Microfinance: Group Lending

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Microfinance

- Microcredit: collection of banking practices built around small loans, typically with no collateral
- Microfinance: also includes efforts to
  $\hookrightarrow$ stimulate savings
  $\hookrightarrow$ provide insurance facilities
  $\hookrightarrow$ distribute and market clients' output
- Programs exist worldwide
  $\hookrightarrow$ Bangladesh, Bolivia, Brazil and Indonesia
  $\hookrightarrow$ new programs in Mexico, China and India
  $\hookrightarrow$ inner-city Los Angeles, Toronto and Halifax

The Grameen Bank: The Beginnings of Microfinance

- Started by Mohammed Yunus (1976) with help from Bangladesh Bank
- Later helped by IFAD, Ford Foundation and several governments
- Basic group lending mechanism:
  $\hookrightarrow$ groups of 5 formed voluntarily
- Initial analysis attributed success to role of "joint liability"
- More recent analysis emphasizes other aspects
  $\hookrightarrow$ dynamic incentives
  $\hookrightarrow$ high frequency repayment schedule
  $\hookrightarrow$ 95% female borrowers

Group Lending in Theory

Grameen I ("classic")

- 2:2:1 staggering at 4-6 week intervals
- 1 loan cycle = a year
- joint liability: formal sanctions in case of default
- initial small loan, growing with each loan cycle as credit history builds

↪ eventually large enough for house repairs, or sending child to university

Mitigating Adverse Selection

- Can group lending make it possible to "implicitly" charge safe borrowers lower interest rates and keep them in the market?
- Joint liability $\Rightarrow$ incentive for "assortative matching"

Example: 2 member group

- One-period project requiring \$1 investment
- Bank's cost of \$1 loan $= k$
- Fraction q of borrowers are "safe": gross return $= \underline{y}$
- The remaining $1 - q$ are "risky":

$$\text{Gross return} = \begin{cases} \bar{y} & \text{with prob. } p \\ 0 & \text{with prob. } 1 - p \end{cases}$$

- Indentical expected return: $p\bar{y} = \underline{y}$
- Borrowers know each others types, but lender doesn't
- Assortative matching $\Rightarrow$ a fraction q of groups are (safe, safe)

- If both types of borrower are in the market, what is the break-even repayment, $\hat{R}_b$?

$\hookrightarrow$ assume that $\bar{y}$ is large enough that $\bar{y} > 2\hat{R}_b$

- Then the probability of repayment by a risky pair is

$$\begin{aligned} g &= 1-(1-p)^2 \\ &= 2p-p^2 > p \end{aligned}$$

since default occurs only if *both* members fail

$\Rightarrow$ break even repayment:

$$\hat{R}_b = \frac{k}{q+(1-q)g}$$

- This must be less than the minimum repayment without group lending

$$R_b = \frac{k}{q+(1-q)p}$$

Implications

- In this case risky borrowers can repay more often

$\hookrightarrow$ risk is transferred from bank to risky borrowers

$\hookrightarrow$ allows bank to lower interest rate and still break-even

$\hookrightarrow$ safe types may be lured back into the market

Enforcement and Peer Monitoring

Ex post moral hazard

- Recall our simple dynamic lending–borrowing game with no saving

$\hookrightarrow$ discount factor δ

$\hookrightarrow$ borrower's output is $F(L)$ where $F'(L) > 0$ and $F''(L) < 0$

$\hookrightarrow$ $i =$ net opportunity cost of funds to lender

- Now allow possibility of peer monitoring in group lending

$\Rightarrow$ each borrower must pay off debt of the other, if she reneges

$\hookrightarrow$ cost of monitoring $= k$

$\hookrightarrow$ probability of observing peer's output $= q$

$\hookrightarrow$ social sanction that can be applied to reneging borrower $= d$

Individual Contract (benchmark)

- Borrower's incentive constraint:

$$\frac{1}{1-\delta}\left[F(L)-R\right] \geq F(L)+\frac{\delta}{1-\delta}v \qquad \text{(IC)}$$

$\hookrightarrow$ lender's maximum feasible repayment:

$$R \leq R^{*} = \delta\left[F(L)-v\right]$$

- Suppose v is so high that $R^{*} < (1+i)L$, for all values of L

$\Rightarrow$ complete credit rationing

Group borrowing contract

- Repayment only if

$$\frac{1}{1-\delta}\left[F(L)-R\right] \geq F(L) - q\left[R+d\right] + \frac{\delta}{1-\delta}v \qquad \text{(IC)}$$

$\hookrightarrow$ lender's maximum feasible repayment:

$$R \leq R^{**} = \frac{\delta\left[F(L)-v\right] + (1-\delta)qd}{1-(1-\delta)q}$$

$\hookrightarrow$ shifts IC constraint up

- Peer will monitor as long as expected gain exceed the cost

$$qR \geq k$$

$\hookrightarrow$ introduces another constraint

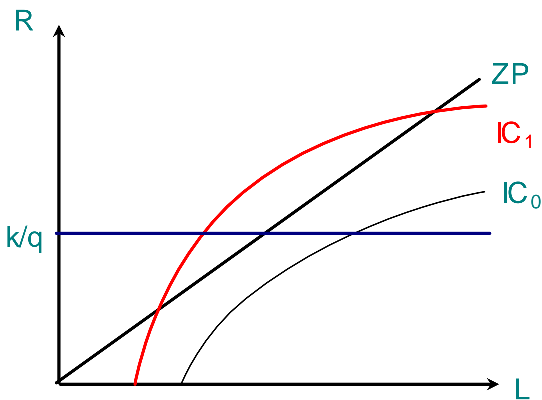

Figure: Enforcement Constraints under group lending

Implications

- Joint liability can make lending sustainable by inducing peer monitoring and overcoming the enforcement problem
- Relies heavily on use of "social sanctions"

$\hookrightarrow$ is this realistic ?

$\hookrightarrow$ is this a good thing ?

Group Lending in Practice: Mixed Results

- BRAC in Bangladesh (Montgomery, 1996)

(1) group lending works against most vulnerable individuals

(2) village-level group plays key role in repayment, not 5-member group

↪ new borrowers may effectively cover defaults of old

- Guatemala (Wydick, 1999)

↪ social ties have little impact on repayment rates

- Thailand (Ahlin and Townsend, 2003)

↪ in poorer regions repayment rises with village level social sanctions

↪ in wealthier regions default rates increase with extent of joint liability

↪ repayment rates decline with improvements in alternative borrowing sources

- FINCA in Peru (Karlan, 2003), Costa Rica (Wenner, 1995)

↪ "social cohesion" matters for repayment rates

↪ default rates higher in wealthier towns

- Calmeadow in Toronto and Halifax (Gomez and Santor, 2003)

↪ default less likely if members trust and/or know each other

- Philippines (Gine and Karlan, 2006)

↪ compare individual to group lending in controlled experiment

↪ no impact on repayment rates

Problems with Traditional Group Lending

Mixed results across countries reflects differences in trade-off between benefits and costs

- Groups may be difficult/costly for borrowers to set up
- Attending group meetings can be costly in some cases; beneficial in others
- Transfers risk from bank to borrowers
- Beyond a certain lending scale, individual contracts may be preferred
- Collusion amongst borrowers

- Social sanctions for default often seem too harsh and/or not credible

$\hookrightarrow$ what if the defaulter has trouble through no fault of her own?

$\hookrightarrow$ punishment imposes a "deadweight loss"

- Grameen II — individual loans

$\hookrightarrow$ "basic loan" (variable duration, seasonal varyiation in installments)

$\hookrightarrow$ then "flexible loan" (easier terms, but small) if borrower gets in trouble

$\hookrightarrow$ expulsion only if customer fails to repay this

Beyond Group Lending

- Emerging view: joint liability is often not the main key to success
- Shift toward individual lending for the "not so poor"
- Emphasis on dynamic incentives to induce repayment

$\hookrightarrow$ e.g. progressive lending

$\hookrightarrow$ a key element of Grameen bank lending