

**EEP151/ECON171**  
**Development Economics**

**Handout 31:**  
**Microcredit**

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# Administrative

## **Final Exam**

- **Meet at 9:00am on Monday December 11 in Mulford 159**
- **Exam will last 1.5 hours**
- **Dress code: No caps**
- **Calculator/Phones: Not allowed**
- **Put all backpacks in front of classroom then wait for proctor to indicate where you will sit (random)**
- **You should only have your ID+pen/pencil with you**

# Administrative

## **Final Exam Review**

- 1. Study handouts**
- 2. Read required readings (mentioned at beginning of handouts if any)**
- 3. Study homeworks, quizzes, and policy briefs**
- 4. Check your understanding of main concepts using the main concepts guide for final (available Saturday Dec 1)**
- 5. Practice your knowledge using the set of practice questions for final (available Sunday Dec 2)**
- 6. Email questions or concepts you want me to review during review session**
- 7. Come to Review Session on Wed Dec 11 from 10-11am in Mulford 159**

## Who Provides Credit?

- Institutional Lenders: government or commercial banks, credit bureaus. Often special banks set up to cater to rural populations (e.g. Thailand, India).
- Informal Lenders: moneylenders in various guises. These can be landowners lending to tenants, traders advancing loans to farmers for working capital, shopkeepers lending to customers.
- Informal sources seem to dominate for the poor. Duflo and Banerjee (2012) find that less than 5% of the poor have a loan from a bank in a data set covering 18 countries.
  - e.g in Udaipur (India) they find that two-thirds of poor households had a loan at survey time. 23% from a relative, 18% from a moneylender, 37% from a shopkeeper and only 6% from a formal source.

## Formal and Informal Lenders

- Formal lenders limited in information gathering ability for poor clients. Cannot precisely monitor how loans are used
- One response is for formal lenders to require collateral – but difficult to do for poor households both because they have limited collateral and because their collateral is not easily converted to cash.
  - e.g. farmers may have small plots of land that are difficult for bank to sell in the event of default.
- Informal lenders (moneylenders, shopkeepers, traders) typically have much *better information* on clients.
  - e.g. landlords typically have better information on tenant activity than a commercial bank. A trader (who advances loans for inputs to farmers and purchases the harvest) has better information on farmer's output.
- Informal lenders often can accept collateral commercial banks are unwilling to accept (e.g. land, labor).
- In many cases informal lenders may borrow from formal lenders (Geron (1989), Umali (1990)).

## Interest Rate Variation

- Wide observed variations in the interest rates paid. Yearly interest rates vary between 40% to 200% and the poor usually pay more than the rich.
  - Fruit-sellers on the streets of Chennai (India) borrow at a 5% interest rate *per day*. Implies that a \$5 loan if unpaid over a year turns into a debt of \$93.5 million! (Duflo and Banerjee (2012))
- Disparities in interest rates pose a puzzle: Why don't people exploit the arbitrage opportunities. Borrow at low interest rates and lend to borrowers at higher rates.
- This doesn't occur because of market segmentation (and the informational problems that cause it). A lender may be willing to lend to A at a given rate but not to B at that rate because he may not know enough about B.

## Response to High Interest Rates

- In response to high informal interest rates, many developing countries created credit programs with subsidized interest rates.
- However, programs didn't work very well as lending programs. Default rates were extremely high and lending was often based on non-economic reasons and money often went to the elite
- These programs were very popular during the 1960s-1980s but have been scaled back since.

## Why are Interest Rates so High? Lender's Risk Hypothesis

- the lender's risk hypothesis asserts that lenders earn *no* expected return on their funds over their opportunity cost. the high interest rates follow from the high default rates.
- Suppose a lender has  $L$  funds to lend out and let  $r$  be the opportunity cost of funds. suppose that there is a default probability  $(1 - p)$  on every dollar lent. Let  $i$  be the interest rate charged in equilibrium by the lender and assume that the lender's market is perfectly competitive so that expected profits are 0.
- The zero profit condition implies that

$$(p(1 + i)L + (1 - p)0) - (1 + r)L = 0$$

- Solving for the interest rate

$$i = \frac{1 + r}{p} - 1$$



## Lender's Risk

- Note that if there was no default risk ( $p = 1$ ), then the interest rate  $i$  would equal the opportunity cost of funds  $r$ . This follows from the formula:

$$i = \frac{1 + r}{p} - 1$$

- If  $p > 0$  we have that  $i > r$ . Suppose  $r = .10$  and that the default probability is .5. Then, according to the model  $i$  must equal 1.2 (the interest rate is 120%!)
- In wealthier countries default risk is low because of better enforcement of contracts and collateralization of loans. In their absence, threat of default remains high.
- However, actual rates of default for informal lenders are quite low ( $\approx 5\%$  according to Aleem (1993) in Pakistan).
- Ensuring these low default rates, however, require a lot of work (monitoring and screening costs) and this work is generally independent of the size of the loan.

# Microfinance

- As name suggests, makes small loans, mostly to the poor. Originally meant for investment, but often used for consumption as well.
- Microfinance institutions (MFI) overcome a market failure on capital markets: because of asymmetrical information in borrowing, commercial lenders require borrowers to provide collateral as a guarantee that the loan will be repaid
- For the poor, the implication is stark: they will not qualify for a loan for lack of ownership of collateralizable assets
- MFIs will offer mechanisms by which lending can happen with minimal risk to the lender in spite of lack of formal collateral – via social collateral.
- Two key innovations:
  - Group lending
  - Group liability

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- MFIs can be non-profit or commercial banks

|                                 | Grameen Bank<br>Bangladesh | Banco Sol<br>Bolivia | Compartamos<br>Mexico |
|---------------------------------|----------------------------|----------------------|-----------------------|
| Year established                | 1983                       | 1992                 | 1990                  |
| Membership                      | 6,950,000                  | 104,000              | 617,000               |
| Average loan balance (US\$)     | 69                         | 1571                 | 440                   |
| Percent female                  | 97                         | 46                   | 98                    |
| Legal status                    | Non-profit                 | Commercial bank      | Commercial bank       |
| Services offered                | Loans                      | Savings and loans    | Savings and loans     |
| Group lending contracts?        | Yes                        | Yes                  | Yes                   |
| Collateral required?            | No                         | No                   | No                    |
| Portfolio at risk > 30 days (%) | 1.9                        | 2.9                  | 1.1                   |
| Return on equity (%)            | 2.0                        | 22.8                 | 57.4                  |

Source: Based on Sengupta and Aubuchon, 2008

**Table 1. Characteristics of selected Microfinance Institutions**

# Microfinance Around the World

TABLE 1  
CHARACTERISTICS OF SELECTED LEADING MICROFINANCE PROGRAMS

|  | Grameen<br>Bank,<br>Bangladesh | Banco-<br>Sol,<br>Bolivia | Bank<br>Rakyat<br>Indonesia<br><i>Unit Desa</i>     | Badan<br>Kredit<br>Desa,<br>Indonesia | FINCA<br>Village<br>banks |
|--|--------------------------------|---------------------------|---|---------------------------------------|---------------------------|
| Membership                                   | 2.4 million                    | 81,503                    | 2 million<br>borrowers;<br>16 million<br>depositors | 765,586                               | 89,986                    |
| Average loan balance                         | \$134                          | \$909                     | \$1007  | \$71                                  | \$191                     |
| Typical loan term                            | 1 year                         | 4–12<br>months            | 3–24<br>months                                      | 3 months                              | 4 months                  |
| Percent female members                       | 95%                            | 61%                       | 23%   | —                                     | 95%                       |
| Mostly rural? Urban?                         | rural                          | urban                     | mostly<br>rural                                     | rural                                 | mostly<br>rural           |
| Group-lending contracts?                     | yes                            | yes                       | no  | no                                    | no                        |
| Collateral required?                         | no                             | no                        | yes   | no                                    | no                        |
| Voluntary savings<br>emphasized?             | no                             | yes                       | yes   | no                                    | yes                       |
| Progressive lending?                         | yes                            | yes                       | yes   | yes                                   | yes                       |
| Regular repayment<br>schedules               | weekly                         | flexible                  | flexible  | flexible                              | weekly                    |
| Target clients for lending                   | poor                           | largely<br>non-poor       | non-poor  | poor                                  | poor                      |
| Currently financially<br>sustainable?        | no                             | yes                       | yes   | yes                                   | no                        |
| Nominal interest rate on<br>loans (per year) | 20%                            | 47.5–<br>50.5%            | 32–43%  | 55%                                   | 36–48%                    |

# Microfinance Around the World

- One of the most widespread movements in the developing world in past 2 decades.
- Has brought financial access to poor people throughout the world.
- Has shown that despite high transaction costs and no collateral, it is possible to lend profitably to low income households.
- Programs typically have low default rates.
- Potentially empowering for women.



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- Loans are gradually increased to reward good repayment behavior: "dynamic incentives"
- Frequent installments (partial repayments of the loan) are required, typically on a weekly or fortnightly basis

# MF Features

- Self-selection by group members
- Individual loans, with joint liability providing social collateral
- Peer monitoring
- Social capital and inter-linkages among members for enforcement
- Frequent installments as a disciplinary device for self-control
- Mutual insurance

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- Moral hazard problem:
  - Group members have a strong incentive to monitor and help each others' projects using local information and direct assistance, which is referred to as "peer monitoring"

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- Insurance problem: mutually insure against idiosyncratic risks

## Microfinance: Drawbacks and Caveats

### Disadvantages of microlending:

- Credit remains expensive: 22-30% (though money-lenders typically charge two to four times as much)
- MFI repayment schedules are typically very inflexible. Clients must repay on fixed schedule without fail
- This could result in clients taking on projects that generate quick returns as opposed to longer-term projects.
- More generally, the microcredit model with emphasis on regular repayment and collective responsibility may be unsuited for pure entrepreneurship projects
- The whole group could potentially default if those who would not have defaulted individually cannot repay for defaulter
- Individuals who don't enjoy being in groups less likely to join

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- Rigorous impact evaluation of benefits for clients is essential
  - Some MFIs argue no such evaluation is needed. Why?

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  - Main product is standard, Grameen inspired, group lending based individual loan:
    - Eligible women: age 18-55, able bodied, lived at least 3 years in the slum
    - Groups of 10 women, joint liability
    - Starting loan Rs 10,000 (roughly 200 dollars)
    - Weekly repayment over a year:  $(\text{principal} + \text{interest})/52$
    - Interest Rates varied over the period, but on average 24% per year (much cheaper than other borrowing sources)

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- Design:
  - In 2005, half of 104 slums in Hyderabad, India were randomly selected for opening of a branch of a microfinance institution
  - Operations in other slums start after two years

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  - Other MFIs were already present or about to enter those slums (implications for RCT?)
  - Baseline survey of 20 households per slum; endline of up to 100 households per slum, at least two years after Spandana started operations (why the increase in sample size at endline?)

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## Spandana Evaluation: Baseline

- Findings from the baseline:
  - The average family is a family of 5, with monthly expenditure of Rs 5,000
  - Poor, but not ultra poor: Only 6% of these households live under a dollar a day per member, but 47% live under 2 dollars a day
  - 31% of the households have a business, many have more than one
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  - 31% of the households have a business, many have more than one
  - Most of these businesses are:
    - Not specialized (25% stores or fruit-sellers)
    - Small: only 10% have any employee (other than owner). None have more than three
    - Sales: Rs 13,000 per month
    - Very few assets: 20% have no assets. Most common asset: table, chair, scale

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    - Most households either do not have a project with a rate of return of at least 24%, the APR on a Spandana loan
    - Households may prefer to borrow from friends, relatives, or moneylenders due to the greater flexibility those sources provide, despite costs such as higher interest (from moneylenders) or embarrassment (when borrowing from friends or relatives) (Collins, Morduch, Rutherford, and Ruthven 2009)

# Results

- What should we expect?

Source: Duflo (2009), MIT OpenCourseWare, <http://ocw.mit.edu>



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  - Main reason to take up a loan (self-reported):
    - Start a new business (30%)
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  - Non-economic outcomes: education, health, women's power

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- Present ITT results only.

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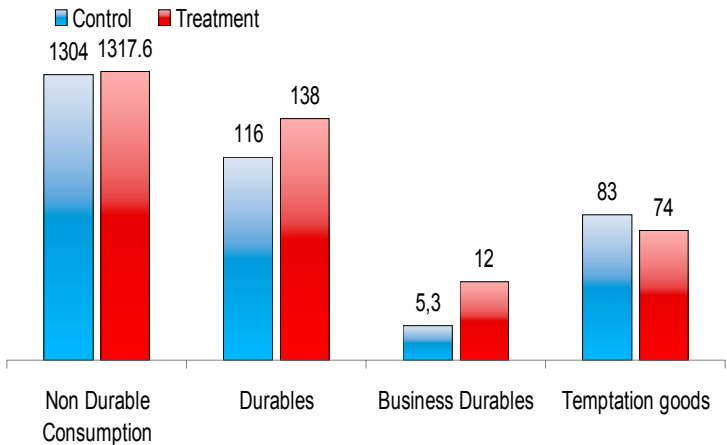
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  - Business profit does not increase for the vast majority of businesses, although there are significant increases in the upper tail

# Do Investment, Income, Consumption Change?

- Investment
  - The effect on new business creation is not significant
  - However, households with existing businesses invested more in them
- Income and Consumption
  - Monthly consumption does not increase for those in the treatment slums, either in the short run or in the longer run
  - Business profit does not increase for the vast majority of businesses, although there are significant increases in the upper tail
  - However, durable consumption increased, while consumption of “temptation” goods (cigarettes, alcohol, tea and snacks) declined



Source: Duflo (2009), MIT OpenCourseWare, <http://ocw.mit.edu>

# Understanding the Results

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- Is there a broader change in household behavior? No impact on"
  - No impact on boys'/girls' education
  - No impact on boys'/girls'
  - No impact on health expenditures or education expenditures
  - No impact on women's decision making power

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    - The average business run by this target group is tiny (almost none of them have an employee), not particularly profitable, and difficult to expand, even in a high-growth context, given the skill sets of the entrepreneurs and their life situations
    - Consistent with theory, the marginal businesses that get created thanks to microcredit are probably even less profitable and dynamic:

The average new business in a microcredit treatment area less likely to have an employee than the new business in the control areas

The median new business is less profitable in treatment versus control areas

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- Microfinance is a great innovation, it should be supported and we should continue to develop new projects to improve financial access
- However, it cannot replace old-fashioned ways to help the poor

# Course Wrap Up

- Questions of economic growth and development are among the most important for human welfare
- Macro and micro issues in economic development markets
  - Measurement, Economic growth, Education
  - Trade, Migration, Political Economy, Credit
- Missing markets, incomplete markets:
  - Knowledge, risk, discount rates, spillovers/externalities, credit markets, etc
- Once these failures are identified, it can provide a structure for policy interventions to correct them
- But government failure can be as big (or bigger) a problem than market failures
- Development requires both good policies and good implementation
- No easy answers – but hope the course exposed you to new issues and made you think more deeply about them