibrium with Moral hazard and collateral

$$\underset{i,a}{Max}\ \ \pi(a)(R-i)-(1-\pi(a))C-D(a)$$

$$such\ \ that$$

$$(LPC)\ \ i\pi(a)+(1-\pi(a))C \geq \rho$$

$$(BPC)\ \ \pi(a)(R-i)-(1-\pi(a))C-D(a) \geq W$$

$$(BICC)\ \ a \in \arg\max_{a}\ \pi(a)(R-i)-(1-\pi(a))C-D(a)$$

Show that $C = i = \rho$ gives the first best. (discussion in class)

Equilibrium with a fully informed monopolist

We assume that the informed monopolist has bargaining power, and therefore, he can extract rent through contractual arrangement

$$\underset{i,a}{Max} \; i\pi(a)$$

$$such \;\; that$$

$$(LPC) \;\; i\pi(a) \geq \rho$$

$$(BPC) \;\; \pi(a)(R-i) - D(a) \geq W$$

Effort level is not distorted, but interest level does increase.

Competition between an informed monopolist and uninformed lenders

Effort level is first best.

Borrowers are on higher utility curve, but the interest factor is not the first best one. (discuss in class)

Conclusion

The typical moral hazard problem shows discrimination based on wealth (ability to provide collateral).

Presence of outside competition, even if from uninformed lenders, can be utility enhancing for the borrowers, and may lead to optimal level of production.