

Development Economics

Development Microeconomics

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Chapter 7

Rural credit markets [1]

■ Importance

- Smoothing consumption in an environment where production is risky and insurance markets are incomplete

■ Types of credit

- Zero interest loans between friends and relatives
- Formal sector loans backed by collateral
- Loans offered by professional moneylenders, some of which is backed by collateral
- Tied loans offered by traders to farmers
- Consumption loans offered by employers to long-term employees
- Group loans offered by microfinance institutions to groups of borrowers who lack collateral

Rural credit markets [2]

- Types of government intervention
 - Interest rate ceilings
 - Directed credit

- Rationale for intervention
 - Credit is an important input for agricultural production
 - It is “unfair” to not have credit available to farmers

- Consequences of intervention
 - Financial repression
 - » Reduction in supply of loanable funds
 - » Increase in demand for credit leading to rationing and hence rent seeking behaviour

Modelling rural credit market [1]

- Assumption
 - Both borrowers and lenders are risk neutral
- A farm yields 0 if harvest fails and $R > 1$ if there is a successful harvest
- The probability of success is $\pi(a)$ when a is effort
 - $\pi(a)$ is increasing and concave, $a \in [0, 1]$
- A farmer has a cost of supplying effort $\equiv D(a)$
 - $D(a)$ is strictly increasing and convex

Modelling rural credit market [2]

	Borrower	Lender
Success	$R - i - D(a)$	i
Failure	$- D(a)$	0

Implicit assumptions:

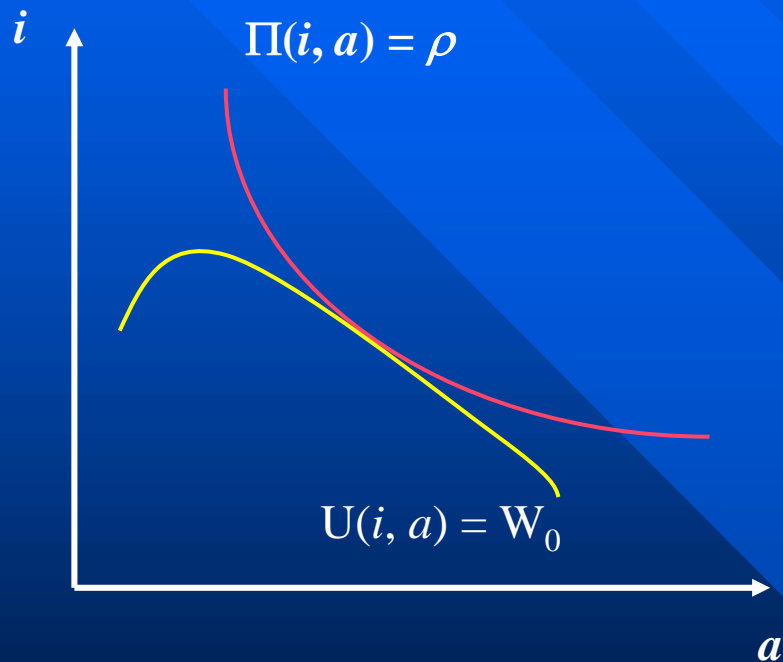
- No problem of enforcement in the event of success
- Limited liability in the event of failure

Why would borrowers repay?

- Fear of not getting credit in the future
- Fear of social sanctions

- Borrower's cost of borrowing
 - $1 \leq \rho < R$
- Reservation payoff of borrower
 - $0 \leq W < R$
 - Implication: $i < R$
- Expected returns:
 - Borrower:
 - » $\pi(a)(R - i) - D(a)$
 - Lender:
 - » $\pi(a)i$

Modelling rural credit market [3]



- Borrowers problem

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

$$\text{Sub } \pi(a)i \geq \rho$$

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

Choice variables: i and a

- In equilibrium

- Borrower gets at least reservation utility
- Lender recovers at least cost of funds
- There is no (i, a) combination that is more preferred

Introducing moral hazard

- The lender cannot observe the effort put into the production process by the borrower
- Incentive compatibility constraint
 - $\pi(a)(R - i) - D(a) \geq \pi(a')(R - i) - D(a')$
- In equilibrium, lower a chosen by borrower than in the perfect information case
- Collateral
 - Complications of risk aversion on the part of the borrower
 - Need for secondary market for collateral
 - Rapid rise of group lending when groups are typically homogeneous

The village moneylender

- Monopolist moneylender

Max $i\pi(a)$

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

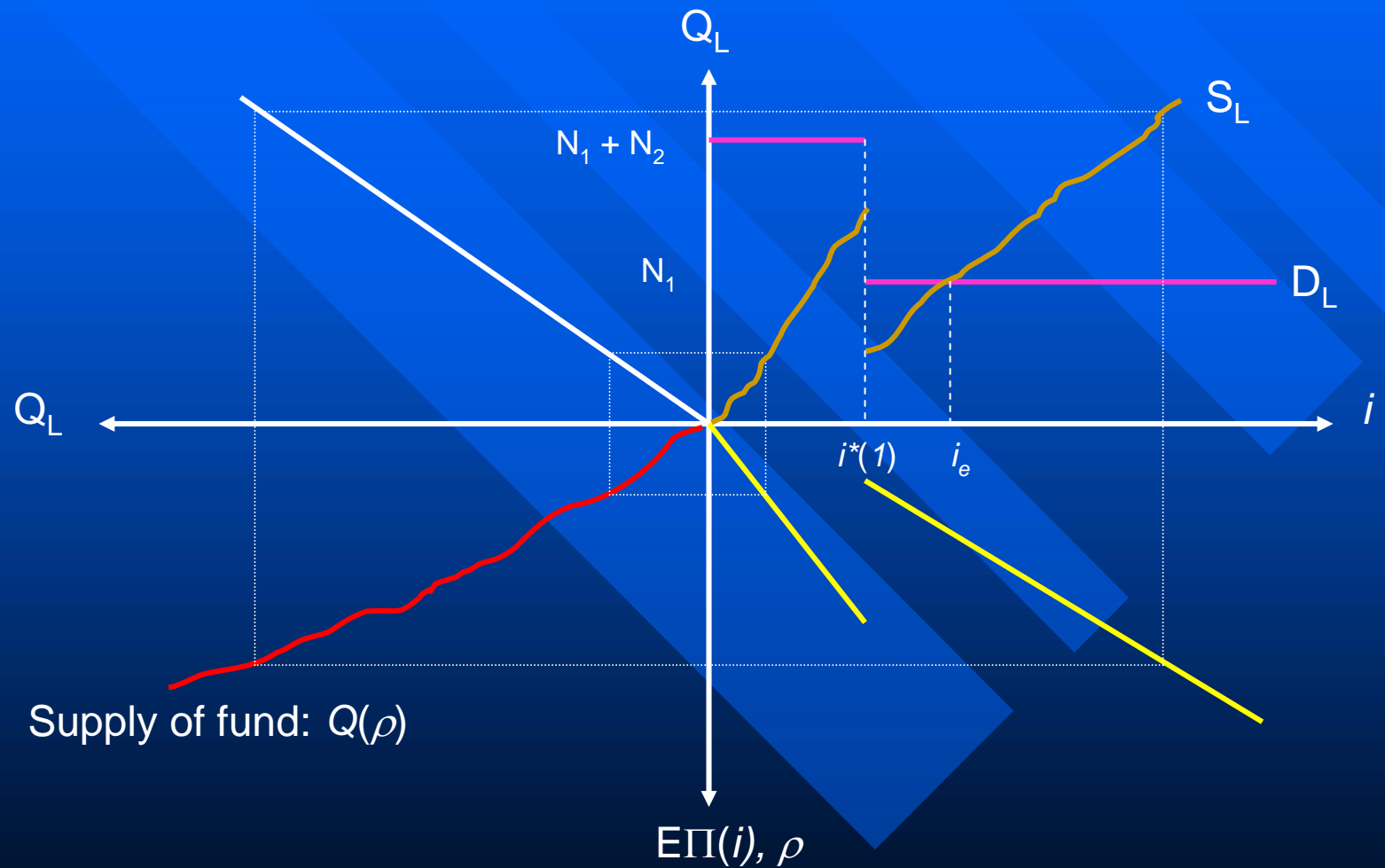
$i\pi(a) \geq \rho$

- Can observe the borrower's effort costlessly
- Drives the borrower down to his reservation utility

- Moneylender facing outside competition

- Moneylender continues to observe borrowers' efforts costlessly
- Outside competitor has a high cost of monitoring the borrowers
- Outside borrowing opportunities increase reservation payoff for the borrowers
- Moneylender has the same optimisation problem, but with a higher reservation utility in participation constraint

Introducing adverse selection [1]



Introducing adverse selection [2]

■ Moneylender

- Can enforce separating equilibrium
- In case of outside competition, two-tier credit market

■ Collateral

- Reduce the impact of adverse selection
- Increase income inequality if returns from farming is higher than returns on labour for landless labourers