Finance and Development 1

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Microfinance: holy grail of development finance?

Outline

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Credit system

Efficiency

Capital and production means should belong to those most able to use them, not to the richest. A bank is interested in getting its money back and thus should lend to efficient poor people, however it seems poor people are excluded from the formal credit market. Why? Are banks irrational?

Imperfect information

- Banks have little knowledge over their potential customers and gathering more information is expensive
- Monitoring loans usage is complex and costly

There might be divergence between banks and lenders desire

A simple example I

Two Projects

- **Project A**
  - Initial cost: 10 000
  - Payoff: 25 000
  - Expectation of success: 50%
  - Return rate: $\frac{0.5 \cdot 25000 - 10000}{10000} = 25\%$
- **Project B**
  - Initial cost: 10 000
  - Payoff: 15 000
  - Expectation of success: 100%
  - Return rate: $\frac{15000 - 10000}{10000} = 50\%$

A simple example II

Bank's point of view (10% interests)

- **Project A**
  - Limited liability assumption (bankruptcy if failure)
  - Expected profits: $0.5 \cdot 0.1 \cdot 10000 + 0.5 \cdot 0 = 500$
- **Project B**
  - Expected profits: $0.1 \cdot 10000 = 1000$

Thus Banks prefer project **B**

Investor's point of view (10% interests)

- **Project A**
  - Expected profits: $0.5 \cdot (25000 - 1100) + 0.5 \cdot 0 = 7000$
- **Project B**
  - Expected profits: $15000 - 11000 = 4000$

Thus Investors prefer project **A**

A simple example III

Conclusion

Limited liability implies investor prefer a less profitable project (25% vs. 50%) and more risky (50% success vs. 100%): Typical case of *moral hazard*.

Moral Hazard

How to manage Moral Hazard

- **Monitoring**: costly and complex
- **Collateral**: only rich people have collaterals valuable for banks

Outline

The informal credit market

Most developing countries have a informal credit market

- Local moneylenders knows better borrowers: this alleviate *Assymetric informations*
- Local moneylenders have more use of poor people collateral

But the interest rate is *much higher* in the informal credit market than in the formal one (say 10% vs. 120%)

Interest rate computation

Landlord

- **Formal** credit market: deposits his money and gets an interest rate on it: r
- **Informal** credit market: get an interest rate: i

Interest rate

- **Formal**: income after a year: $(1 + r) \cdot L$
- **Informal**: income
  - If no default: $(1 + i) \cdot L$
  - if default (either voluntary or not): 0
- Expected income: $p \cdot (1 + i) \cdot L + (1 - p) \cdot 0$

Thus in order to be at par with formal market $i = \frac{1+r}{p} - 1$

Back to our simple example I

Two Projects

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Back to our simple example II

Informal market interest rate: $i = \frac{1+r}{p} - 1$ (10% interests in formal)

- **Project A**: $i = \frac{1+0.1}{0.5} - 1 = 120\%$
- **Project B**: $i = \frac{1+0.1}{1} - 1 = 10\%$

Conclusion

Everything depends on the probability of success. Hardly measurable, thus informal interest rates are prohibitive.

Outline

Introduction

Empirical analysis

26 villages in West Bengal, in India were surveyed by the author during 1970. The conclusion of the paper are thus not global but nonetheless allow for an interesting thinking and illustrates the nexus between technology, production and finance.

Main features of Semi-Feudal Agriculture I

Sharecropping

- *kishans*: no land, work on other land and share net production
- *Agricultural workers*: work for a wage

Perpetual indebtedness

- A significant share of the *kishan* legal share is taken away as interest debt repayments
- Need to borrow to survive

Landowner as lender

- *jotedar* combine landowner and lender function
- Strong ties between *kishan* and *jotedar*

Main features of Semi-Feudal Agriculture II

Inaccessibility to the formal market

- *kishan* are not credit-worthy
- *kishan* cannot sell its product to the formal market
- price fluctuation against him: sell when everyone sells and buys when everyone buys

The model I

Variables

- x_t: net harvest per capita
- c_t: consumption per capita
- y_t: available balance
- w_t: income of the *kishan*
- z_t: income of the *jotedar*
- i: interest rate
- α legal share of the *kishan*
- β marginal propensity to consume out of balance

The model II

Equations

1. $w_t = \alpha x_t - i(c_{t-1} - y_{t-1}),\ c_{t-1} > y_{t-1}$
2. $y_t = \alpha x_t - (1+i)(c_{t-1} - y_{t-1}),\ c_{t-1} > y_{t-1}$
3. 1+2: $w_t = c_{t-1} + y_t - y_{t-1}$
4. $z_t = x_t - w_t$
5. 1+4: $z_t = (1-\alpha)x_t + i(c_{t-1} - y_{t-1})$
6. 3+4: $z_t = x_t - c_{t-1} - y_t + y_{t-1}$

Stationary State

1. $(\alpha\overline{x} - \overline{c}) = i(\overline{c} - \overline{y}),\ \overline{c} > \overline{y}$
2. $\overline{y} = \frac{1+i}{i}\overline{c} - \frac{\alpha}{i}\overline{x},\ \overline{c} > \overline{y}$
3. $\overline{w} = \overline{c}$
4. $\overline{z} = \overline{x} - \overline{c}$

The model III

Stationary State

1. $(\alpha\overline{x} - \overline{c}) = i(\overline{c} - \overline{y})$, $\overline{c} > \overline{y}$
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3. $\overline{w} = \overline{c}$
4. $\overline{z} = \overline{x} - \overline{c}$

Numerical example

- $\alpha = 0.4$
- $i = 1$
- If $\overline{x} = 100$, then $\overline{c} = 28$, $\overline{y} = 16$, $\overline{w} = 28$ and $\overline{z} = 72$
- i.e. the *kishan* takes every period a loan of 12 units and repays 24 at the end. His net income is thus 40-12=28 but his available balance is 40-24=16. The *jotedar* has an income of 72: 60 out of the sharecropping and 12 out of usury.

The model IV

Technological change

- New technology: increases output $\overline{x} + \Delta x$
- New consumption: $c_t = \overline{c} + \beta(y_t - \overline{y})$, $y_t > \overline{y}$ and $1 > \beta > 0$

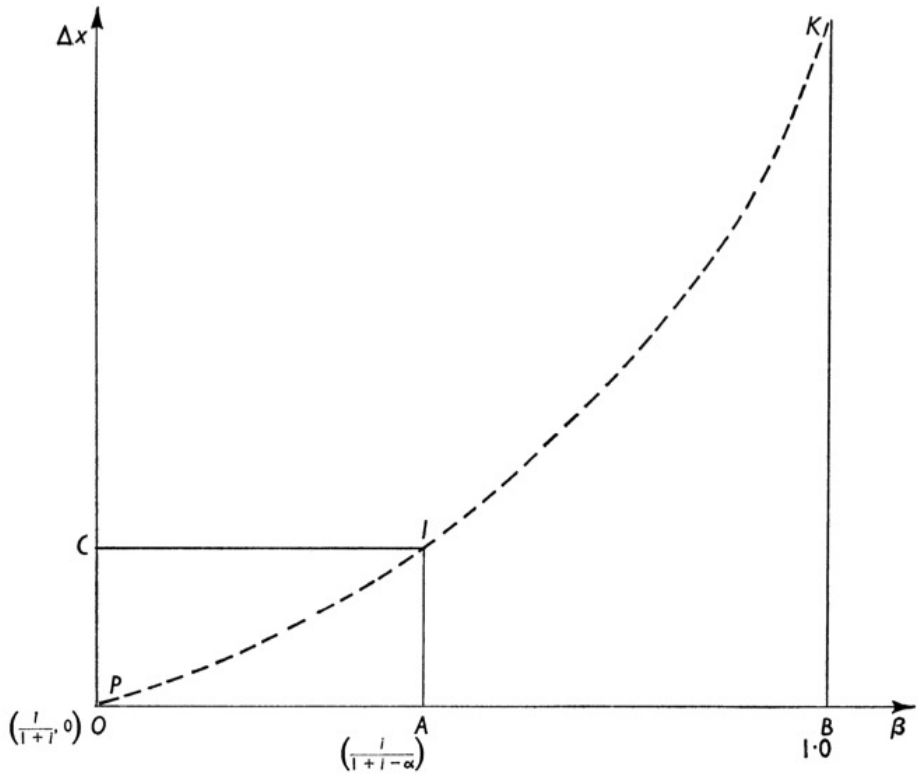

FIG. 1

Conclusion

Technological change can hurt *jetodar* income

Indeed, the technological change might free the *kishan* from perpetual indebtedness, which is a significant share of the *jetodar* income. Thus if, the loss of income out of usury is not matched by an increase of income out of sharecropping, he will not finance the technological change. Which might explain why rural india is still very much underdeveloped.

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The idea I

Mohammed Yunus

If we are looking for one single action which will enable the poor to overcome their poverty, I would focus on credit

Poor people are excluded from formal market due to low or no collateral and due to high monitoring costs and they have to pay prohibitive interest rates in the informal market.

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

Reduce the cost of monitoring while not asking for any collateral, by using *group lending*. In this case if any of the member of the group defaults, the other member will not have access to the credit they have asked. There is thus *peer monitoring* rather than *institutional monitoring*.

The idea II

Some numbers

- interest rate around 20%
- 90% of borrowers are women
- average repayment rate: 97%
- amount is around $100

Outline

Sustainable vs. Subsidzed microcredit

High costs...

Peer monitoring allows to alleviate an important monitoring costs for the bank, however there are other important costs related to microcredit.

- Need to "educate" borrowers: "the Grameen Bank requires borrowers to observe certain codes of conduct: they make commitments to have small families, boil their water, not make or receive dowry payments, and so on" (Ray 1998)
- Because loans are small, fixed costs (transaction and administrative) are proportionally high per loan

...leads to sustainable or subsidized micro-credit

- **sustainable** microcredit indicates the case of banks that charge a high interest rate (real interest rates above 45%) on microcredit in order to cope with these high costs.
- **subsidized** microcredit indicates the case of banks that are subsidized by the government and hence charge a lower interest rate (12 to 15%)

The debate I

Sustainable view

Why would you make taxpayer worse off when poor people are actually able to pay those high interest rates (which are anyway lower than the informal market)?

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Sustainable view

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Subsidized view

True, some poor people can pay the high interest rates but there are also other poor people that cannot.

The debate II

Sustainable view

Low interest rates on loans implies low interest rates on deposits

The debate II

Sustainable view

Low interest rates on loans implies low interest rates on deposits

Subsidized view

This ends up in a debate of *number* vs *distribution*. With sustainable microcredit: you improve the situation of those who are less worse off while with subsidized microcredit you target the worst of the worse off.

The debate III

Sustainable view

Sustainable program are superior to subsidized program because they are sustainable

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Subsidized view

You need to compare costs and benefits, not only costs

The debate IV

Sustainable view

Subsidized program cannot survive in the long term: "microenterprise financial intermediaries have learned that they cannot depend on governments and donors as reliable, long-term sources of subsidized funding"

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Subsidized view

Why would subsidies dry up? If the program achieves efficiency while limiting costs, there is no reason why it would be the case

The debate V

Sustainable view

Subisidized credit most often ends up in the hands of non-poor households due to political reasons

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Sustainable view

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Subsidized view

Lesson drawn from experience: need to contain excessive subsidies not all subsidies