

An Introduction to Microcredit: Why money is flowing from the rich to the poor

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Abstract

The paper examines why capital didn't flow from the rich to the poor. The problems identified are categorized in three broad categories: lack of complementary human capital information asymmetries and transaction costs for small loan sizes. It explains how moneylenders solve the information asymmetry problems. It then shows that recently, microcredit has taken the world by storm. This development has considerably impacted economies at the grass root levels. The paper therefore examines how Microfinance institutions have overcome the obstacles to mobility of capital, notably those relating to information asymmetry and transaction costs, but also, in some cases, those related to complementary human capital. The reduction in information asymmetry by Microfinance institutions is not done in the same way as by moneylenders. Finally, the paper explains how these microfinance institutions obtain financing to understand why their costs are lower than those of moneylenders.

Keywords: Microfinance, poverty, moneylender, information asymmetry, adverse selection, moral hazard, transaction costs

A typical book or webpage on Microcredit will start with an anecdote of how Ram Kumar, or some such person, took a ten dollar loan and made it rich, or at least grew out of poverty. Having thus established the possibility of solving the problem of poverty, the text book will go on to examine microcredit. In doing so, it would have lost the interest of researchers, who disdain anecdotes as suffering from small sample size and survivor bias, at the very least. However, when anecdotes multiply, for one to a hundred to a thousand to a million, the anecdotes may represent the population of a niche. Researchers are then willing to examine why micro-credit may be important. One problem remains: if these anecdotes are all true, why didn't capital flow from the rich to the poor before micro-credit came along?

The paper examines why capital didn't flow from the rich to the poor. The problems identified are categorized in three broad categories: lack of complementary human capital information asymmetries and transaction costs for small loan sizes. It explains how moneylenders solve the information asymmetry problems. It then shows that recently, microcredit has taken the world by storm. This development has considerably impacted economies at the grass root levels. The paper therefore examines how Microfinance institutions have overcome the obstacles to mobility of capital, notably those relating to information asymmetry and transaction costs, but also, in some cases, those related to complementary human capital. The reduction in information asymmetry by Microfinance institutions is not done in the same way as by moneylenders. Finally, the paper explains how these microfinance institutions obtain financing to understand why their costs are lower than those of moneylenders.

1 Why didn't capital flow from rich to poor?

Armendariz de Aghion & Morduch (2005) explain that if capital were perfectly mobile, it should be flowing to wherever its marginal productivity is higher. This means that if someone has a lot of capital, and a ten Euro bill would be of little use to him, then capital should move to someone who has very little capital and who can really use that money. This is illustrated in the figure 1. The increase in capital of $A2-A1 = B2-B1$. The increase in output associated with an increase from A1 is significantly higher than the increase in output associated with an identical increase from B1. In short, capital should move from the rich to the poor. This doesn't mean that the rich should gift the money to the poor. It means that either the rich should lend it to the poor, or they should be

able to invest in projects which attract labour of the poorest. Therefore, if poor continue to be poor because capital is not flowing to them, there is a paradox.

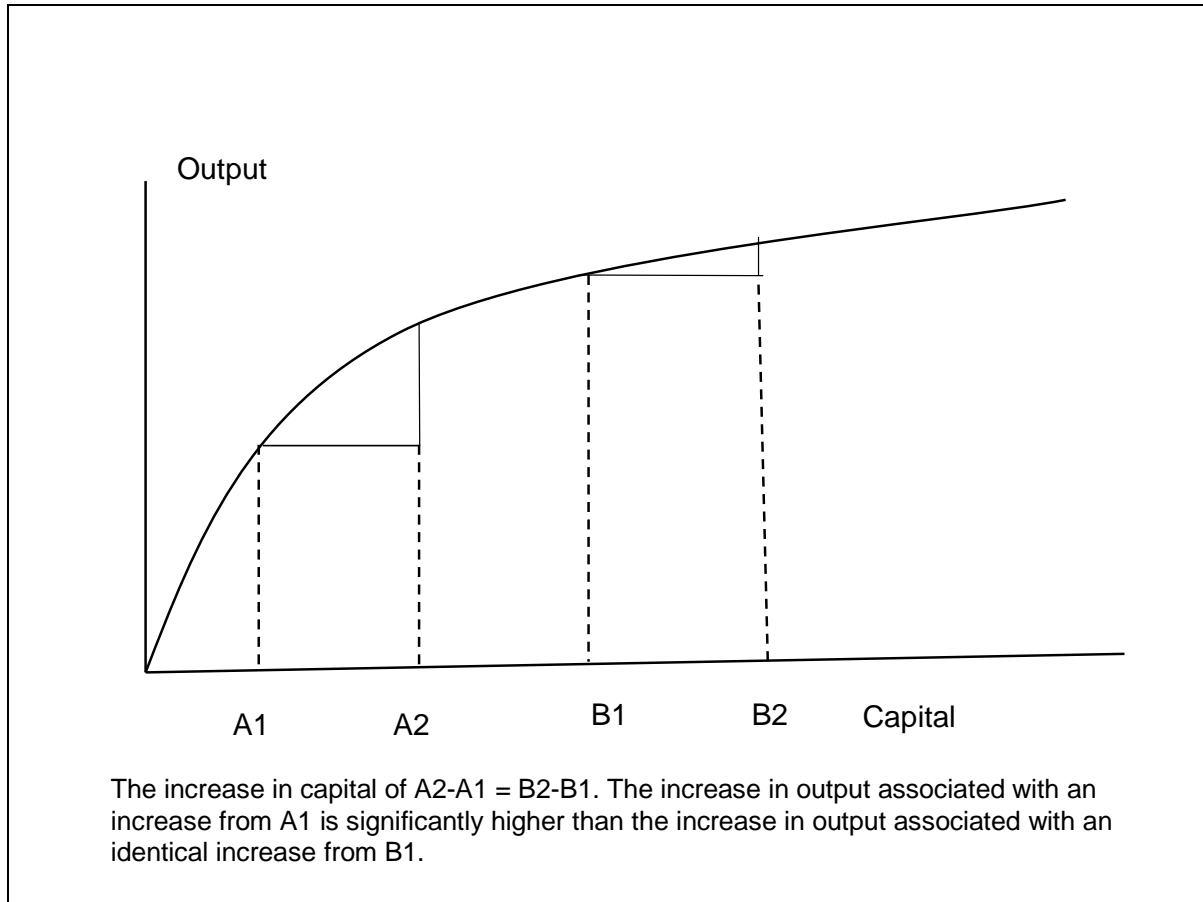


Figure 1: The Productivity of Financial Capital

The reasons for this paradox could be diverse and include lack of complementary inputs, risks and market imperfections, as well as transaction costs. We explain each of these.

First, following Armendariz de Aghion and Morduch (2005), we take into account the lack of availability of complementary inputs. For example, there is the problem that the poor are not educated. In jargon, we can say that they don't have sufficient financial capital to invest and acquire human capital. Since labour and financial capital are not the only ingredients required to cook output, a difference in human capital or land or entrepreneurial ability may lead to different productivity curves between the poor and the wealthy. In figure 2, the increase in output associated with a given increase in financial capital is higher for people who are at B1 initially compared to people who are at A1 initially.

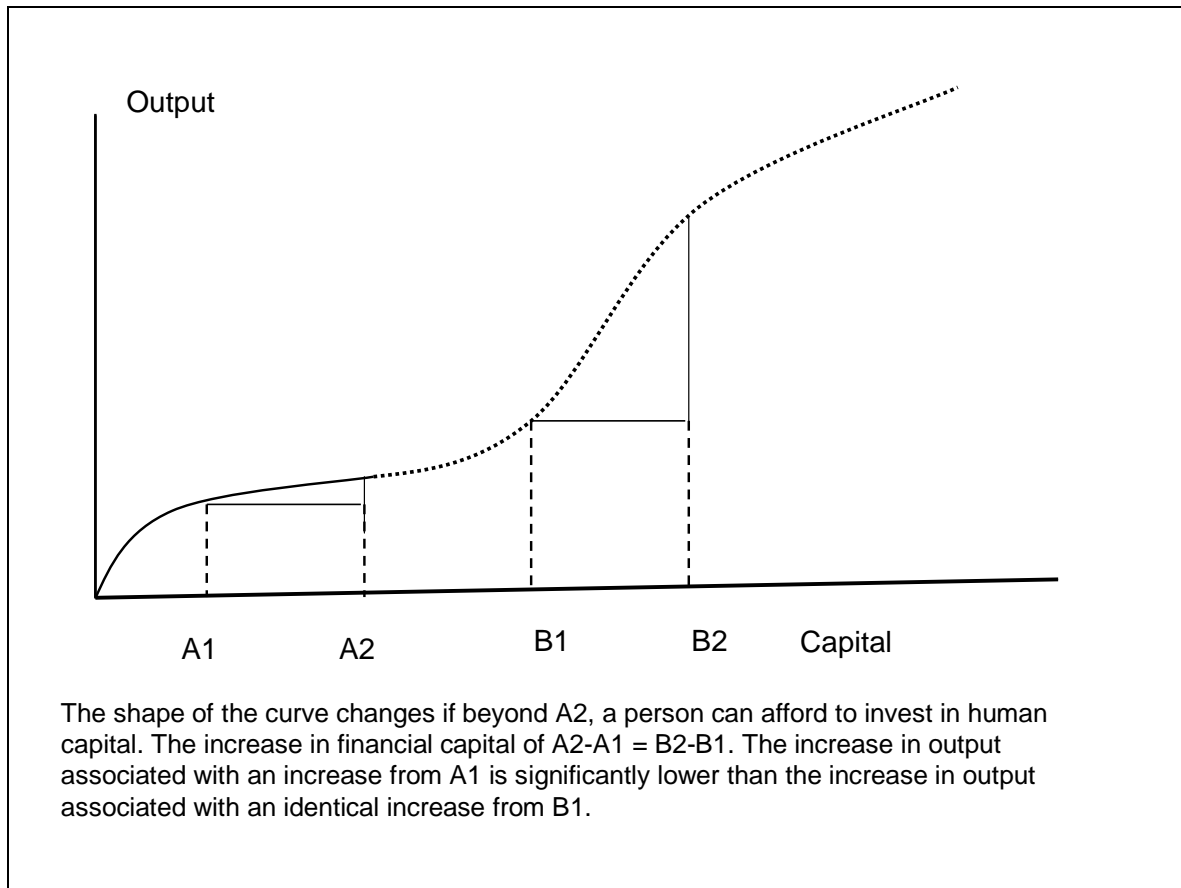


Figure 2: The influence of Human Capital on the Productivity of Financial Capital

Moreover, human capital may have external effects. For example, education may be of use to a villager only if the people he associates with are also educated. A person with software skills cannot really be of use if no one else is educated enough to use a computer. Thus, individuals in groups of poor people, especially those in isolated villages, remain poor because the village as a whole does not have the minimum human capital. This means that there is not only lack of complementary human capital with the individual, but lack of complementary human capital with his stakeholders, that reduces his productivity.

The second explanation says that investment is not based only on the marginal productivity of capital or the returns on capital, but on the risk-adjusted returns. Therefore, it is possible that the poor may promise much higher returns, but they also represent much higher risk. The classic discussion on risk in borrowing situations involves asymmetric information including adverse selection, moral hazard and difficulties in monitoring. To make these concepts clear in a Microcredit setting, we can say that when one lends to a borrower, one does not know if his project is good or bad. This is the adverse selection problem. The moral hazard problem is that once you have lent the money, you still don't know if the borrower will successfully realize the project (*ex-ante* moral hazard) and if he does succeed in his project, whether he will want to repay or take the money and run (*ex post* moral hazard). Some of these problems can be reduced by regular monitoring, but this is expensive and not practical for the small scale of loans given by a lender. For some of these problems, Akerlof (1970) suggests using outside rating firms and guarantees (like car mechanics). But who will rate millions of poor people and who will want to give guarantees for them? The history of State Aid or development loans to the farm sector has made it clear that if the State gives a loan, there is no political will to really collect. So, if the State gives a guarantee, will there be any will for the farmer to repay? An old financial solution is to use collateral such as hypothecation or mortgage of property. However, the poor often have no property of any but sentimental value. So, the banker is loathe to take it as security, without taking into consideration any transaction costs of creating legal liens. All this means that the risk of loans to the poor is considered much higher. As a result, the banker would lend money only if returns are much higher. However, usury laws in most countries usually limit the amount of interest one can charge, especially to poor consumers. These ceilings do not enable the lender to legally get adequate returns commensurate with the risk. Thus, either there is no market or the market becomes illegal or "informal".

The third group of reasons is the transaction cost of loans. Partly, we have just seen, these are the costs of monitoring and of creating legal liens on whatever collateral the poor may have to offer. But besides these, just the time of the banker spent in helping an illiterate man fill up an application form (to have his particulars available), to process the loan, to take back cash in small instalments and keep records, all have to be costed. Covering this bare minimum fixed cost means that loan sizes must be more than a certain amount to stay within a ceiling. For example, assume that the banker's assistant earns Rs. 10,000 a month (equivalent to about \$ 500) or Rs. 500 a day or Rs. 60 an hour. Let's assume that he takes only one hour for processing all stages of a loan. If the loan size is Rs. 1000 (\$ 50), he needs at least Rs. 60 to cover the transaction cost, without taking any risk, inflation or time value factors into account. This means adding 6% on top of any real cost of capital: more if the loan amount is smaller.

All the above reasons imply that if there are usury laws in a country, lending to the poor is not possible, as illustrated in figure 3, which presents the demand (Marginal Revenue curve, MR) and supply curves for loans. Although the simplistic model suffers from many limitations⁶⁴, it is good for explaining the fundamentals in this introductory paper. The effect of the human capital explanation is that the MR curve is kinked at a level where the not-so poor can afford to take time off to get educated, better health, etc. and therefore they can get much higher revenues for incremental projects.⁶⁵ The effect of the asymmetric information explanation is that marginal costs are much higher for the poorer people than for richer people. The effect of the transactions cost explanation is that the supply curve becomes downward sloping as loan size increases for richer people. The final curve is U shaped because after some point over-borrowing by rich people increases their risks. The figure shows that the first portion of the MR curve does not have any equilibrium with the supply curve. As a result, the organized sector did not lend to the poor.

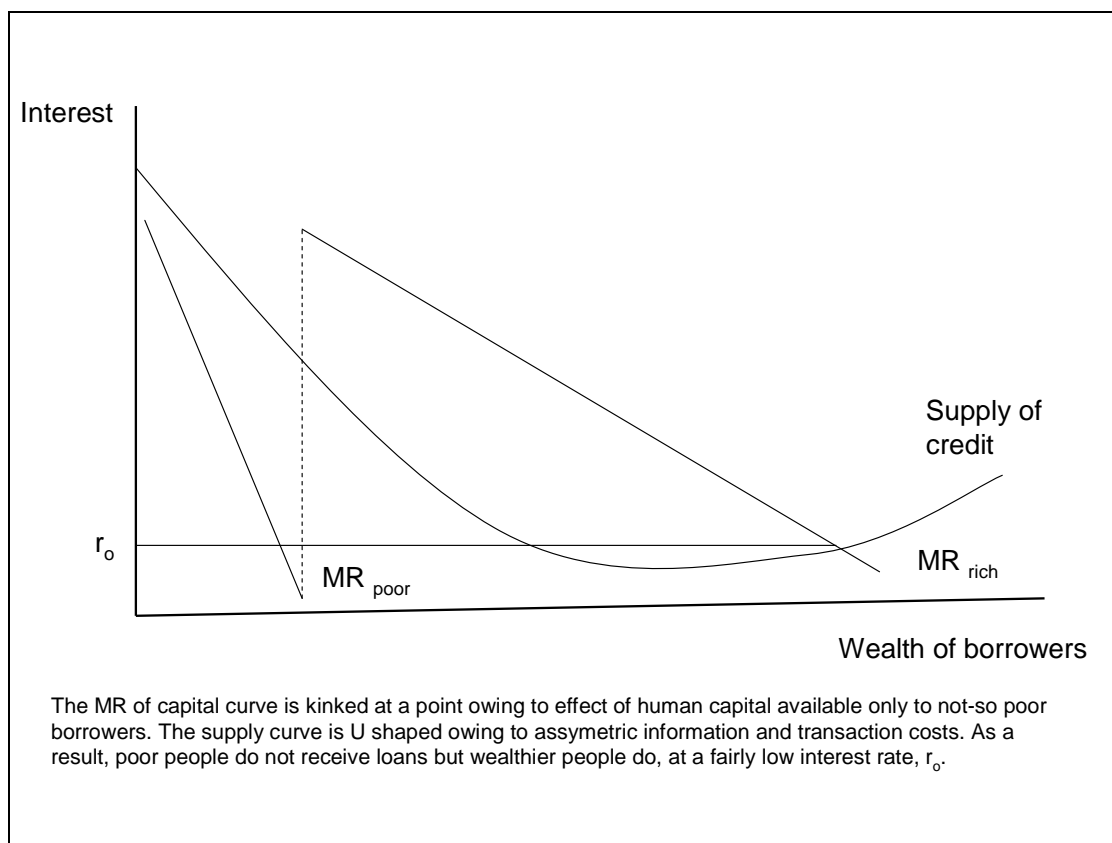


Figure 3: Why poor consumers did not receive loans - Marginal revenue of capital for poor and rich people with a U shaped supply of capital curve

However, in all these countries, even if banks don't lend to the poor, there are informal money-lenders who continue to lend to these poor people. How can they do so? First of all, these money-lenders lend at rates much higher than the legal limits. Therefore, although they are taking high risks, including violating the law, they are

⁶⁴ For example, the model presents that richer people only take bigger loans.

⁶⁵ There could be many kinks as education level increases with increases in income, but the essential point is grasped with one kink.

being compensated by high enough interest rates which could vary between 100% and 500% per year (CGAP 2002). Second, the risk being taken by the money-lenders is less because they do not suffer from the asymmetric information problems to the same extent. This is because the money-lender is often living in the same village or in the same locality as the borrower. As a result, the money-lender knows his customer intimately because the money-lender is the only source of credit and as such he has the credit history of the borrower. Thus, the adverse selection problem is reduced. Secondly, the money lender being the only source of credit, the moral hazard problem is limited: if the borrower wants a repeat loan, he must attempt to pay back. Otherwise, he will get a second loan at a higher interest, owing to reduced credit standing. Therefore, a combination of lower risks and higher interest rates allow money-lending to be a profitable business. Figure 4 illustrates this graphically. The lower asymmetric information costs of moneylenders lower the supply curve of credit facing poorer borrowers. As a result, they also get loans, but at higher interest rates of r_{ML} , much higher than the rates charged by the organized sector of r_o to richer borrowers. The supply curve of money lenders cannot fall lower because their costs are higher for various reasons: no access to cheap deposits, little access to debt from the organized sector, making them reliant only on their own equity capital. This equity capital may also suffer from seasonal variations in demand, indicating that the money lender may have to recover higher interest rates in the busy season.

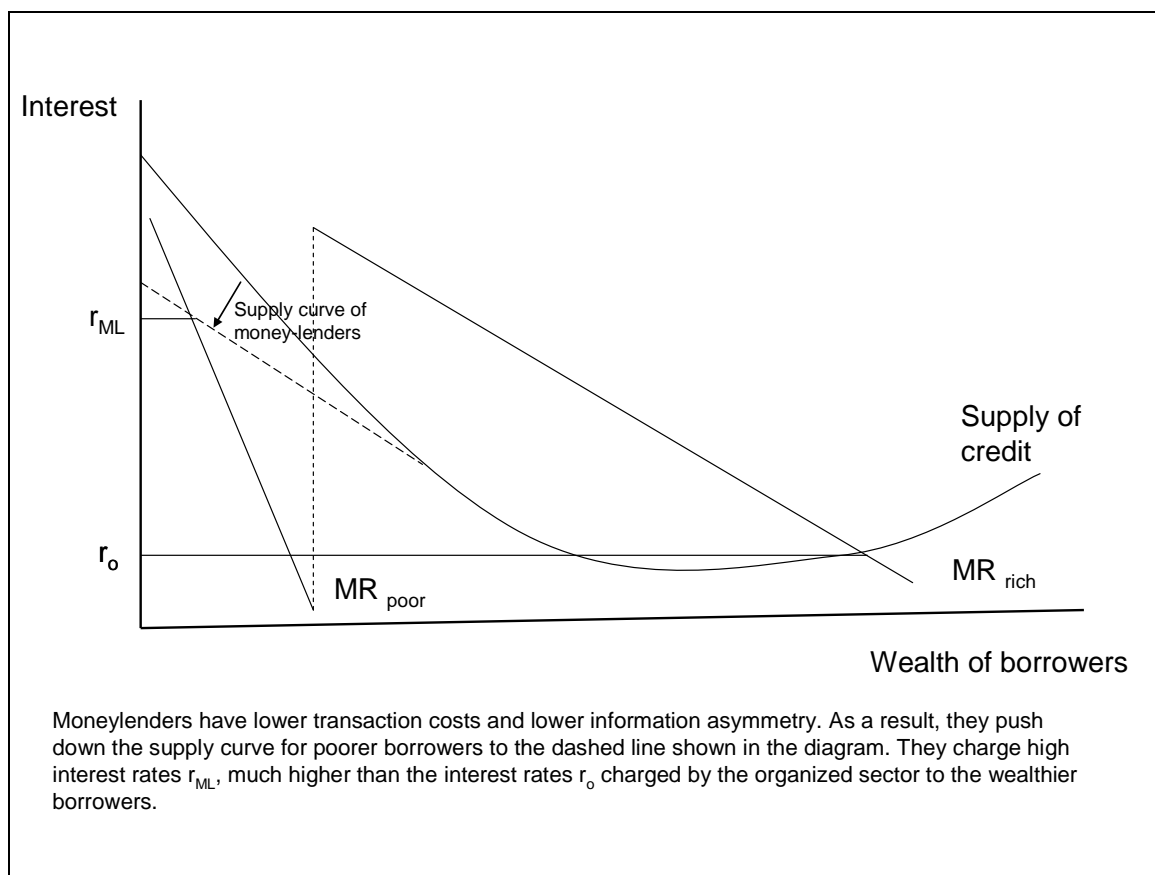


Figure 4: Why money lenders lend at high interest rates

This brings us to the next question: if money-lending is profitable, why don't new entrants increase competition and drive down interest rates and profits? The answers are several and are similar to reasons why banks don't come in. The first is based on transaction cost or barriers to entry. A new entrant has high start up costs: if he is not from the locality, he does not know the customers and does not have the case histories. These are developed by experience. Also, it is difficult, time consuming and expensive to market and monitor in isolated villages, driving up costs especially for small transaction sizes. As a result, a new entrant faces higher risks and higher costs than the local established money-lender. Secondly, not all people are prepared to break the law, thus eliminating many local competitors. Third, all the risk elements faced by banks such as lack of collateral are also faced by a new money lender. Fourth, the high interest rates create an incentive compatibility problem: there is higher motivation for borrowers to default. This is coupled by the fact that the high-interest rate loan being illegal, there would be no legal mechanism to collect. Even if the loan had been legal, there may be no legal enforcement method available in distant villages. Thus recourse to goons and ruffians may be necessary, further

driving up costs. All this means that money-lenders would have a bad reputation, not only because of the enforcement methods but also due to usurious interest rates, and few would want to enter the field. Fifth, a new competitor also has to have access to re-financing. If he is from the "informal" sector, he has to establish legal reasons for borrowing. All this means that any new entrant would only get a small share of a local market and therefore profits would be much lower than for the established money-lender.

If there were more than one money-lender (competition as opposed to monopoly), the business model of the established money-lender breaks down and the borrower could flit from one money-lender to another. Greater competition will increase default rates to the first institution, drive down interest rates and reduce the total number of customers. As a result, money lending would become a loss-making proposition, driving out competition.

If bankers can't lend to poor people, and money lenders can lend to them at very high rate, there is another paradox remaining to be explained: how come friends and relatives continue to lend money to each other at zero interest rates. Economists explain this through the concept of insurance and mutualisation of risk. In effect, by lending to each other and foregoing interest income, the lender is paying for the possibility that the other person or the community will lend to her if she ever falls in need.

With this background of unavailable credit to poor people, especially in rural communities, we will now look at the revolution caused by micro-credit.

2. The amazing growth of the microfinance institutions

The micro-credit revolution started in the early 1970's. Thirty years later, today, it is estimated that worldwide, there are 13 million micro-credit borrowers, served by over 7,000 Micro-finance Institutions (MFIs) with USD 7 billion in outstanding loans⁶⁶. The total cash turnover of MFIs world-wide is estimated at US\$2.5 billion and generating repayment rates of 97 percent. The industry has been growing at a rate of 30 percent annual growth.

The Mix market⁶⁷ reports that 1000 of the 7000 MFIs are prepared to be transparent and offer information on the MIX website for all to see. While the progress in transparency may vary from one institution to another, it's a good start. The Microfinance Summit has received reports from 3316 institutions during the 1997-2006 period (Daley-Harris, 2007)

Many of the MFIs are willing to be rated for their financial and social performances. An industry has developed to assess these institutions including names like CERISE, Microrate, CRIL, etc.

Recently, a few of these microfinance institutions have started issuing bonds and even equity shares to the public. Others are talking of securitizing their loan portfolios. Venture capitalists such as ShoreCap International are interested in picking up the best MFIs before they go public.

One key name is Grameen: the widely-imitated Grameen Bank in Bangladesh aims to provide credit to those in extreme poverty. Some 94 per cent of those who meet the bank's criteria and take up loans are women. Grameen borrowers keep up repayments at a rate of around 98 per cent. The Bank lends US \$30 million a month to 1.8 million needy borrowers. This MFI and its founder, Mohammad Yunus were jointly awarded the Nobel Peace Prize in 2006 for their work in poverty-reduction and development. Therefore, it is interesting to understand how Microcredit affects a local economy.

3. How microcredit affects a local economy

The spurt of interest in microcredit comes not from its ability to provide money, but from the impact it can have on the people to whom credit is provided. A key problem in developing economies is that there are many poor people who can provide only their labour. Since complementary assets require financing, the lack of financial capital means that entrepreneurial skills don't emerge. Thus many poor people remain unemployed because there are not many entrepreneurs. In richer countries, such as in Western Europe, it has been observed that many SMEs and micro-enterprises are created by unemployed people. However, in these countries, these unemployed people have access to complementary factors, such as education, established business support networks, loans and, often, some state aid. In poorer countries, since the rest of the factors are not present, the unemployed person remains poor. If, however, he is provided access to financial capital, he could develop some kind of micro-enterprise. In his book, Yunus (2003) describes this as the main reason for his advancing the initial capital

⁶⁶ <http://www.gdrc.org/icm/data/d-snapshot.html> last consulted on Jan 13, 2008

⁶⁷ <http://www.mixmarket.org/>

to the villagers. He wanted them to transform themselves from contract labourers to entrepreneurs who had the possibility of earning profits and growing out of their misery.

Even if micro-enterprises create only one job, that of the person creating the enterprise, it would be an increase not only in economic terms, but also in non-economic welfare, because the person would now have an identity and would be included in society. However, there is always a possibility that micro-enterprises would grow and at some point would employ more people. At the same time, not all micro-enterprises are successful. Research shows that micro-enterprises started with micro-credit backing are at least as successful as those created by individual financing by other means. There are also statistics which show that these micro-credit financed micro-enterprises imply more than 1 person on average.

All this means that people at the bottom of the pyramid start earning and, hence, start spending. This, the supply of goods and services to low income population is increased. This creates a virtuous circle, allowing them to become consumers and participate in the distribution of goods to people like them (C.K. Prahalad 2005 for more on this).

Thus, according to Yunus, micro-credit in the hands of the poor, allows the utilisation of their dormant entrepreneurial skills and this increases the productivity of capital.

4. How do MFIs get over information asymmetry

From the above discussion, it is clear that micro-credit is considered desirable from a development perspective. However, for credit to flow from the rich to the poor at some fair rate of interest, many problems need to be overcome. Most of these problems come from information asymmetry. So, we need to get over the problems of asymmetric information: adverse selection, moral hazard, monitoring etc.

The standard methods of overcoming adverse selection (Akerlof, 1970) are to have some kind of increased information to improve risk evaluation. One method could be of finding rating organizations, another could be to get guarantees, a third could be to have auditor reports. For example, in the financial markets, where an investor has to buy shares in a company he has never visited, there are agencies like Standards and Poor's who rate the companies and their bonds. In addition, the stock exchange is guaranteeing a minimum of fair-play by limiting insider trading and other unfair practices. Thirdly, the stock exchange insures that a minimum of information is regularly released to the public and that this information is audited by specialists according to some common norms such as IFRS or US GAAP.

For microfinance organizations too, the information asymmetry problem needs to be solved. Although a common bank of information on the whole population's credit histories would be ideal, this is not available yet. Thus, information remains scarce and asymmetric. The history of government guarantees has shown that if there is no repayment pressure, loans would not be repaid. Thus, guarantees are necessary, but should come from a source which can exert pressure to ensure repayment. The amazing development of microfinance institutions indicates that they have found some solutions to these problems of asymmetric information. These solutions include group lending, incentives, frequent repayment instalments, non-traditional collateral, targeting of women and using new sources of information. Although a detailed discussion of each of these would go beyond the scope of a paper on an introduction to microcredit, we will briefly see how these get over the information asymmetry problem.

One method to overcome problems linked with information asymmetry used by micro-credit organizations in group lending. Although there are many different forms of group lending exercised by microfinance institutions (solidarity groups, village banking, branch banking, etc.), the essential method consists in lending to individuals in a group, and using group pressure to ensure repayment of groups. This group pressure may come, for example, if other members of the group would get loans only if the first borrowers pay back. As a result of this, people would not like to form groups with other who are unlikely to pay back. Thus, the adverse selection problem is avoided without the bank getting information. In fact, the information exists with the people in the locality and the MFI just exploits this information. Just as groups are likely to be formed around people who are capable of managing their money, the groups may also participate in implementing the project to ensure its success. This participation may not necessarily be direct (intervening in the business) but indirect (following up, enquiring how its going, etc.). Thus, the *ex ante* moral hazard is eliminated. Moreover, the borrower has a moral pressure to repay the money since he knows that his comrades are depending on him. In fact, if there is a shortfall, the comrades may join in repaying to ensure a good group credit history so that the others can get a loan. All these group dynamics ensure that the asymmetric information problem is alleviated.

The second tool of overcoming asymmetric problems is the provisions of incentives. These incentives, like sticks and carrots, ensure that the borrower behaves in a desired manner to overcome the moral hazard aspect of the

problem. One example is to threaten to stop lending. Obviously, if a borrower does not repay, he cannot get a new loan. This is like a stick. A variant of this is staggered credit mentioned in the group dynamics mentioned above. Essentially, this means that if the borrower does not repay, his colleagues would not get loans. While this relies on social pressure, the former relies on pressure applied to the individual directly. Another variant, on the individual level, is incremental loans or progressive lending. Thus, if the borrower's project can be divided into a series of projects, the MFI lends a small amount first for one project and the next loan is given only if the first one is repaid. Thus, the borrower is assured of funding for his project, in he can overcome the moral hazard issues of being capable of managing the project and willing to repay. Another method used by MFIs is to collect repayments in public. Thus, an agent passes at a fixed time once a week and all the borrowers are present and repay him in front of everybody. This reduces collection costs as well as creates a social pressure to repay on time. In some MFIs, there are also medals given for a series of successful repayments, acting as further reinforcements both for the individual receiving the medal as well as the others watching him receive it.

The third tool mentioned above was frequent repayments. As mentioned above, MFIs often collect the repayment once a week. They have discovered that borrowers are unable to save and keep the savings. Thus, it is better to collect small amounts regularly to ensure that money comes back to them rather than being spent on other projects (alcohol, conspicuous consumption). This method is attacking the ex-post moral hazard problem.

The fourth tool is non-traditional collateral. The kind of collateral used by bankers (marketable assets) is not available with poor borrowers. However, they do have sentimental assets which may not be of use to anybody else, but could be of value to them. MFIs are willing to take these assets as collateral, since the borrower will repay to get the assets back. Another form of collateral used by MFI's is a financial collateral or savings deposits. Essentially, the MFI first requires a borrower to make compulsory savings deposits to show that she is capable of saving. These deposits are then kept as financial collateral against the loan.

A fifth method used by MFIs is to focus on women. Thus, a typical MFI may have 90% of its lending aimed at women. The reasons of this focus are many and varied (Yunus, 2003; Armendariz de Aghion & Morduch, 2005) but it suffices to mention here that women have better payment records than men.

All the above methods do not necessarily require information being transferred from the individual borrower to the bank, but they overcome the problems of asymmetric information. However, a sixth method is used to improve the information available at the MFI. This includes contacting neighbours to find out information about a potential borrower. Some MFIs also encourage cross reporting where borrowers are encouraged to be whistle blowers, in the interest of the larger group, if they think that some borrower is not going to repay.

Thus, there are many ways in which MFIs have demonstrated that the asymmetric information problem can be overcome. All this lowers the cost of lending to the poor and shifts downwards the supply curve to the poor, as illustrated in figure 5. However, the downward shift is limited by the continual presence of transaction costs such as processing time, which cannot be compressed beyond a point.

Moreover, the presence of MFIs may also shift the marginal revenue curve of the poorer people outwards, implying increased revenue from each project. This could be for various reasons. First, the group lending practice leads to pressure on the entire group to ensure that the borrower is performing. In doing so, they may also give advice as well as a helping hand to make her succeed. Second, this monitoring and the frequent repayment requirement may combine to create a Hawthorne effect where the borrower finds herself the subject of increased attention. This attention alone could increase productivity. Third, many MFIs have social objectives linked to their micro-credit, thus improving human capital (literacy, hygiene, health, etc.) and boosting their revenues. The final result of all these factors is illustrated in figure 5.

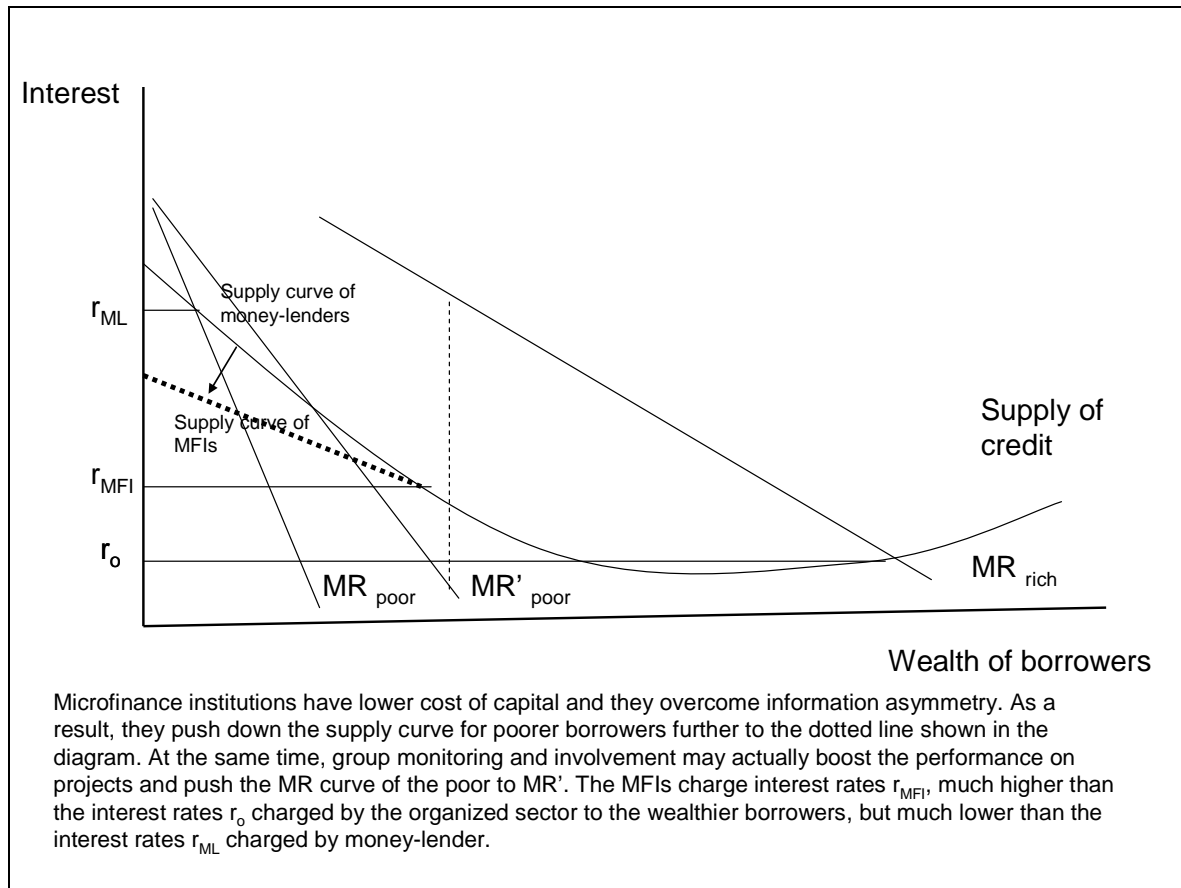


Figure 5: Why MFIs are able to lower interest rates

This demonstration has led to money flowing from the MFIs to the poor. However, while the above analysis explains why microcredit helps to reduce information asymmetry costs, it doesn't answer the question of why the reduction in supply curve is to a level lower than that of money lenders, who also get over asymmetry information costs in their own way. To answer this, we have to see the next question, which is where do the MFIs get their money: is it coming from the rich?

5. Where does the money come from?

Although the following is described as a step by step approach, it is not necessary to follow this order.

Many Micro-credit organizations started as Non governmental organizations or NGO's. They were financed by a number of different agencies. For example, Grameen bank was started by a private donation by Yunus. Grants from donors thus is the first method of starting a MFI.

With time, once the MFI establishes its credentials as an agent of economic development, it can approach local or national governments for further funding. International donors can also be contacted to augment the funding further.

Another source of funding comes from the borrowers themselves. As mentioned earlier, some MFIs insist that borrowers prove they can save. These savings deposits are retained by the bank, but can be rotated to lend to others.

If a successful MFI can demonstrate that it is sustainable by adequately high reimbursement rates and operational sustainability, it can contact banks for further lending. Banks may want to lend these funds either as a business opportunity or to enhance their image of corporate social responsibility.

As the MFI gets larger and known in the market, it may try to reduce its cost of funds by issuing bonds to the public.

Then there is the question of equity financing as the MFI changes its role from that of a not-for-profit institution to a sustainable institution with equity financing. The equity may come from depositors as used to be the case of

Credit Unions. It could also come from the national investors as the MFI gets well known in its local market. Also, some MFIs may go in for international sale of equity to socially responsible private equity investment funds such as Shore Cap International. The recent public issue of equity by Compartamentos (Mexico) and the profits earned by shareholders is leading to a heightened awareness of the latent profitability of micro-finance institutions.

Thus, all the above help in explaining that the downward shift of the supply curve of MFI funds goes beyond the shift created by the moneylender because the MFIs have access to cheaper funds than the moneylender who only has equity funding. First there is donor funding. While donor funding may have some hidden costs such as information to be provided, it is often non-reimbursable and has no dividend obligation. As a result it is practically cost-less. Secondly, socially responsible investors as well as donors, including transnational institutions, provide soft loans with credit enhancement mechanisms and reduced interest rates or interest free loans. Thirdly, with the development of the institution, it may get commercial credit. Fourthly, many of these institutions may be tax exempt. Fifthly, since they have been able to get a socially responsible stamp, their higher interest rates are not considered usurious and are not considered illegal. Thus, they benefit from a risk reduction and a cost reduction. Fourth, with even further development, some of these institutions have been allowed to get banking status and access to cheap deposits. Thus, the supply curve of credit is pushed down further. In figure 5, for simplifying, the original supply curve is the supply curve of money lenders in the beginning and that of the organized sector later. This curve shifts down owing to the introduction of MFIs for all the reasons mentioned above.

Conclusion

The paper examined why capital didn't flow from the rich to the poor. The problems identified are categorized in three broad categories: lack of complementary human capital information asymmetries and transaction costs for small loan sizes. It explained how moneylenders solve the information asymmetry problems. It then showed that recently, microcredit has taken the world by storm. This development has considerably impacted economies at the grass root levels. The paper therefore examined how Microfinance institutions have overcome the obstacles to mobility of capital, notably those relating to information asymmetry and transaction costs, but also, in some cases, those related to complementary human capital. The reduction in information asymmetry by Microfinance institutions is not done in the same way as by moneylenders. Finally, the paper explained how these microfinance institutions obtain financing to understand why their costs are lower than those of moneylenders.

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