The (not so simple) economics of lending to the poor

14.73 LECTURE 17
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Introduction: Microcredit in the eye of the storm

- After some fantastic years, where microcredit was considered to be the best way to solve poverty, it is now in the eye of the storm: attacked in India, in Bangladesh, in Latin America…

- We will discuss press clippings and documentaries that make both sides of the case in the next lectures, but beforehand, to shed light on this debate, it is important to understand the nature of lending to the poor

Some facts about credit markets in developing countries (1)

- Most of the poor do not have access to any form of formal credit (excluding microcredit, which reaches about 200 million people worldwide)

- Formal lending programs have typically been failures, with high default rate, and have some times become political giveaway

Credit of rural household living on less than a dollar a day

	Percent with a loan	Fraction of loan from a bank
Cote d'ivoire	30.5	5.7
India (udaipur)	6	6
Indonesia	11.6	25.3
Mexico	18.5	17.4
Pakistan	93	1.5
Panama	2.8	--
Peru	12.3	0
Timor Leste	10.9	0

# Some facts about credit markets in developing countries (1)

- Most of the poor do not have access to any form of formal credit (excluding microcredit, which reaches about 200 million people worldwide)

- Government sponsored formal lending programs have typically been failures, with high default rate, and have some times become political giveaway
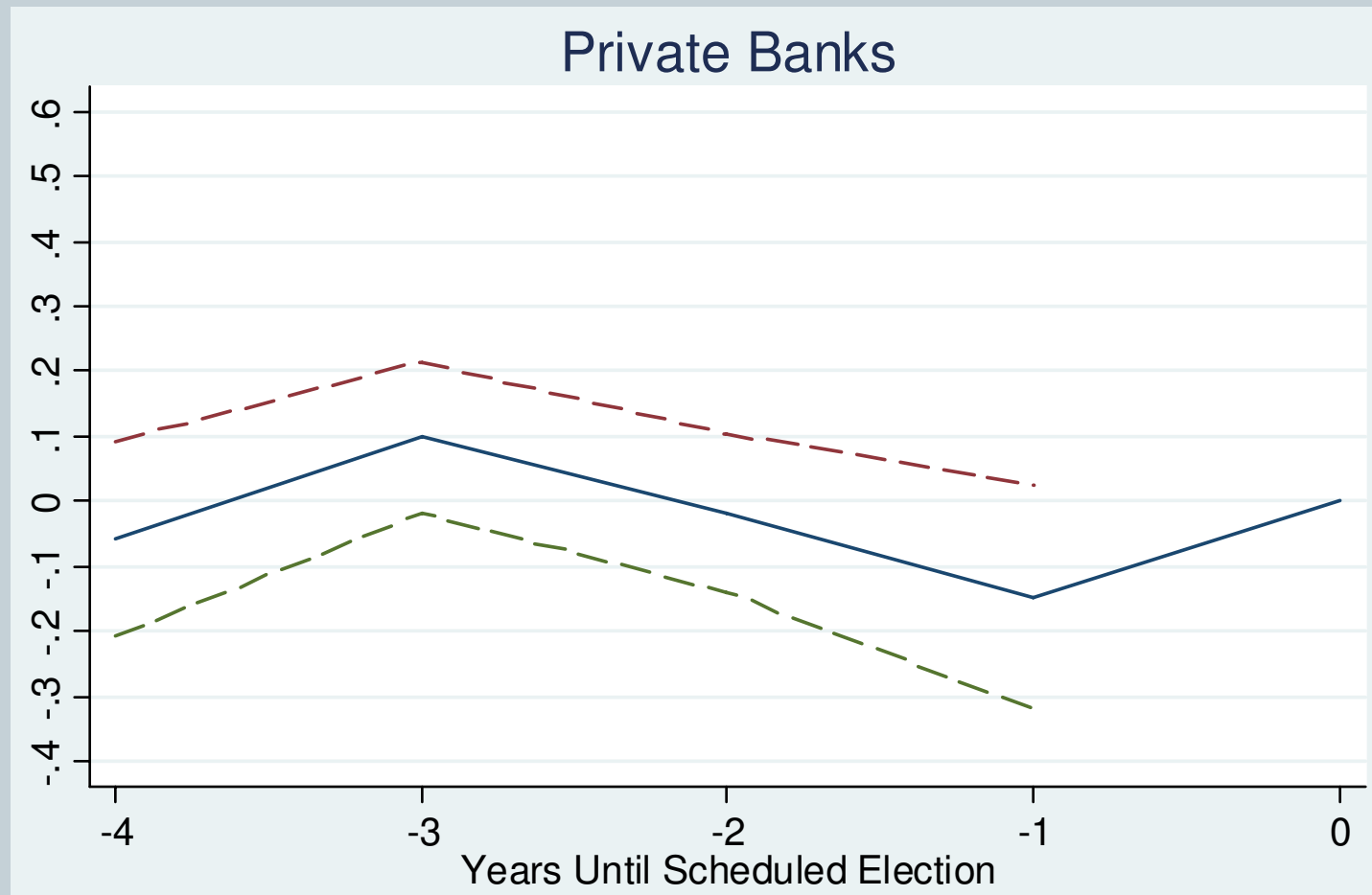
Shawn Cole: Lending cycles

Figure 2: Cycles in Level of Credit, Swing District

Public Banks
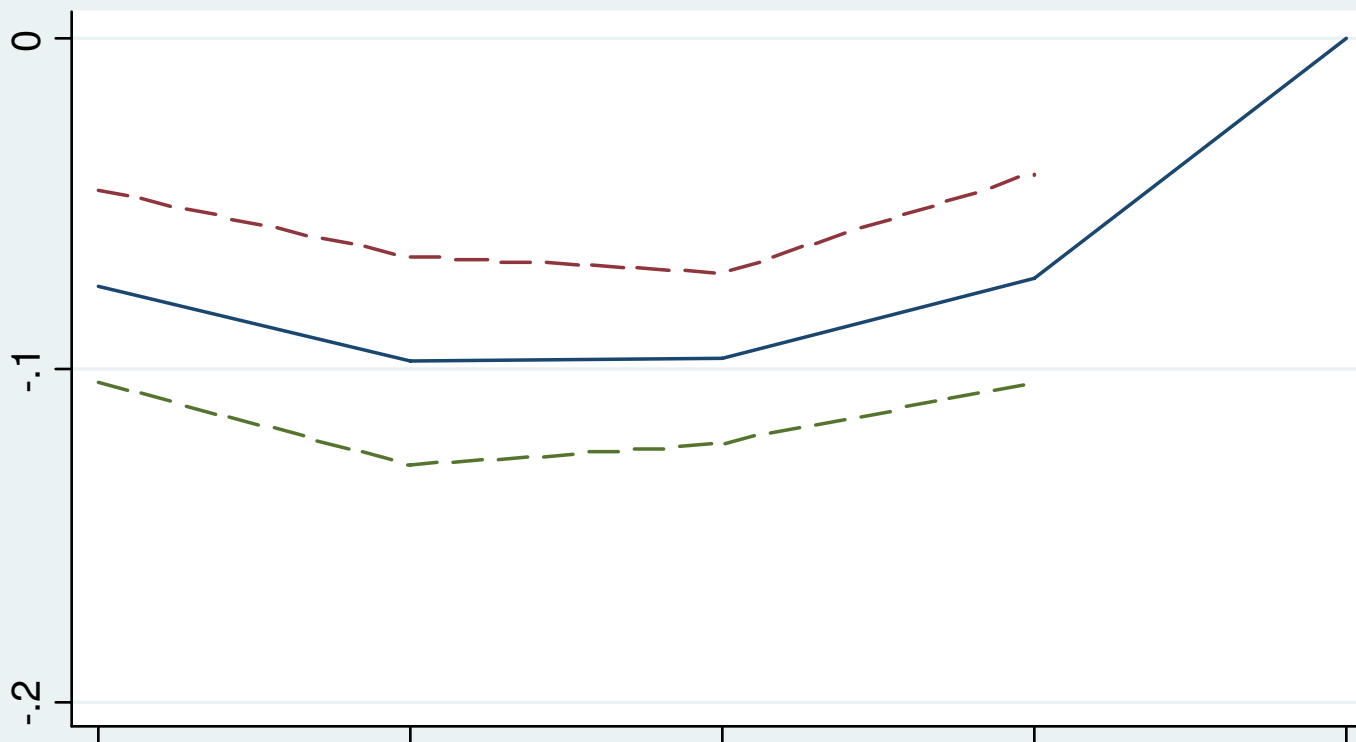
No lending cycle in public banks

Private Banks

Some facts (2)

- In the informal market, lending rates are much higher than deposit rates
  - Yearly interest rate are in the 40%-200% range
  - Or some times much more: Fruit vendor in chennai pay 5% per day!
  - Study of money lenders in Pakistan (Aleem) found that average interest rate was 78.5% annually, and the average cost of capital was 32.5%

Some facts (3)

- **Extreme variability of interest rates even within the same economy (village or town)**

  - Same study by Aleem on money lender in Pakistan finds that the standard deviation of interest rate was 38.3%: that means that interest rates of 2% and 150% are in the 95% confidence interval!

Some facts (4)

- **The rich have larger loans, and pay lower rates**
  - Summary report of informal credit in India shows that in the rural sample, the landless pay interest rates varying between 28% and 125%, and the cultivators pay between 21% and 40%
  - Credit limit is often explicitly set to be proportional to the borrower net worth.

Some facts (5)

- **Those who borrow more typically pay lower interest rates**
  - In Udaipur: The average interest rate from an informal source drops by 0.40 percent per month for each additional hectare of land owned by the person taking out the loan.

Some facts (6)

- The rates of default are quite low. People often borrow for investment, not because they are desperate

Facts

- Poor cannot borrow from formal lenders
- Interest rates are high
- Interest rates are variables

- Rich borrow more
- People who borrow more pay lower interest rates
- Default rates are low

Can we explain these facts?

- A basic model of the credit market would posit the following
- Suppose that there is a d% risk of default on any loan
- And $R = 1+r$ is the gross interest rate
- And banks make no profit
- Then $(1-d)R$ is paid to depositors
- The expected marginal product of capital is equated to $(1-d)R$
- Can this explain the facts?

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A more sophisticated model

- Imagine the bank lends to an entrepreneur, which has a business which will lead $F(k)$ if k units of capital are invested

- A borrower who has wealth w will need to borrow $k-w$

- At the end of the period, he needs to reimburse $(k-w)R$

Add enforcement cost

- However suppose that by spending cost h on the entire sum borrowed, he can escape without paying.
- Finally, assume that the cost of capital (what must be paid to depositors is D
- The borrower face a choice after he gets his profit:
  - Repay: he gets $F(k)-R(k-w)$
  - Escape: he gets $F(k)-hK$

Credit constraints

- Lender will make sure that, at the end of the day, the borrower will chose to repay: set k such that

  $$F(k)-R\,(k-w)>F(k)-hK$$

Or: $k/w=r/(r-h)$

- Predictions:

  - Borrowers will be rationed
  - Richer people can borrow more
  - However: a number of facts are still not matched!

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What is there a fixed fee?

- The bank may need to pay a fix cost to make sure the borrower does not flee.
- Why is that reasonable to believe?
- Aleem: study of Money-lenders in Pakistan, found that a lender must spend X days just to screen the borrower, and then must continue checking what they are doing with the money.

Two constraints

- Now, the lender must fix an interest rate that is high enough to cover his cost of paying the fixed fee c, so we will have:

$$R(k-w)=D(k-w)+c$$

- But remember that the lender must still want to repay, so we must still have:

$$R(k-w)=hk$$

- Combining these two equations, we get:

$$D(k-w)+c=hk$$

Credit constrainst

- How much will the lender be willing to lend?

$$K=(Dw-c)/(D-h)$$

- Comments:
  - What happens if $Dw<c$?
  - How does K vary with w
  - How does K vary with H

The multiplier effect

- How does the lender set the interest rate
- Replace k in the previous interest rate equation:

$$R=D+c/(k-w)$$

You get : $R=D+c(D-h)/(hw-c)$

- Multiplier property: R increases more than proportionally with the cost paid to depositor

Intuition for the multiplier effect

- When the cost of fund goes up, the interest rate must go up to cover the cost
- But this gives the borrower more reason to try and escape
- So the interest must go up even more to cover the cost of monitoring
- The upward pressure feeds on itself
- Or the lender decides not to lend at all.

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Why are formal institutions absent

- Formal institutions are far removed from the villagers: they have a high fixed cost, perhaps a high variable cost as well
- They may also face an interest rate ceiling
- They would be unable to lend to the poor (unless they accept that this is a subsidy program)

Why are money lenders thriving

- Money lenders are close to the people (in the same village)
- They may also be able to impose large penalty if the person tries to flee with the money: paradoxically this will lower the interest rates
- They can lend to the poor:
  - But their cost of fund will be high
  - So the interest rates they charge will be high

Are money lenders just abusing their monopoly position?

- A possible alternative explanation for the high rates charged by money lenders is that they are the only game in town: they can charge high rates, since the poor have no alternative
- But in fact, money lenders do not seem to be a monopoly: there are usually several lenders in a village
- Yet, people do not frequently change money lender

Ex-ante competition, ex-post lock in

- Ex-ante, you may have many lender to chose from.
- But once one lender has paid the fixed fee of getting to know you, it would be costlier to switch
- Plus, knowing that it would be costly to switch, the other money lenders would be suspicious (adverse selection)
- So you may not be able to switch: your own money lender can then charge you monopoly pricing (which will further drive the interest up)

Conclusion

- These inherent difficulties in the credit market explain why the poor are largely shut off, and when they can borrow, must borrow at very high rate

- The genius of microcredit was to introduce an institutional form that helped mitigating those problems.