



universität
wien

DIPLOMARBEIT

Titel der Diplomarbeit

"Microfinance in Developing Countries"

Verfasserin

Heide Maria Schörghofer

angestrebter akademischer Grad

Magister der Sozial- und Wirtschaftswissenschaften

Mag.rer.soc.oec.

Wien, im Juni 2008

Studienkennzahl lt. Studienblatt: A 157

Studienrichtung lt. Studienblatt: Internationale Betriebswirtschaftslehre

Betreuer: o. Univ.-Prof. Mag. Dr. Josef Zechner

Dr. Youchang Wu

Eidesstattliche Erklärung

Ich erkläre hiermit an Eides Statt, dass ich die vorliegende Arbeit selbständig und ohne Benutzung anderer als der angegebenen Hilfsmittel angefertigt habe. Die aus fremden Quellen direkt oder indirekt übernommenen Gedanken sind als solche kenntlich gemacht.
Die Arbeit wurde bisher in gleicher oder ähnlicher Form keiner anderen Prüfungsbehörde vorgelegt und auch noch nicht veröffentlicht.

Wien, im Juni 2008

(Heide Maria Schörghofer)

List of Figures

1	Stages of Loan and Insurance Contract	22
2	Evolution of Borrower Reputation	23
3	Evolution of Borrower Reputation $\mu^{[T]}$	26
4	Due to credit rationing the optimal interest rate is below the equilibrium interest rate. A special interest rate exists which maximizes the expected return to the lender.	31
5	Adverse-selection Effect	34
6	Degree of Credit Rationing in Uganda	51

"Microfinance has proved its value, in many countries, as a weapon against poverty and hunger. It really can change peoples' lives for the better – especially the lives of those who need it most."

Kofi Annan

Contents

1	Introduction	3
2	Background of Microfinance	5
2.1	The Development of Microfinance	5
2.1.1	The Beginnings of Microfinance in Europa	5
2.1.2	Current Situation of Microfinance in Developed Countries	6
2.2	Contractual Features of Microfinance	8
2.2.1	Individual Versus Group Loans	10
2.2.2	Grameen Bank Group Lending System	12
3	Screening Mechanisms for Group Lending Programs	13
3.1	Assortative Matching	13
3.1.1	The Model	13
3.1.2	Group Formation Game	14
3.2	Monitoring	15
3.2.1	Problem of Undermonitoring	16
3.2.2	The Contracting Process	18
4	Microcredit Repayment Insurance	20
4.1	Incorporating Insurance in Loan Contracts	20
4.2	Two Sources of Abuse	23
4.2.1	Excluding Undesirable borrowers	24
4.2.2	Fraudulent Claims	25
5	Problems of Microfinance	28
5.1	Asymmetric Information	28

5.2	Why is there Credit Rationing?	29
5.2.1	The Model of Stiglitz and Weiss	30
5.2.2	Effect of Adverse-Selection	32
5.3	Moral Hazard	34
6	Microcredit Interest Rates	36
6.1	Why are Microfinance Interest Rates so High?	36
6.2	Subsidization of Interest Rates	38
6.3	Interest Rate Ceilings	39
6.4	Competition on Microcredit Markets	41
6.5	Setting Lending Interest Rates	42
7	Microfinance in Uganda	46
7.1	Financial Sector	47
7.2	Credit Rationing	49
7.2.1	Interest Rate Ceilings	51
7.2.2	Interest Rates and Competition	53
8	Conclusion	55
	References	57
	Websources	62
	Appendix	63
A)	Abstract	63
B)	Kurzfassung	64
C)	Curriculum Vitae	65

1 Introduction

The concept of microfinance, to provide low scale financial services to low income people, is much older than generally known. This is an important fact since it shows how informal financial services in developed countries evolved to a commercial and private banking sector. It helps to understand what kind of consequences microfinance movements can have on the economical development processes in developing countries.

At the beginning, non-profit and charitable lenders dominated the microfinance sector. Their objective was to reach as many poor people with low scale financial services as possible. However, over the years new lending techniques, such as individual and joint liability contracts, evolved and created a new market which is now partially profit-making. Particularly the Grameen Bank and its group lending contract have received extensive academic attention in recent years.

The first part of this thesis compares the different contractual features of microfinance with a special focus on Grameen Bank. Subsequently, the focus will be put on how these lending possibilities help the poor to improve their social standards. Especially the improvement of women's situation is discussed. In addition the thesis takes a closer look at possible extensions to microcredit contracts, which would help to improve the quality of financial services.

Having found a way to serve low income people with small microfinance loans, new problems come up. On the one hand the financial market has to deal with market failure, namely that of asymmetric information. In the case of developing countries this problem becomes more severe since financial institutions have to deal with lack of information and data about potential borrowers. On the other hand, microfinance institutions (MFIs) are not able

to handle the tremendous demand for low scale financial services, which in the end leads to credit rationing. These problems will be analyzed more closely in the second part of the thesis. Furthermore, the reasons MFIs have to charge interest rates which are frequently higher than those of bank interest rates will be given.

It is very interesting to study how the theoretical models of microfinance are used in different developing countries. In this thesis microfinance techniques are investigated using the example of Uganda. By means of looking at the Ugandan financial sector, the most frequently applied lending methods will be analyzed as well as MFIs ability to meet the total demand for financial services of the rural population. In conclusion Ugandan's interest rate situation charged by MFIs will be dealt with.

2 Background of Microfinance

2.1 The Development of Microfinance

2.1.1 The Beginnings of Microfinance in Europa

Microfinance is not a recent development since today's developed countries can look back on a long history of microfinance. The beginning of microfinance in Europe dates back to the 16th and 17th century. At that point in time poverty increased extraordinarily. As a reaction in a number of European countries a microfinance sector started to evolve as a type of banking for the poor. Almost right from the start, microfinance was seen as a financial intermediation between microsavings and microcredit. Furthermore, due to legal recognition, prudential regulation and mandatory supervision microfinance experienced a process of mainstreaming during the 20th century. As a result of this development microfinance became part of the formal banking sector¹.

In this context especially Ireland's microfinance system is remarkable, since it prospered in a market where credit services were very difficult to obtain due to extreme macroeconomic instability and a high emigration rate throughout the 19th century. Microfinance in Ireland covers the period from 1720 to 1950, where a network of non-profit banks offered loans to the poor without collateral².

The so-called Irish Loan Funds, which emerged in the 1720s, were a long-lived, self-sustaining, large-scale microfinance organization. It issued millions of loans to the poor, without making them provide any collateral. At first, those loan funds were intended as charities which were funded by donated re-

¹see Seibel, 2005, p.1

²see Hollis/Sweetmanb, 2001, p. 2

sources, but over time they were replaced by financial intermediation between savers and borrowers.

By the middle of the 19th century loan funds had become one of the most important financial institutions in the country. They covered approximately 20% of all households, far more than commercial banks. Furthermore, the deposit rates of those funds were three times higher than those of commercial banks, whereas loan funds charged higher interest rates. Since the loan funds became a serious threat to commercial banks in 1843, these institutions induced the government to put a ceiling on the interest rate which lead to the loss of the loan funds' competitive advantage. The end of the story was a substantial decline of scale until they finally disappeared in the 1950s³.

2.1.2 Current Situation of Microfinance in Developed Countries

Political development in several countries created an environment in which small microfinance beginnings evolved into huge networks of local financial institutions which are now part of the formal banking system. Nonetheless, the problem that poor households are excluded from the mainstream formal credit market up to now, could not have been completely solved in developed countries. Therefore, how do poor households deal with borrowing barriers in developed countries nowadays?

For example, in the United States an extensive set of credit markets for the poor operates apart from the mainstream credit markets. It is about the so-called "fringe banking", which consists of pawnshops, payday loan firms and cheque-cashing firms. "Fringe banking" is of great importance, since the Unites States provide a weak social safety net.

The clients of fringe banking come from a variety of socio-economic back-

³see Seibel, 2005, p.2

grounds but all of them are of low income. They have limited access to formal credit markets because of bad credit histories or the fact that they have reached the limit of their borrowing capacity already. Fringe financial services issue short-term financing to people in need because of job loss, unexpected expenses, income shortfalls and other personal problems. Thus, fringe banking generally represents the ultimate borrowing possibility to low income people in order to keep themselves liquid.

In the last decade important changes have occurred in the modality of small-scale lending to poor households. According to Caskey, a major shift away from lending by pawnshops to so-called payday lending could be observed. One reason is that payday lenders are willing to make larger loans to poor households - their loans average about \$ 250 versus about \$75 for pawnshops - than pawnbrokers. In addition, payday lending is considered to be more practical since the borrower does not have to provide a security in the form of a personal possession to the lender.

Payday lending refers to very short term loans taken out by workers who run out of cash before payday. The borrower writes a personal check made out to the lender and in exchange the payday lender receives a cash payment. Before the loan matures, the borrower can pay back the face value of the check in cash and the debt is cleared. If the borrower can not repay, the lender will deposit the check. The opinions about payday lending as a useful service to low-income individuals differ. Critics argue that payday lenders provide extremely expensive short-term loans to people who have no better alternatives. Furthermore, they state that many lenders do not use payday loans once but in fact take out such loans frequently.

Another fringe banking service, that low income people rely on, are so-called "check cashing outlets" (CCOs). Most charge a check-cashing fee that

is a percentage of the face value of the check. Many clients of CCOs are less well educated than those who use banks and are not provided with bank accounts. In recent years many CCOs started to offer payday loans.

In conclusion, it can be said that the strong growth in payday lending proves that many low-income people are willing to accept higher interest rates. The reason for that phenomenon can be found in their desire to be supplied with short-term loans whenever they need them. In the future, electronic payment trends are expected to further change the shape of payday lending, pawnbroking and commercial check cashing⁴.

2.2 Contractual Features of Microfinance

The modern microfinance movement began as an economic development tool in the 1970s. It rapidly gained prominence in the 1980s and 1990s since a rethink, concerning the image of the poor, has taken place. In former times poor people were mostly seen as unproductive individuals who could only be helped through donor financed programs and subsidies, but microfinance disproved this assumption. It appeared that the poor can become active and viable actors in the economy, when endowed with appropriate surrounding conditions. Over the years microcredit programs advanced from being an experimental alternative to a serious model for lending to the poor⁵.

Until recently large groups of society in poor and developing countries were excluded from the credit market. They did not have any access to financial services such as bank saving accounts, credit facilities or insurances. It was almost impossible for them to apply for micro loans, which they necessarily needed, for improving their self-employment opportunities. As a

⁴see Credit Markets for the Poor, 2005, p. 18

⁵see Credit Markets for the Poor, 2005, p. 199

consequence, self-employment became impossible to realize or if they had already started their businesses they suffered from underfinancing and were not able to expand their businesses.

The reasons for exclusion were multifarious. One reason stems from the fact, that lending institutions typically have limited information on the quality and behaviour of their clients, particularly of those with small informal businesses⁶. Furthermore resource-poor entrepreneurs, who cannot provide any collateral, are unable to demonstrate their creditworthiness to the banks. This makes it impossible for banks, who grant loans only by collateral, to assess borrowers risk. Moreover, people who run small scale businesses mostly ask for small loan sizes. In the formal banking system however it is not possible to substitute lacking collaterals by additional screening or monitoring efforts. The reasons are that on the one hand the thereby added costs exceed the potential revenues and that on the other hand most institutional lenders of the formal banking sector consider the allocation of micro loans as highly inefficient⁷.

However, microfinance institutions, also known as MFIs, which offer financial services to impoverished people, have shown that informational and collateral problems of poor people can be overcome by offering special contracts. Loan contracts are a sequence of uncollateralized loans which grow over time. Through periodical loan repayments, the borrowers obtain access to further loans but if a borrower defaults he will be excluded. Thus, borrowers repayment incentive is created by their desire to maintain access to further microfinance loans⁸.

⁶see Sadoulet/Carpenter, 2001, p. 4

⁷see Kritikos/Vigenina, 2005, p. 213-214

⁸see Sadoulet/Carpenter, 2002, p. 4

2.2.1 Individual Versus Group Loans

Most MFIs apply two types of loan contracts, in order to deliver financial services to their clients: the individual loan contract and the joint-liability loan contract, which is also known as group contract.

In the individual loan contract borrowers are individually responsible for their loan. However, in the group contract borrowers are jointly liable for the loan. The first thing a borrower needs to do, before being considered for a group loan, is to become a member of a group. In the majority of cases, the credit group must consist out of five or seven individuals. Then each group member receives a loan on her own, but all group members are held jointly liable for the entirety of the group loan. This means that if one group member gets into financial problems, all other group members are considered in default too and are punished by the lending institution⁹.

The great majority of MFIs rely on group lending contracts. Especially Grameen Bank and its group lending contract have received a lot of academic attention in recent years. A reason for this was the success of the Grameen Bank in Bangladesh, since it raised hopes that group lending schemes can be used to provide the rural poor with formal sector credits¹⁰. According to the Grameen Bank homepage, the repayment rate amounts to 97%, which is higher than other schemes that lend money to the rural poor. In addition, Grameen Bank's default rate is about 2%, which is lower than the default rates of commercial banks in Bangladesh. There, commercial banks suffer a default rate of about 70% for agricultural loans and 90% for industrial loans. According to Muhammad Yunus, the reason for such a big difference can be found in the psychology of the borrowers. The rich can afford the

⁹see Credit Markets for the Poor, 2005, p. 229

¹⁰Chowdhury, 2005, p 416

consequences of non-repayment, whereby the poor cannot¹¹.

For a better understanding how group lending schemes work, the Grameen Bank group lending scheme will be examined more closely. Muhammad Yunus, founder of the Grameen Bank (Bangladesh), realized that poor people have the potential to help themselves if given access to the benefits of efficient financial markets. His solution to the lack of financial services in areas of severe rural poverty was the following: First, Grameen Bank hires agents which travel through the countryside at regular intervals, making loans and collecting loan repayments. Secondly, only women who belong to the Grameen's loan circles are eligible for future loans¹².

Loans disbursed by the Grameen Bank are small, but sufficient for women to finance micro-enterprises like rice-husking, machine repairing, purchase of rickshaws, buying of milk cows, goats, cloth, pottery and much more. Giving women ownership of assets helps them to reduce their dependency on their husbands and makes it possible for them to improve their homes and the nutritional standards of their children. Moreover, Grameen Bank pays attention that the ownership of houses or businesses, which were built through their loans, remain with the borrowers who are mainly women. Today about 97% of Grameen Bank's borrowers are female.

The Grameen bank lending system is based on the voluntary formation of small groups of five people. They help to establish morally binding group guarantees instead of collateral, which is required by conventional banks. In other words, social cohesion between group members give rise to norms and sanctions to prevent borrowers from defaulting. Especially in small villages with high poverty rates and limited availability of collateral social capital

¹¹see <http://www.gdrc.org/icm/grameen-article4.html>, availability date: June 16, 2008

¹²see Article Feiner, 2006

has become an important factor for the successful implementation of group lending contracts¹³.

2.2.2 Grameen Bank Group Lending System

At the Grameen Bank, not all group members are provided with credit at the same time period. At first only two group members are eligible for a loan and receive it. Subsequently the group is observed for a month, in order to see whether the members are acting upon the rules of the bank. Not till the first two borrowers begin to repay the principal plus interest over a period of six weeks, the other members of the group will become eligible for a loan themselves. Through these restrictions, group pressure is built up and contributes to keeping individual records clear. In this sense, mutual responsibility of the group serves as a collateral on the loan.

If serious repayment problems emerge, all group members will be cut off from future borrowing. In practice, group members often step in for a defaulting group member with the intention of collecting the money from the defaulted member at a later point in time. Such a behaviour is encouraged by Grameen's policy of not extending any further credit to a group in which a member defaults. However when no problems come up, borrowers are offered a larger loan repayable in the next "loan cycle"¹⁴. Thus, if the relationship between the Grameen Bank and their borrowers persists, loan sizes will start to grow and credit histories will be built up. Eventually, loans may be large enough to realize bigger investments like building, repairing a house or sending a child to university ¹⁵.

¹³see <http://www.grameen-info.org/bank/bcycle.html>, availability date: March 26, 2008

¹⁴Loan cycle = from initial disbursement to repayment of the final installment

¹⁵see <http://www.grameen-info.org/bank/cds.html>, availability date: March 26, 2008; Armendàriz, 2005, p.88

3 Screening Mechanisms for Group Lending Programs

3.1 Assortative Matching

One of the problems, in the context of group lending contracts, is concerned with adverse selection. Adverse selection describes an incident, when borrowers have personal attributes that are unobservable to the lender but affect their repayment probability of the loan. MFIs try to overcome the problem of adverse selection by offering credit terms that only attract safe borrowers.

The common approach for financial institutions to separate safe from risky borrowers is to ask the borrower to pledge collateral. In developing countries it presents a great problem, since poor borrowers are not in the position to provide collateral. Thus, MFIs have problems to distinguish safe from risky borrowers. However, Ghatak (1999, 2000) proposes a solution to that by showing how MFIs can take advantage of borrowers knowledge about each other's risk type, that is information which is unobservable to MFIs.

3.1.1 The Model

Let us suppose that there are risk-neutral borrowers which are of two types, safe (s) and risky (r). Both borrowers are endowed with an investment project. Since borrowers lack sufficient collateral each borrower has to take a loan in order to finance the project. Each project has a probability of success p_i ($i = s, r$), where $p_s > p_r$. For simplicity, it's assumed that one's project return does not depend on the other's project return (they are uncorrelated). A borrower's project can take two values, either income (H), if successful or zero, if it fails. The borrower takes a loan of one unit of capital and repay

$r > 1$. In other words, at the end of the loan time period the borrower has to pay principal plus interest.

For keeping this model simple, it limits the group size to 2 in which borrowers form groups voluntarily and take a loan. Under a joint-liability credit contract, the borrower pays nothing to the lender when his project fails due to the limited-liability constraint¹⁶. However, if the borrower's project is successful, then beside paying her own debt to the lender, she is obliged to pay an extra amount $c > 0$ for the team member whose project failed. The parameter c simply measures the degree of joint liability.

3.1.2 Group Formation Game

Now the aim is to show, how the group formation game works. It will be pointed out how the instrument of joint liability can be used to induce self-selection of groups. In other words, why do joint liability borrowers always come up with partners of the same risk type? At this, Ghatak talks about the positive assortative matching in the group formation game.

Under joint-liability lending the risk type of a group member is of less importance until the partner's project fails. In that case, every borrower prefers a safe borrower compared to a risky borrower since a safe partner causes lower expected joint liability payments than a risky partner. However, just as a borrower herself succeeds she realizes the benefit of having a safe rather than a risky partner. As a result, a safe borrower's preference to form a group with another safe borrower is bigger than the risky borrower's preference to form a group with a safe borrower. The reason is based on the fact, that the safe borrowers probability of success is higher than that

¹⁶The limited-liability constraint implies that the borrower cannot repay more than their current income.

of a risky borrower. Therefore, safe borrowers appreciate safe partners more than risky borrowers, since they repay more often. This implies that safe borrowers are willing to pay bigger side payments for having a safe partner than risky borrowers. In summary, if borrowers are allowed to form their own groups, they will sort them into relatively homogenous groups of "safe" and "risky" borrowers. In the end this leads to homogenous matching.

In real life there is a possibility, that a risky borrower makes side payments to a safe borrower in order to make him accept as a partner. However, according to the proof of Ghatak, the maximum side payment a risky borrower is willing to pay, in order to be accepted as a partner of a safe borrower, is less than the minimum amount a safe borrower will need to be paid in order to be compensated for having a risky partner¹⁷.

3.2 Monitoring

Monitoring is a process of gathering information and imposing punishment. Through its application to individual or group lending contracts the basic problem of information asymmetries can be diminished. Monitoring helps to reveal which project a borrower chooses and in addition penalties are set by the monitor in case the chosen project is too risky.

Under individual lending, the lender either monitors the borrower directly and gets to know the identity of the project with some probability or she delegates the task of monitoring to another agent. Under group lending the

¹⁷Side payments are feasible also under the assumption that borrowers have no wealth that can be used as collateral. However, borrowers within a group can make transfers to each other in ways that are not possible with an outsider (namely, the bank) like free labour service.

see Ghatak, 1999, p. 29; Ghatak, 2000, p. 609

borrowers can monitor each other. By comparing these diverse monitoring methods, it will be discovered that lender monitoring is relatively costly compared to group monitoring, where two borrowers can monitor each other at a lower cost.

In a monitoring process, with some probability, the monitor detects the identity of the borrower's project. This means, that the monitor either detects the risk type of the borrower's project or she detects nothing. In the case monitoring is successful - the monitor observes that the borrower chooses a risky project - she can impose a form of punishment like to confiscate the realized returns on the project. At this, the expected punishment, which the borrower may face, can vary because of the level of uncertainty or the form of punishment imposed in case of detection. Therefore, the monitor chooses the certainty equivalent of the expected punishment, that is the probability of detection times punishment imposed by the monitor in case of detection.

The borrowers who monitor each other, know the level of being monitored and therefore exactly know what kind of punishment they have to await at the moment they choose the projects. In many cases, the threat of being punished is an appropriate method in order to prevent borrowers from selecting risky projects and in the end the punishment does not need to be realized¹⁸.

3.2.1 Problem of Undermonitoring

In group lending, the level of monitoring among two borrowers are strategic complements. This means that if borrower j monitors, then borrower i has an incentive to monitor herself. However, if borrower j decides not to monitor then borrower i is free to invest in the second project and has no incentive to monitor herself. The consequence will be, that both borrowers choose the

¹⁸see Credit Markets for the Poor, 2005, p. 234

second project and the lender makes a loss. The problem occurring here can be denoted as "undermonitoring". Through the involvement of either sequential financing schemes or a combination of joint liability and active monitoring, the lender may be in position to resolve the problem of undermonitoring. The latter concept is applied by the Grameen Bank. Through the arrangement of weekly group meetings at which Grameen Bank employees participate and train the group members confidence between the villagers and the bank can be built. In general, the problems can be resolved on the spot.

Now, let us consider how this problem can be resolved by means of a sequential financing concept. Let us assume we have a group of two borrowers, borrower 1 takes on the role of a monitor and borrower 2 represents a normal borrower, who the bank initially lends 1 dollar. In addition, the dollar is randomly allocated to one of the two borrowers. In the first stage, the assigned borrower invests the loan in her first project. The project fails and both borrowers end up with a payoff of zero due to the limited liability. However, when the project succeeds, the roles of the borrowers are reversed. In that case, the payoff depends on the outcome of the second project. Now, the project of borrower 2 is financed by the lender and borrower 1 takes on the role of the monitor¹⁹.

The outcome of the sequential financing concept is easily understandable. The decisive point is, that if borrower 1 does not monitor and borrower 2 receives the loan, then borrower 2 will invest into the risky project and borrower 1 will have a payoff of zero. However in the case of monitoring, the monitor may force borrower 2 to invest in the safe project, so the lender can be repaid and borrower 1 receives a loan in the second period. This in turn

¹⁹see Aniket, 2003, p. 5

creates a greater incentive for borrower 2 to monitor herself²⁰.

3.2.2 The Contracting Process

The lender of a micro loan sets up the contractual conditions of individual or joint liability credit contracts. In this context, the most relevant parameters consist of the loan size and the payment which the borrower has to make and which depends on the outcome observable to the lender without monitoring. Then, the borrowers have to take the decision whether to accept or reject the contract offer. Thus, when they accept, borrowers start to play the following non-cooperative game: In the first phase both borrowers simultaneously commit themselves to levels of expected punishment. In addition, borrowers begin to observe each other's actions, whereas lenders do not monitor, and choose projects. In the end returns are realized and payments are made.

In an individual liability contract borrowers do not monitor each other. It follows that it is incumbent upon the lender to decide on the level of monitoring. Borrowers choose their projects on the basis of their utility and independently of the other borrowers' choices. Each borrower will only choose a safe project if the expected utility by implementing a safe project is equal or bigger as the expected utility of a risky project.

In the case of joint liability contracts borrowers act as monitors - observe each other's actions - but lenders do not monitor. Borrowers are free in implementing strategies, fixing the level of monitoring and in choosing projects which constitute the subgame perfect Nash equilibrium²¹, also known as (SPNE), of this game.

On closer examination this game features three possible SPNE:

²⁰see Chowdhury, 2005, p. 418

²¹Nash euqilibrium can only be constituted through symmetric strategies, because borrowers' actions are strategic complements.

1. Neither of the borrowers monitor and both choose the risky project
2. Both borrowers monitor and choose the safe project
3. Both monitor and choose the risky project

Let us take a closer look on the first subgame in which borrowers undertake projects after they agreed upon not to monitor each other. If one borrower chooses the risky project, the probability that she will have to pay the liability declines and in turn the probability of the borrower who chooses the safe project will rise. The consequence is that the safe borrower obtains the same gain as the risky borrower by choosing the risky project and additionally experiences a decrease in the probability of having to pay the liability. Thus, the key feature of that subgame is, if one chooses the risky project the other one will do as well.

The second possible Nash equilibrium exists in the subgame in which both borrowers choose the safe project after both borrowers agree to monitor. It is a Nash equilibrium because the borrower who monitors selects an appropriate level of monitoring, namely the other borrower chooses the safe project as well. Furthermore, this subgame perfect Nash equilibrium is the pareto dominant one.

The last possible Nash equilibrium concerns the subgame in which both borrowers monitor and both choose the risky project. At this it is also about the only Nash equilibrium in each of the subgames after asymmetric monitoring decisions ²².

²²see Madajewicz, 2004, p. 11-12; Credit Markets for the Poor, 2005, p. 235-239

4 Microcredit Repayment Insurance

So far micro-finance institutions (MFI) and programs focused on providing uncollateralized, inexpensive loans to the poor, to which they maintain access as long as the borrowers repay. However, in case of default they will be punished by losing further access to these loans. By and by, MFI practitioners and promoters realised that providing credit is not enough in order to assure sustainable development to the people. Therefore, MFIs started to provide a range of other financial services like insurances beside their microcredit services.

In the past, insurances were never considered as an option for the poor, since formal insurance services were not affordable by them because of high insurance premiums. In addition, they were considered to be uninsurable due to a wide variety of risks like death, illness, injury and natural disasters.

The insurance contract that MFIs propose allow them to provide insurance to the poor whenever they suffer from liquidity shocks. The contract aims to cover borrowers repayment obligations when they find themselves unable to repay. The idea behind, is to reduce the vulnerability of borrowers assets to credit risk by increasing repayment rates to lending institutions simultaneously. Thus, by adding insurance clauses to credit contracts credit risk will be transfered back to MFIs. In other words, it is about a simple credit-with-insurance contract that MFIs implement in environments in which insurance mechanisms are incomplete.

4.1 Incorporating Insurance in Loan Contracts

Due to the fact that borrowers are vulnerable to repayment risk, MFIs introduce an insurance contract which is tied to the individual loan. The

insurance contract is based on the main incentive mechanism in microlending contracts, that of loan repetition. This means that borrowers repay in order to maintain access to bigger future loans.

The main idea of the contract is to award an insurance conditional on the basis of the borrowers reputation. Individual borrowers build up a credit record by means of their loan repayment behaviour. As long as borrowers past repayment behaviour is good, their insurance claims will be honored and thus protect them from default. However, borrowers with bad credit records do not qualify for insurance.

Let's take a closer look on the timing of the loan and insurance contract, which is illustrated in figure 1. At the beginning of each loan issuance, borrowers with good credit records receive a loan. If they qualify for insurance, they will have to take the decision whether to sign up for the insurance contract or not. In the case they subscribe, they will have to pay an insurance premium. The remaining money - loan minus insurance premium - will be invested in one of their projects, which can succeed or fail. At the moment, the borrowers get to know the outcome of their project, they have to make a repayment decision which will be influenced by their desire to maintain access to future loans. If the borrower decides to repay, she remains in good standing and can receive a loan in the next period. Otherwise the borrower will be excluded from the business relationship forever. After that process, the first loan cycle ends and the business relationship moves on to the next period.

Since borrowers do not possess any assets or other sources of income, they are unable to signal their type of risk, that of being a risky or safe borrower, by any investment. Thus, MFIs initially do not have any information on any

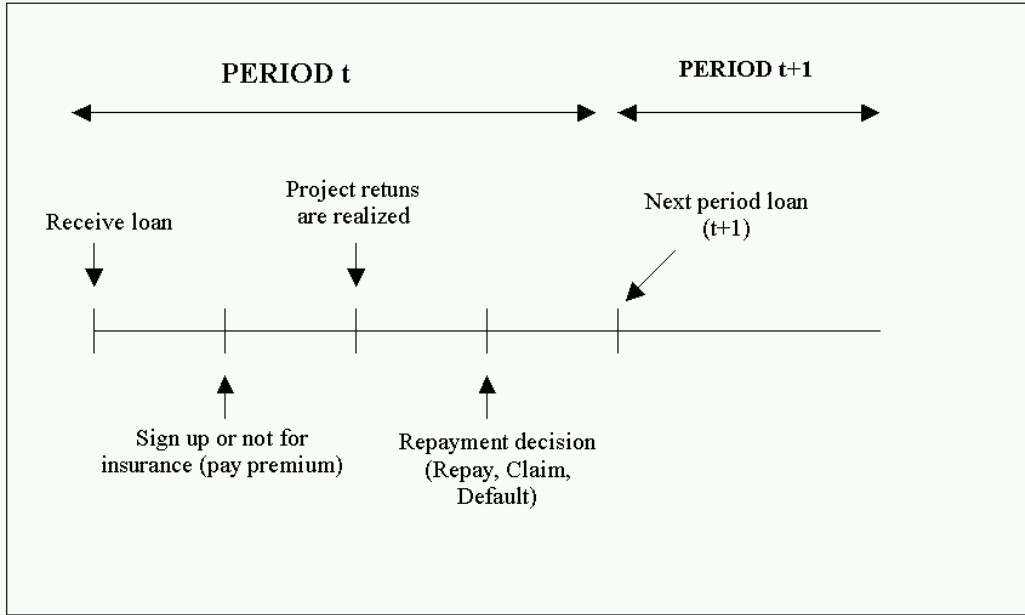


Figure 1: Stages of Loan and Insurance Contract

Source: Loïc Sadoulet (2003)

particular borrower and all borrowers start at the same reputation μ_i ²³. At regular intervals, MFIs update the borrowers reputations according to their repayment observations. Successful repayment of a loan increases borrower reputation while default leads to a decrease in reputation. Figure 2 gives an example of a possible evolution of borrower reputation²⁴.

Being able to finance the insurance MFIs claim an insurance premium. The premium need to be paid when the loans are issued. MFIs generally charge a fair premium to each subscriber. Therefore the following pricing rule can be applied: "the institution cannot charge more than the minimum

²³It need to be recorded that MFIs mostly start with some prior distribution of borrower risk. The initial value of μ_i can for example be the average of the institutions prior distribution of types.

²⁴see Credit Markets for the Poor, 2005, p. 213

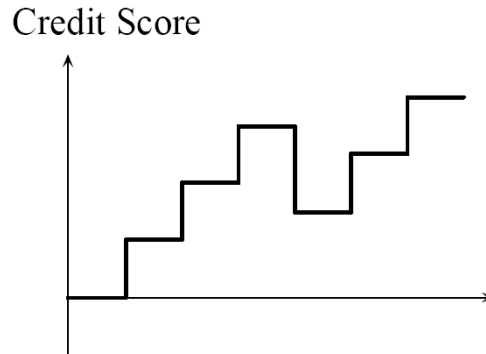


Figure 2: Evolution of Borrower Reputation

Source: Loïc Sadoulet (2003)

premium that would make the insurance contract incentive compatible"²⁵. Thus the premium for the borrower is mainly dependent on her reputation. From period to period the premium will be updated as more information becomes available.

Due to the fact that borrowers must have been succesful in all periods before they can qualify for insurance for the first time, the premium that borrowers face before signing up for the first time decreases by and by and tends downwards to zero. Thus, the premium will eventually become low enough that any borrower who values future loans will be able to sign up.

4.2 Two Sources of Abuse

Due to the problem of asymmetric information between lenders and borrowers²⁶, MFIs are faced with to two sorts of abuse. One stems from undesirable borrowers whose ambition is to sign up for insurance in order to have access

²⁵see Credit Markets for the Poor, 2005, p. 224

²⁶Lenders have difficulties to assess the true riskiness of loans they extend since they cannot figure out the risk type of their potential borrowers.

to more loans before they get excluded from the credit scheme at last. The other sort of abuse are fraudulent claims.

4.2.1 Excluding Undesirable borrowers

Undesirable borrowers can be described as borrowers who are excessively risky and default strategically. If they were granted a loan without insurance, they would directly go into default after one period, since the cost of repaying a loan balances the benefit of maintaining access to future loans. However, the implementation of an insurance permits these borrowers to default several times before they are finally excluded from the program. Thus, these undesirable borrowers want to sign up for the insurance contract in order to benefit from a second loan on which they default, as long as the payable insurance premium is not too large.

A way of avoiding this adverse selection problem is to award insurance coverage only to borrowers who can show a reputation above a certain threshold. The threshold must be set at a level so that it takes a couple of preliminary rounds of successful loan repayments to reach it. Thereby, MFIs are given a chance to sort out borrowers who would otherwise strategically default on the insurance contract. The occurring waiting period serves as a deterrent to the riskier borrowers. This means, the longer the waiting period the fewer the number of undesirable borrowers who will in fact bear up the waiting period.

The insurance contract must provide some incentive mechanisms that induce borrowers to claim insurance only when they need it. Therefore the insurance contract is made up with the following two restrictions:

- No borrower with a reputation below some cutoff is insured;
- There is no insurance in the first round loans;

The aim is to keep undesirable borrowers from participating and in order to achieve it, MFIs put an entry cost on the insurance contract for screening out undesirable borrowers. Entry costs can either take the form of sufficient rounds of successful loan repayments or the form of a series of high insurance premium until the borrower has established a reputation as a willing repayer. Anyway, not all strategic borrowers can be excluded, since eliminating all strategic defaulters would take an infinite waiting period.

Nonetheless, in comparison to no-insurance contracts, MFIs can reduce the cost of adverse selection in the insurance contract. The reason is the following: If the waiting period is long enough to discourage risky borrowers from participating, the cost of adverse selection becomes consistent with the cost in the no-insurance case. This means, that strategic borrowers either default on the first loan or they repay T-1 loans before defaulting on two loans in a row. Therefore, for a waiting period that is long enough, the losses in the insurance case will be smaller than in the no-insurance case. That outcome can be traced back to the fact, that risky borrowers will repay a few loans before defaulting on two²⁷.

4.2.2 Fraudulent Claims

The gains and losses in reputation for borrowers are greatest in the early rounds of the loans because there MFIs do not have much information on borrowers. Each repayment or insurance claim represents a part of the information which is available to MFIs to assess borrowers. With incremental loan rounds, the gains and losses in reputation shrink to the point that it becomes negligible. Thus, the risk of a decline in reputation, as a deterrent for false insurance claims, diminishes by and by.

²⁷see Loïc Sadoulet, 2003, p. 16

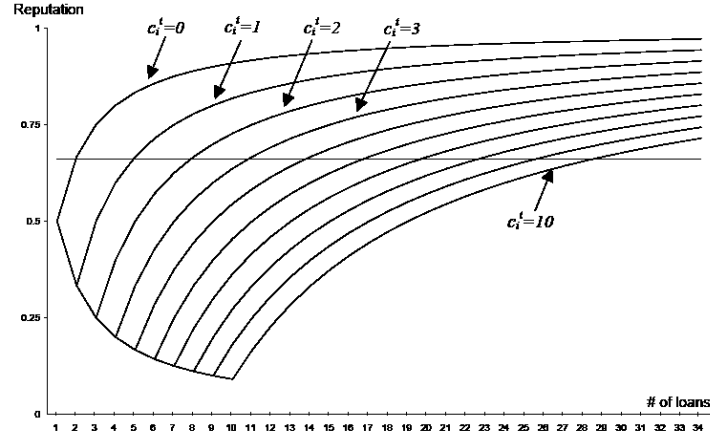


Figure 3: Evolution of Borrower Reputation $\mu^{[T]}$

Source: Loïc Sadoulet (2003)

Figure 3 illustrates borrowers' potential reputation as a function of the numbers of loans repaid. The outer curve describes a borrower's reputation with no default, the second curve a borrower's reputation with one default and so on. In other words, any default reduces the reputation of the borrower and drops the borrower down one curve.

Borrowers who make use of fraudulent claims do not repay the current loan and the insurance premium. This leads to an increase in the future insurance premium due to a loss of reputation and to an increase in the probability of falling below the reputation threshold after repeated failures. It is notable that after enough loan repetitions these two loss effects become infinitesimal. Therefore an extra cost, beyond simple loss of reputation, for claiming insurance must be imposed to discourage borrowers from applying false claims²⁸.

What form can extra costs take? Let us consider the US-style credit-card system, in which only customers with stable incomes and credit records

²⁸see Credit Markets for the Poor (2005), p. 218

without great blemish receive credit cards. If a customer cannot meet his obligations, the issuing bank either restricts or even stops the customer's credit card use. However, by and by customers are able to build up a reputation as good customers by means of responsible use and timely payments. In return banks are more likely to increase customers credit limits and accept late payments. However, the occurring cost to the holder is the late payment fee and a negative entry in the holder's record if the late payments happen recurrently. A few missed payments are already sufficient to cause the MFI to deny the credit card holder any further credit service. It will take quite a long time for the credit card holder to make the bank forget the bad credit record.

Credit-with-insurance contracts cannot in every detail be compared to US credit-card contracts since credit-card companies issue temporary loans to borrowers of good standing and they allow late payments. However, some parallels can be drawn in conjunction with reputation and sanctioning mechanisms. The sanctioning mechanisms to prevent moral hazard behaviours are equivalent to downgrading a borrower's reputation and reducing her acquired "experience"²⁹.

²⁹see Loïc Sadoulet (2003), p. 19; Credit Markets for the Poor, 2005, p.218

5 Problems of Microfinance

One of the most serious economic problems for low development countries is that many poor people do not have access to formal credit markets. This exclusion holds back many potential entrepreneurs with viable business plans from realizing their own potential. The problem arises from the inability of formal sector banks, including both private and government banks, to profitably lend money to poor people. In recent years the concept of "micro-finance" has succeeded in expanding the availability of credit³⁰.

However, access to credit in low development countries does not necessarily imply that the demand for credit will as well be satisfied. It is up to the lender how much credit to allocate, based on the probability of loan default. More precisely, the probability of default is influenced by the expected returns of the project, the terms of the loan, market imperfections and borrower characteristics³¹.

5.1 Asymmetric Information

The problem of asymmetric information, based on the work of George Akerlof (1970), can also be assigned on the informal credit market. Credit markets are characterized by information asymmetries between lenders and borrowers, which signifies that borrowers are better informed about their risk of default than lenders. Information asymmetries in credit markets arise because gaining information of potential borrowers in such markets is difficult. Normally, lenders like to know, whether potential borrowers have repaid their debts in the past, whether they have a reputation as reliable borrowers, whether the prospective borrowers can be trusted with the money or whether the borrow-

³⁰see Kahlmann/Odeen, 2005, p. 5

³¹see Okurut/Schoombee/Berg, 2004, p. 7

ers owe money to anyone else, but in low development credit markets credit histories of borrowers are not documented.

Acquiring accurate information on the quality of borrowers can either be obtained by the potential borrower himself or by questioning other people like close friends and family member of the borrower. If lenders collect information about potential borrowers in this way, they will run the risk of getting a truthless view of borrowers creditworthiness or will be confronted with mistrust and the questioned people will withhold information, if the person who wants to find out such information is a stranger. It is extremely costly for lenders to obtain reliable information because of long journeys to faraway villages and multiple interviews with sources of dubious reliability³². Therefore, if lenders would increase the lending rate to compensate for the higher cost of information gathering or the level of reliability of the information, it may result in adverse selection and moral hazard. In this case it is about borrowers' behaviour which may negatively affect the lenders' return³³.

5.2 Why is there Credit Rationing?

Credit rationing refers to a situation in which the lender refuses to extend a credit to a borrower at a certain interest rate that was appointed by the lender to a borrower type. However credit rationing should not be mistaken for the phenomenon whereby a potential borrower refuses to accept credit because of too high interest rates. The key feature of credit rationing is that credit is denied at interest rates which were proposed by the lender himself. Even if the borrower was willing to pay a higher interest rate as asked, credit would still be refused by the lender³⁴.

³²see Jaffer, 1999, p. 8

³³see Okurut/Schoombee/Berg, 2004, p. 7

³⁴see Greenbaum, 1995, p.267

When credit is rationed an unsatisfied demand for credit at a certain interest rate occurs. This shows that credit demand exceeds supply at that interest rate. For economists credit rationing is ridiculous, since prices - interest rates - shift demand and supply up or down until demand and supply are equated at the new equilibrium. So if prices do their job, no lasting rationing should be able to exist.

An explanation why asymmetric information may lead to "credit rationing" is given in the paper of Stiglitz and Weiss (1981). Stiglitz and Weiss show that the interest rate does not fulfill the market-clearing function under certain conditions, which signifies that credit supply and demand will not always end up in equilibrium. In addition the paper explains, that in equilibrium a credit market may be characterized by credit rationing. In conclusion, it will be showed that credit rationing can be an optimal strategy for lenders to distinguish between good and bad borrowers.

5.2.1 The Model of Stiglitz and Weiss

MFIs, which are issuing loans, are concerned about the interest rate they receive and the riskiness of the loan. At first, a theoretical view will be taken on the model of Stiglitz and Weiss. As illustrated in figure 4, credit interest rates announced by MFIs for a particular borrower type are called the optimal interest rate r^* . The MFIs probability distribution of returns, that is the relationship between the interest rate charged and the expected return to the lender, can be described as a concave function. Therefore the expected return to the lender starts to increase less rapidly than the interest rate and beyond a certain point the expected return may start to decrease.

Furthermore both, demand and supply of loans, are functions of the in-

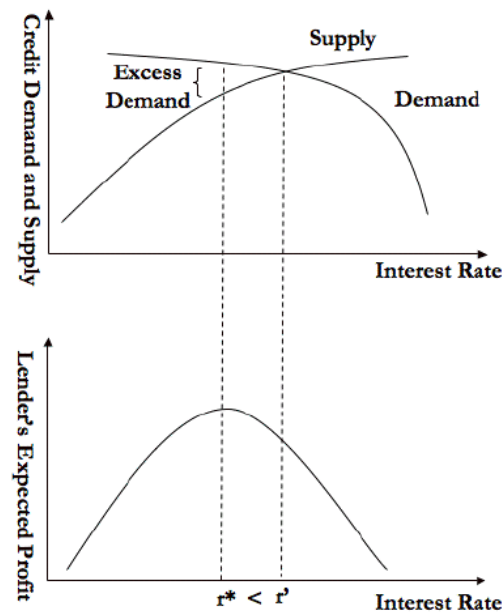


Figure 4: Due to credit rationing the optimal interest rate is above the equilibrium interest rate. A special interest rate exists which maximizes the expected return to the lender.

Source: see Kahlmann/Odeen, 2005, p. 11

interest rate whereas the supply is determined by the expected return at r^{35} . If demand exceeds the supply of loans traditional analysis would allow unsatisfied borrowers to pay a higher price - interest rate - in order to reach a new equilibrium of supply and demand. However, in informal credit markets that method cannot be applied since supply does not equal demand at the optimal interest rate. Lenders would not be willing to lend to a borrower who offers to pay more than the optimal interest rate because the expected return to the lender at an interest rate above r^* is lower than the expected return to the lender at the optimal interest rate³⁶. Therefore the lender keeps her

³⁵The expected return corresponds to the market clearing rate.

³⁶see Stiglitz/Weiss, 1981, p. 394

interest rate at some level below the market-clearing level. In other words, the bank will engage in "credit rationing", whereby it will not raise its interest rates even though some of the borrowers would be willing to pay more than the optimal interest rate³⁷.

In their paper, Stiglitz and Weiss show that the interest rate can influence the credit risk in a way which may attract bad borrowers under certain circumstances ("adverse selection") and it may induce borrowers to riskier actions ("moral hazard").

5.2.2 Effect of Adverse-Selection

In an informal credit market two types of information hurdles occur:

1. Lenders cannot distinguish between borrowers who are of different risk levels, even after they have analyzed each borrower's financial standard.
2. Lenders cannot totally control borrowers actions and this induces the borrower to increase the project risk³⁸.

Because of the predominant information gap that exists between lenders and borrowers, a lender uses the interest rate as a screening device which sorts good borrowers from bad. The theory indicates that after a certain point higher interest rates lead to "adverse selection" in the pool of potential borrowers. This phenomenon occurs because lenders try to set adequate interest rates for borrowers with good credit records, but simultaneously attracts people with little motivation to repay. As a consequence the bank raises its interest rates to scare off "bad" borrowers but ends up losing more of the "good" borrowers and attracting more risky borrowers with higher

³⁷see Jaffer, 1999, p. 12

³⁸see Greenbaum/Thakor, 1995, p.269

probability of default. "Good" borrowers react more sensitively to interest rate variations. Thus, the bank is caught in a process where it is impossible for them to get rid of "bad" borrowers without losing "good" borrowers³⁹.

The effect of assortative matching is best illustrated by an example. Let us consider two potential borrowers who can either be "safe" or "risky" and the lender cannot tell who is who. Both borrowers do not have wealth of their own and so they need to borrow money for carrying out their investment projects. A project requires \$100 of investment and once the loan is given it needs to be repayed at the end of the year. Let us assume that the "safe" borrower succeeds in 100% of the cases which implies a return of \$110 before loan repayment. However the "risky" borrower succeeds only in 10% of the cases and may yield \$160 but has a 90% chance of yielding zero return. The "safe" borrower is willing to pay an interest rate of let us say 9% and his project yields enough to cover the principal plus interest and still leave a residual of \$1. On the other hand, the "risky" borrower only cares about the outcome in which the project yields more than the credit amount, because if the project yields less than the amount the losses fall entirely on the lender because of the borrower's limited liability. Knowing that the "risky" borrower is willing to pay a higher interest rate of let's say 59%.

The crucial point here is that the lender is unable to ex ante distinguish between the different types of borrowers. The only thing the lender knows is that increasing interest rates will become counterproductive at a certain point according to the model of Stiglitz and Weiss⁴⁰.

On the one hand, increasing interest rates raise the return of successful projects but on the other hand they may drive valuable borrowers out of

³⁹<http://www.santafe.edu/education/reu/2003/files/goldberg.pdf>, availability date: June 16, 2008

⁴⁰see Jaffer, 1999, p. 12

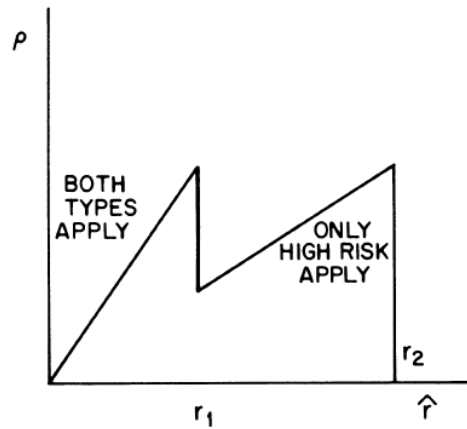


Figure 5: Adverse-selection Effect

Source: Stiglitz/Weiss

the credit market. Figure 5 illustrates, that "safe" borrowers will only lend money at an interest rate below r_1 and "risky" borrowers are willing to borrow money at relatively high interest rates, below r_2 . Already a slight increase of the interest rate above r_1 will have a dramatic effect on the pool of potential borrowers. It can be seen that all "low risk" borrowers do not participate in the credit market any more⁴¹.

5.3 Moral Hazard

Moral Hazard occurs after the transaction, that is after the loan has been disbursed, since lenders do not know how the given money will be invested. In other words, it refers to situations in which the lender cannot observe the effort or action undertaken by the borrower or the realization of project returns⁴².

An increase in the interest rate may worsen the moral hazard problem

⁴¹see Stiglitz/Weiss, 1981, p. 397

⁴²see Armendáriz/Morduch, 2005, p. 43

since borrowers with low risk projects will be more likely to invest in high risk projects which leads to a higher default probability. This may mean a lower profit for the lender at higher interest rates. Thus, lenders realize that it does not make much sense to increase the loan interest rate since its expected profit is maximized at the interest rate level at which credit demand exceeds supply (see figure 4)⁴³. As a consequence lenders who have to struggle with information asymmetries and lack control over the actions of borrowers are forced to design credit contracts that induce borrowers to set actions that enlarge their repayment probability and also attract more low risk borrowers. For this reason, lenders may find it better to charge lower interest rates than the optimal interest rate and use other mechanisms than the interest rate to ration credit⁴⁴.

Even if a borrower has once accepted a loan at an interest rate level it can still come to a difficulty for the lender. The reason is simple, since if the interest rate is high the borrower's incentive to cheat on the lender will increase. If the profit, which the borrower may realize, is not high enough and if the borrower has no possibility to increase her potential profit by changing the project she may simply stop exerting effort into the project. The lender will then lose everything apart from what she can repossess from the project since the borrower has limited liability⁴⁵.

Therefore lenders do not lend at high rates even if the borrowers are initially willing to accept the interest rates⁴⁶.

⁴³see Greenbaum/Thakor, 1995, p.270

⁴⁴see Hoff/Stiglitz, 1990, 238

⁴⁵see Greenbaum/Thakor, 1995, p. 267

⁴⁶see Kahlmann/Odeen, 2005, p. 13

6 Microcredit Interest Rates

6.1 Why are Microfinance Interest Rates so High?

The main objective of Microfinance Institutions is to ensure that poor people have permanent access to financial services whenever they require it. The realization of this plan mainly depends on the MFIs' ability to generate enough income in order to cover all costs. Interest rates charged on micro loans mark the main income source to MFIs. Therefore MFIs have to charge interest rates that are high enough to cover all of their costs. Three types of costs can be associated with the lending process, namely the cost of funds for on-lending, the cost of risk (loan loss) and all administrative costs (identifying and screening clients, processing loan applications, disbursing payments and collecting repayments).

The majority of the administrative process of commercial banks is carried out by technology. This means that computeraided credit scoring, communication with clientes and payment processes facilitate the administrative processing. By contrast, MFIs lack technology and therefore are heavily dependent on personal contact for issuing and recovering loans. This is very time-consuming and resource intensive. In addition, MFIs have to deal with poor physical infrastructure, like inadequate road networks, transportation and telecommunication systems, which contributes to an increase in administrative costs and adds significantly to the overall cost of microfinance operations⁴⁷.

Beside high administrative costs, lending costs are proportionally higher for micro loans than for commercial bank loans. While a developed commercial institution may lend a large sum of money to one borrower, a microlender

⁴⁷see Fernando, 2006, p. 3

will lend a very small sum to many borrowers. The following example, described by the CGAP Donor Brief No. 6, clearly illustrates the principle of the microcredit cost structure:

"Compare the costs of two hypothetical lenders, Big Lender and MicroLender, each of which lends US \$1,000,000. Big Lender makes a single loan, while MicroLender makes 10,000 loans of US \$100 each"⁴⁸.

- "If the actual cost per loan is \$25, the percentage cost is 0.25 percent for a \$10,000 loan, but 25 percent for a \$100 loan.
- The percentage cost of making microloans is even higher because clients generally have no credit history, no collateral, are frequently illiterate, and often live in remote areas. It is expensive to go to these clients' doorsteps and intensively monitor repayments"⁴⁹.

Even if the interest rates of microloans are high, they still have a positive effect on borrowers in low development countries. Since they generally do not have any access to formal financial credit markets, impoverished people attach great importance to micro loans. Therefore they are willing to pay higher interest rates.

Even though, the MFIs' interest rates are higher than those of commercial banks they are still below those charged by so-called credit sharks, like money-lenders or other informal sources⁵⁰. According to the paper of Mr. Fernando, the nominal interest rates charged by most MFIs in the Asian and Pacific region range from 30% to 70% a year. However the effective interest rates are even higher because of commissions and fees charged by MFIs. By contrast, a standard moneylender loan in the Philippines, also known as the

⁴⁸see CGAP Occasional Paper No. 9, 2004, p. 2

⁴⁹see CGAP Donor Brief No. 6, 2002, p.1

⁵⁰see <http://www.cgap.org/portal/site/cgap/>, availability date: April 24, 2008

"5/6" loan, amounts to a daily interest rate of 20 percent. In other words, for every five peso borrowed in the morning, six must be repaid in the evening⁵¹

6.2 Subsidization of Interest Rates

In order to make up for the lack of commercial banks in rural or agricultural areas, governments designed special rural credit programs or institutions. The main task of these programs was to issue loans to the poor at artificially low interest rates which are below the market rates. It was assumed that subsidised interest rates lower credit costs and increase the supply of credit. In addition it was argued, that the economic growth and rural development can be brought forward in low development countries. For example: According to the paper of Mr. Okuma, Uganda's introduced programs included the Rural Farmers Scheme implemented through the Uganda Commercial Bank (UCB) during the late 1980s and early 1990s, the Entandikwa Credit Scheme instituted in 1994 and the current loans extended by Microfinance Support Center Limited. All of these programs targeted for subsidized lending interest rates.

Over the years a lot of literature examined the outcomes of subsidized interest rates on financial services to the poor. It was found that governmental support of lending programs had a negative effect on the provision of financial services. It was based on cheap funds which lead to an excess in demand and as a consequence made rationing mechanisms on subsidized loans necessary. Another problem that came up was that borrowers often viewed these subsidized loans as grants or gifts and this lead to low repayment rates since borrowers were less likely to repay those loans. Moreover, low interest rates contributed to the MFIs' inability to cover their operating costs and

⁵¹see CGAP No. 6, 2002, p. 1

thus lead to a dependence on private-donors or governments. This implied that lending institutions could only survive when provided with permanent new subsidies.

Knowing all that, it can be said that subsidized programs are only beneficial to a small number of borrowers for a short period of time. If the governmental support disappears, the MFI will be forced to raise its interest rates in order to survive. In comparison, MFIs with clients who pay interest rates show that fundig can also be achieved from commercial sources. The outcome is sustainable growth without being dependent on subsidized funding sources, which are often unpredictable.

After the examination of all negative effects of subsidies on MFIs it is time to think about situations in which subsidies are necessary. Especially during the start-up phase of MFIs subsidies are important. They are used to cover operating costs, to build MFI systems and staff capacity. The reason is that it may take several years for MFIs to reach a certain scale which allows them to cover their costs from interest rate income only. During the set up phase MFIs are therefore dependent on donors who provide the capital base needed for optimal growth, the increase in leverage and the ability to serve a larger number of clients on a sustainable base.

6.3 Interest Rate Ceilings

Many developing countries have imposed interest rate ceilings for protecting the poor from so-called credit sharks - unscrupulous lenders. However, interest rate ceilings do not help to increase the availability of affordable financial services for the poor⁵².

Interest rate ceilings have a negative effect on the poor, especially when

⁵²see CGAP Donor Brief No. 18, 2004, p. 1

they are set too low. Then it is impossible to sustain microfinance services since interest rate ceilings ration people's access to financial services. Furthermore, MFIs incur losses since too low interest rates make it impossible to acquire enough income in order to cover all their operating costs. As a consequence MFIs are forced to withdraw from the market or to reduce their services in rural areas. Also the set-up phase for new MFIs will be made more difficult since potential investors will be discouraged from supporting the industry. Another important aspect of interest rate ceilings is that they affect the creditworthiness of MFIs since it limits the MFIs' ability to borrow from the market for financing their operations. Interest rate ceilings also influence the lending nature of MFIs, which means that more short term loans than long-term loans will be given. Interest rate ceilings contribute to an increase in policy risk and an additional expected increase in inflation will lead to an enlargement of the risk in long-term loans. Finally, interest rate ceilings often create an artificially high demand for microcredit relative to the amount supplied, which leads to credit rationing through MFIs⁵³.

In the case of Bangladesh, the government has imposed an interest rate ceiling for government-run microcredit programmes, which amounts to 11 per cent at flat rate and about 22 per cent at declining basis. By the example of the Grameen Bank it can be seen that the interest rate charged on micro loans, is lower than the government rate. According to the Grameen Bank homepage, it charges an annual interest rate of 20% (on a declining basis) for its main credit product namely income generating loans, 8% for housing loans, 5% for student loans, and 0% (interest-free) loans for Struggling Members. In addition, all interest rates charged by the Grameen Bank are simple interest and calculated on a declining balance method.

⁵³see Fernando, 2006, p. 4

In his paper, Mr. Fernando states that the interest rate charged by the Grameen Bank was below their cost recovery levels and in turn lead to losses. Moreover, their incurred losses could only be absorbed by the big subsidies it received through government and private donors. In addition, Grameen Bank's interest rates may not be compared with those of other MFIs, since other MFIs have not received similar amounts of subsidies.

6.4 Competition on Microcredit Markets

Economists have nearly always supported policies that favor competition, since competition helps to lower equilibrium interest rates for consumers⁵⁴. In the formal market sector new firms will be attracted in as soon as firms make excess profits and as a result firms will reduce the prices of their services. If no firms enter the market, threat of entry will act as a deterrent for firms from offering higher prices. However, through the lowering of prices firms may prevent new firms from entering the market since their excess profit will be reduced to a level where their incentive to enter the market disappears.

Competition in credit markets is not limited to pricing since it offers consumers greater access to providers, a wider choice of appropriate products and better services⁵⁵. Knowing that, it could be expected that an increase in competition between MFIs would lead to greater advantages for the poor⁵⁶. However, the effect of competition in microfinance markets differs from the theory as the following paragraphs show.

In formal credit markets profit-maximizing firms compete with each other, however in microcredit markets the lenders' behaviour is influenced by non-governmental organizations (NGO) which do not aim to maximize their prof-

⁵⁴see McIntosh, 2004, p. 271

⁵⁵see CGAP Focus Note, 2006, p. 1

⁵⁶see McIntosh, 2004, p. 272

its. Furthermore donors and government-controlled wholesale funders have a great influence on the competitive behaviour of the microfinance sector because of their controlling function over funds. "For example, when external funders impose restraints on pricing, microlenders are no longer free to make fully competitive pricing decisions"⁵⁷.

McIntosh and Wydick analyzed the effects of competition on microcredit markets. They designed a model in which a single client-maximizing MFI competes with an existing informal moneylender. At this they examined the effects when new MFIs enter the same pool of borrowers. The first finding was that new entering MFIs reduce the ability of a socially motivated lender to generate loans that foster lending to the poorest borrowers. The second finding was that missing grant funding restrictions to poor borrowers may lead to a behaviour in which client-maximizing non-profit institutions undercut profit-maximizers by capturing the most profitable borrowers in a given pool. The last negative effect of competition among MFIs is that asymmetric information between lenders will be increased. The more MFIs there are in a market, the more complicated it gets to share information between lenders. Therefore, many borrowers would be tempted to take multiple loans which in turn would increase average debt levels among borrowers and decrease the expected equilibrium repayment rate on all loan transactions. In the end all borrowers would be worse off⁵⁸.

6.5 Setting Lending Interest Rates

The appropriate pricing of financial services is decisive for the short- and long-term success of MFIs. Over the years several theories have been put

⁵⁷see CGAP Focus Note, 2006, p. 3

⁵⁸see McIntosh, 2004, p. 272

forward that dealt with the problem of how to set MFIs' interest rates since some donor-financed programs which set interest rates at very low levels had to struggle with financial viability when donations were interrupted. It has been found out that the most important requirement for MFIs to maintain long-term viability is to charge interest rates that are high enough to cover all operational and financial costs of MFIs⁵⁹.

Three different types of lending interest rates can be distinguished, namely nominal, real and effective interest rate. The nominal interest rate is normally charged to borrowers, while the real interest rate takes the inflation into account. The real interest rate can be approximated as follows:

$$\text{Real Interest Rate} = \text{Nominal Interest Rate} - \text{Rate of Inflation}$$

A nominal interest rate larger than the rate of inflation indicates a positive real interest rate, which is essential for the MFI to be able to maintain the value of its loan fund. However, in the borrowers' perspective a positive interest rate is a service in return for using the lenders' money.

According to Richard Rosenberg an effective interest rate is the rate that a borrower really pays, based on the amount of actual interest yield in the borrower's hand during each period of the life of the loan. The formula for calculating the effective interest rate is:

$$\text{Effective Interest Rate}^{60} = \frac{\text{Total interest and fees}}{\text{Average balance outstanding}} \times \frac{\text{Periods in a year}}{\text{Periods in the loan term}}$$

Through changing any of the following factors an increase in the effective interest rate as well as an increase in the MFIs' yield can be achieved.

⁵⁹see http://depts.washington.edu/mfinance/ru/curriculum/docs/55_pricing.pdf, availability date: May 20, 2008

⁶⁰http://depts.washington.edu/mfinance/ru/curriculum/docs/55_pricing.pdf, availability date: May 20, 2008

- Requiring payment of interest at the beginning of the loan, as a deduction from the amount of principal disbursed to the borrower.
- Requiring that a portion of the loan amount be deposited with the lender as compulsory savings either prior or after the loan disbursement.
- Charging an initial comission or a fee in addition to the interest.
- More frequent payment of principal and interest, like quoting a monthly interest rate but collecting principal and interest weekly.⁶¹

The amount of a microcredit interest rate that a borrower has to pay depends on the quoted interest rate and on the applied calculation methode. Two general calculation techniques are used, namely the declining balance methode and the "flat" methode. The difference between these two methodes is due to the fact that the declining balance methode imposes lower costs on the borrower as the "flat" methode does. Furthermore, the declining balance methode generates lower yield on a MFI's portfolio as as the "flat" methode⁶².

The Consultative Groupe to Assist the Poor (CGAP) has designed a methode which enables MFIs to determine appropriate interest rates that ensure their financial viability. The model presented by the CGAP is simplified and therefore a little imprecise. However, the model provides an approximation that should be of good use for many MFIs. The effective interest rate (R) required for financial sustainability is made up of five elements:

- Administrative Expenses(AE)
 - calculated by dividing total annual administrative expenses by the average outstanding loan portfolio;

⁶¹see Occasional Paper No. 1, 2002, p. 5

⁶²see http://depts.washington.edu/mfinance/ru/curriculum/docs/55_pricing.pdf, availability date: May 20, 2008

- Loan Loss Rate(LL)
 - that is the annual loss due to uncollectible loans;
- The Cost of Funds (CF)
 - is not the MFI's actual cash cost of funds but it is a projection of the future "market" cost of funds as the MFIs' past dependence on subsidized donor finance grows;
- The desired Capitalization Rate (K)
 - represents the real net profit that the MFI decides to target divided by the average loan portfolio
- Investment Income Rate(II)
 - income, expected from the MFI's financial assets, divided by the average loan portfolio⁶³

In general, according to CGAP, an efficient mature microfinance institution has administrative expenses between 10%-25%, loan loss rates between 1-2% and a capitalization rate of at least 5-15%. The formular for detecting the minimum required annualized effective interest rate is as follows:

$$R = \frac{AE+LL+CF+K-II}{1-LL}$$

⁶³see CGAP Occasional Paper No. 1, 2002, p. 2

7 Microfinance in Uganda

Financial markets in developing countries and particularly in the sub-Saharan African (SSA) region are largely underdeveloped and dominated by a few, often foreign-owned commercial banks. In fact, credit, savings and insurance markets are generally non-existent in rural areas. Therefore, financial services which are adjusted on the requirements of the rural population are of great importance⁶⁴.

The significance of rural credit services can be best understood by considering the importance of the agricultural sector on the economic system of a developing country. In Uganda, it can be seen that agriculture forms the most important sector of the economy. It employs over 80% of the work force which accounts 30.2% of the gross domestic product (GDP)⁶⁵.

According to the paper of Mr. Mpuga the agricultural potential of Uganda cannot fully be exploited in consequence of limited rural credit services, poor infrastructure, small land holdings and the land nature tenure system. In addition, the agricultural sector receives only about 9% of the total commercial bank credit annually. In contrast, wholesale and retail trade of general merchandise, which contribute about 10% of GDP, receive more than 50% of total commercial bank credit and manufacturing, which also contributes about 10% of GDP, receives about 25% of commercial bank credit ⁶⁶.

⁶⁴see Mpuga, 2004, p. 2

⁶⁵see <https://www.cia.gov/library/publications/the-world-factbook/geos/ug.html>, availability date: June 16, 2008

⁶⁶see The Republic of Uganda, 2004, p. 2

7.1 Financial Sector

Uganda's financial system is highly dualistic since it consists of formal and informal financial markets. The formal financial market is constituted by commercial banks, development banks and credit institutions which are mainly urban based. Therefore rural areas, home of the majority of poor people, remain either under-banked or are served by informal financial institutions. Even though Uganda has a long history of informal finance, a more organised microfinance industry did not develop until the early 1990s⁶⁷. During the last eight years of the 90ies, the industry had a per annum growth rate of about 70%. Since then MFIs have grown in terms of number of clients, size of their portfolio and level of outreach. Currently over 500 MFIs are operating in Uganda⁶⁸.

The Centenary Rural Development Bank Ltd. (CERUDEB) represents the largest single microlender in Uganda. It was established in the 1980s on the initiative of the Ugandan National Council of Lay Apostolate for promoting the provision of appropriate financial services to the rural population of Uganda. In 1983 the Centenary Rural Development Trust was registered as a financial institution and in 1986 the institution started its operations. Finally, in 1993 the Trust was transformed into a commercial bank. Today, according to the MIX Market, CERUDEB serves over 550,000 Ugandan families, primarily in rural areas of the country. In addition, it counts 66,113 microborrowers and deals with a gross loan portfolio of over \$117 million.⁶⁹

In order to ensure the further growth of the microfinance sector, the Ugandan parliament passed an Act in 2003 which established a new type of institution, called microfinance deposit-taking institution (MDI). The objective

⁶⁷see Nannyonjo, 2004, p. 9

⁶⁸see <http://www.ugandainvest.com/Regulate.PDF>, availability date: May 21, 2008

⁶⁹see <http://www.microfinancegateway.com>, availability date: May, 5th, 2008

of that act was to transform the larger unregulated microfinance institutions into regulated financial institutions. In October 2004 FINCA Uganda was licensed as the first MDI. Subsequently, the Uganda Finance Trust became a licensed MDI in October 2005⁷⁰. According to the CGAP Focus Note No. 33 only four institutions have applied and qualified themselves for the program so far. Those MFIs which are still unregulated will not be allowed to take deposits from the public and are not recognized by the Association of the Micro Finance Institutions of Uganda (AMFIU)⁷¹.

Most MFIs provide two categories of financial products, namely credit and savings, and call on their clients to repay their loans in weekly installments consisting of principal and interest. This loan repayment structure is better adapted to clients who are involved in trade than to clients who are involved in agriculture. The reason for that is very simple: Since agricultural work force do not produce regular income streams they have problems to ensure weekly repayment capacities.

The most frequently applied lending methode in Uganda is group lending in the form of a mixture of solidarity groups with traditional village banking. Many MFIs require their clients to deposit either compulsory savings or Loan Insurance Funds or often seek a certain percentage of the loan. Thereby, MFIs are trying to protect themselves against high risk borrowers. Subsequently these compulsory savings are "locked-in" and not made available to the clients until they fully repay their micro loans⁷².

Recent surveys on MFIs in Uganda have established that MFIs have a high concentration in the central region (33%) followed by the east (23%), the southwest (19%), the north (14%) and the western region (11%). The

⁷⁰see <http://www.capacity.org>, availabilty date: May, 5th, 2008

⁷¹see Nannyonjo, 2004, p. 18

⁷²see Ledgerwood, 2002, p. 2

Republic of Uganda traces back the high concentration of MFIs in the central region by the high rate of economic activity there. The low concentration of MFIs in the north and west regions is explained by the high crime rate in some parts of these regions which has a negative effect on the economy in these areas. In addition, it has been observed that the number of people provided with MFIs' financial services is still very low. Only 0,9% of Uganda's population utilize these services, which corresponds to 196,561 clients. This percentage represents about 2% of the population that is living below the poverty line⁷³.

7.2 Credit Rationing

Access to credit is of crucial importance from a consumption and an investment perspective, whereas the availability of credit from formal credit sources is fairly constrained. Currently, 80% of the people in Uganda have no access to formal financial services⁷⁴. Therefore, credit-constrained Ugandans are forced to turn to the informal financial sector, which is made up of friends, relatives, community funds, co-operative credit societies, Non-Government Organizations (NGOs), money lenders, commercial firms or government agencies⁷⁵.

Let us take a closer look on credit rationing in the financial banking system of Uganda. According to the study of Okurut, Schoombee and Berg credit is constrained, particularly that offered by formal credit sources. The dataset of the Uganda National Household survey 1999/2000 points out that less than 10% of the grown up had applied for credit in the last twelve months and fewer than 5% had applied for bank credits. These quotes are very

⁷³see The Republic of Uganda, 2004, p. 34

⁷⁴see Ledgerwood, 2002, p. 22

⁷⁵see Okurut/Schoombee/Berg, 2004, p. 487

characteristic for the situation on the Ugandan formal banking sector. Both, access to banks and the prevailing credit criteria of banks have eliminated the formal banking sector as a potential source of credit for many borrowers. This fact implies that there still exists a large unmet need for credit services. Finally the survey showed, that 44% of the Ugandan people who did not apply for bank credits stated that they did not really need such credits.

By analyzing Ugandan lenders' credit rationing behavior Okurut, Schombee and Berg found out that socio-economic factors have a big influence on whether credit is applied for, on the amount applied for, on the amount of credit provided and credit rationed. They discovered that men are in a better position than women when they apply for credit. Men's probability of being credit rationed is reduced because they are seen as more creditworthy since they possess control over household resources. In other words, a gender discrimination against women is prevalent in Uganda. In addition, asset values are decisive for the credit allocation since assets are a measure of creditworthiness. This means that borrowers with more assets are less likely to be credit rationed. Also age has a negative effect on the credit rationing probability since older persons are rated as more creditworthy than younger. Furthermore, being an urban resident reduces the credit rationing probability. The reason is the fact that urban households have a more diverse income base compared to rural households. Finally, also borrowers' regional location is decisive. That means, that potential borrowers from the northern region of Uganda are more likely to be credit rationed than borrowers of other parts. The only factor that lowers the probability of credit rationing in the urban sector is land size. Land in urban areas has a higher value compared to land in rural areas, which means that land in the urban area represents a good collateral.

In principle, credit supply is determined by the lenders' perception of borrowers' creditworthiness, that is whether they are able to repay the loan or not. The scarcity of credit is caused by the rationing of credit supply to just over 56% by banks and informal lenders. Knowing that, it is surprising that the majority of people who apply for credit indeed obtain credit. Figure 6 shows that in total only 11.4% are rationed in the informal sector and in the formal sector only 19.1% are rationed.

Source of credit	Rationing Status			Total
	Totally rationed (applied, but received no credit)	Partly rationed (received portion of what was applied for)	Not rationed (received full amount applied for)	
Informal	226	265	1 499	1 990
	11.4%	13.3%	75.3%	100%
Formal	20	24	61	105
	19.1%	22.9%	58.1%	100%
Total	246	289	1 560	2 095
	11.7%	13.8%	74.5%	100%

Figure 6: Degree of Credit Rationing in Uganda

Source: Okurut/Schombee/Berg, 2004, p. 20

A possible reason why 74,5% of the people are not rationed may be the fact that people from rural areas, who are unlikely to obtain credit, do not apply. In other words, credit rationing takes place by self-selection through the borrowers. Another explanation may be that almost everyone who seeks credit is in fact able to obtain it, whereby risky borrowers may be credit constrained through costs and conditions⁷⁶.

7.2.1 Interest Rate Ceilings

During the financial sector reform in the 1980s many developing countries liberalized their interest rates. However, a number of developing countries

⁷⁶see Okurut/Schombee/Berg, 2005, p. 21

still maintained some sort of interest rate ceiling. Nowadays most of the interest rate ceilings are not oriented specifically toward microfinance but they still have a significant impact on the microfinance sector when they are set too low.

The fact, that in some countries a number of MFIs charge interest rates higher than commercial and state banks have forced governments to consider or impose interest rate ceilings⁷⁷. In the case of Uganda the government imposed an interest rate ceiling which the MFIs have to follow. According to the Ugandan newspaper, New Vision Kampala, the interest rates are set at or below inflation. Currently MFIs in Uganda lend at interest rates between 25 to 30 percent.

Despite good intentions, interest rate ceilings tend to reduce the supply of microcredit since it complicates new MFIs' entry into the industry and makes it difficult for existing ones to stay in business as The Consultative Group to Assist the Poor (CGAP) reports. Uganda's President, Yoweri Museveni, criticized the "high interest rates" which MFIs charge and proposed that government money should not be invested in MFIs with high interest rates. In addition, he made clear that the aim of microfinance should be to advance the productivity of the rural poor rather than generating profit⁷⁸.

"In 1999, the government of Uganda recognized microfinance "as a line of business", reports the CGAP, with interest rates set at market levels. The recognition followed the failure of its 1998 subsidized microloan scheme, Entendikwa, in which \$193,000 was repaid out of loans totaling \$5.1 million⁷⁹".

⁷⁷see CGAP Occasional Paper, 2004, p. 8

⁷⁸<http://microcapitalmonitor.com/cblog/index.php?/archives/322-Ugandan-President-Attacks-High-Interest-Rates-of-Microfinance-Institutions.html>, availability date: June 18, 2008

⁷⁹Article Homepage, 2006

7.2.2 Interest Rates and Competition

According to the Ugandan Ministry of Finance, the interest rates charged by MFIs are relatively high, ranging between 22% - 48% per annum and 2% - 5% per month. This is because MFIs must cover operational and financial costs in order to achieve the objectives of a sustainable and growing microfinance industry. Also the fact that the industry faces a relatively high credit risk and low levels of competition are responsible for high interest rates the borrowers are charged with⁸⁰.

However, according to the Association of Microfinance Institutions of Uganda (AMFIU), nominal interest rates charged by the Ugandan MFIs have declined a little in recent years, from about 5% a month prior to 2000 to around 3% a month currently. Moreover, some are shifting from a flat rate to a declining balance as a basis for charges. The reason for that trend may be rooted in increasing scale, efficiency of and competition between MFIs.

The comparison of microfinance institution and commercial bank interest rates between 1999 and 2004 shows that those of MFIs became about 10% less expensive. Furthermore, all questioned MFIs are convinced that microcredit rates will continuously go down over the next five years. They expect a reduction in microcredit rates from an average effective rate of around 50% to below 40%. Some market participants even expected them to fall below 30%⁸¹.

In recent years the microfinance sector has become more competitive, whereby the microcredit market of Uganda counts as one of the most competitive in the world. It is growing very rapidly, contains a relatively large number of small MFIs and there are still new firms entering the market. Ac-

⁸⁰see The Republic of Uganda, 2004/5, p. 35

⁸¹see CGAP Focus Note 33, 2006, p. 6

cording to Uganda's local MFIs, they pay close attention to each other's actions and regularly assemble competitive information about each other's product offering. This course of action influences their product design and in some cases their pricing decisions. Finally micro credit providers announced that competition has intensified during the last three years and that the trend is likely to be continued⁸².

⁸²see CGAP Focus Note 33, 2006, p. 4

8 Conclusion

Since Muhammad Yunus (Bangladesh) was awarded the Nobel Peace Prize, for his efforts to create economic and social development in developing countries in 2006, the microcredit movement came back into the main focus of public interest.

Microfinance, which describes a combination of loans, investment opportunities, insurance options and other financial services, is seen as a powerful instrument of poverty reduction. It has been demonstrated, that microfinance is an instrument of self empowerment which enables the poor to build up enterprises and generate job opportunities. Already very small size loans, often less than \$100, are sufficient for helping the poor to work their own way out of poverty. Especially women benefit from microfinance loans since it contributes to an improvement of women's roles in society when they are responsible for loans and for managing savings.

Nevertheless, the question remains whether microfinance programs really contribute to a lasting poverty reduction? And do they really lead to strong and flourishing local economies? The opinions of microfinance experts differ. Microcredit advocates see these programs as a solution to poverty reduction. They argue that poor people are given the chance to generate their own income by using borrowers' funds. Moreover, borrowers are able to build up positive credit records which increases their loan sizes and enables them to make bigger investments. Mainly the position of women is strengthened by microfinance since they often get involved into commercial economic activities for the first time. By giving them more control over household assets and resources, they are enabled to set up businesses and allowed to earn money in societies where they face religious and social barriers⁸³.

⁸³see Article Feiner, 2006

However, critics believe that the microfinance industry has come to a crossroad. They believe, in order to bring microfinance closer to its goal of sustainability and poverty reduction on a massive scale, microfinance has to lower its dependence on donor capital and intensify its access to the private sector capital⁸⁴.

At the moment, economic data about microfinance is hard to obtain, unreliable or little transparent. The MIX Market, which is a global microfinance marketplace, is trying to make the microfinance sector more transparent by collecting data and making them accessible. By advancing transparency, accountability and increased disclosure standards, the MIX Market attempts to attract more publicly and commercially oriented investors.

Up to now many achievements concerning the improvement of poor peoples' lives have already been reached in developing countries with the help of microfinance instruments. There are still idle capacities which are waiting to be exploited in the future. By learning how to deal with banking policy, microfinance institutions probably will be able to develop to formal financial institutions, in other words banks.

⁸⁴see Sousa-Shields, p. 1

References

- [1] Kumar Aniket. Sequential group lending with moral hazard, June 2003.
- [2] Patrick Bolton and Howard Rosenthal, editors. *Credit Markets for the Poor*. Russell Sage Foundation, 2005.
- [3] Prabal Roy Chowdhury. Group-lending: Sequential financing, lender monitoring and joint liability. *Journal of Development Economics*, 77:415–439, 2005.
- [4] Beatriz Armendáriz de Aghion and Jonathan Morduch. *The Economics of Microfinance*. The MIT Press Cambridge, 2005.
- [5] Ray Debraj. *Development Economics*. Princeton University Press, 1998.
- [6] Ann Duval. The impact of interest rate ceilings on microfinance. Technical Report 18, The Consultative Group to Assist the Poor (CGAP), May 2004.
- [7] Susan F. Feiner and Drucilla K. Baker. Microcredit and women’s poverty, December 2006. Dollars and Sense: The Magazine of Economic Justice.
- [8] Nimal A. Fernando. Understanding and dealing with high interest rates on microcredit. Asian Development Bank, May 2006.
- [9] Maitreesh Ghatak. Group lending, local information and peer selection. *Journal of Development Economics*, 60:27–50, 1999.
- [10] Maitreesh Ghatak. Screening by the company you keep: Joint liability lending and the peer selection effect. *The Economic Journal*, 110:601–631, July 2000.

- [11] Maitreesh Ghatak. Exploiting social networks to alleviate credit market failures: On the endogenous selection of peer groups in microfinance programs. Technical report, London School of Economics, November 2002.
- [12] Ruth P. Goodwin-Groen. Making sense of microcredit interest rates. Technical Report 6, The Consultative Group to Assist the Poor (CGAP), September 2002.
- [13] Stuart I. Greenbaum and Anjan V. Thakor, editors. *Contemporary Financial Intermediation*. The Dryden Press, 1995.
- [14] Joel M. Guttman. Assortative matching, adverse selection, and group lending. *Journal of Development Economics*, 2007.
- [15] Birgit Helms and Xavier Reille. Interest rate ceilings and microfinance: The story so far. Technical Report 9, The Consultative Group to Assist the Poor (CGAP), September 2004.
- [16] Karla Hoff and Joseph E. Stiglitz. Imperfect information and rural credit markets - puzzles and policy perspectives. *The World Bank Economic Review*, 4(3):235–250, 1990.
- [17] Aidan Hollis and Arthur Sweetmanb. The life-cycle of a microfinance institution: The irish loan funds. *Journal of Economic Behavior & Organization*, 46(3):291–311, 2001.
- [18] Jameel Jaffer. Microfinance and the mechanics of solidarity lending: Improving access to credit through innovations in contract structures. Technical Report 254, Harvard Law School, 1999.

- [19] Katarina Kahlmann and Fredrik Odeen. Credit rationing in microfinance, November 2005. Stockholm School of Economics.
- [20] Alexander S. Kritikos and Denitsa Vigenina. Key factors of joint-liability loan contracts an empirical analysis. *KYKLOS*, 58(2):213–238, 2005.
- [21] Maurice Kugler and Rossella Oppes. Collateral and risk sharing in group lending: Evidence from an urban microcredit program. Technical report, School of Social Sciences, University of Southampton, April 2005.
- [22] Joanna Ledgerwood, Deborah Burand, and Gabriela Braun. The micro deposit-taking institutions bill 2002. Technical report, Bank of Uganda, November 2002.
- [23] Malgosia Madajewicz. Joint liability versus individual liability in credit contracts. Technical report, Columbia University, May 2004.
- [24] Ingrid Matthäus-Maier and J.D. von Pischke, editors. *Microfinance Investment Funds*. Springer, 2006.
- [25] Craig McIntosh and Bruce Wydick. Competition and microfinance. *The Journal of Development Economics*, 78:271–298, 2005.
- [26] MicroCapital. Uganda to cap interest rates charged by microfinance institutions. Technical report, MicroCapital, September 2006.
- [27] Paul Mpuga. Demand for credit in rural uganda: Who cares for the peasants? Technical report, Center for the Study of African Economies, March 2004. A paper presented at the Conference on Growth, Poverty Reduction and Human Development in Africa.

- [28] Justine Nannyonjo and James Nsubuga. Recognising the role of micro finance institutions in uganda. Working Paper 1, Bank of Uganda, February 2004.
- [29] Luka Jovita Okuma. *The Microfinance Industry in Uganda: sustainability, outreach and regulation*. PhD thesis, University of Stellenbosch, December 2007.
- [30] Nathan Okurut, Andrie Schoombee, and Servaas van der Berg. Credit demand and credit rationing in the informal financial sector in uganda. Technical report, Makerere University and University of Stellenbosch, October 2004.
- [31] David Porteous. Competition and microcredit interest rates. Technical Report 33, The Consultative Group to Assist the Poor (CGAP), February 2006.
- [32] Ashok S. Rai and Tomas Sjöström. Is Grameen lending efficient? repayment incentives and insurance in village economies. *The Review of Economic Studies*, 71(1):217–234, 2004.
- [33] Richard Rosenberg. Microcredit interest rate, November 2002. published by Consultive Group to assist the Poor, Occasional Paper No. 1.
- [34] Loïc Sadoulet. Incorporating insurance provisions in microfinance contracts. Working Paper 56, WIDER, World Institute for Development Economics Research, June 2002.
- [35] Loïc Sadoulet and Seth B. Carpenter. Endogenous matching and risk heterogeneity: Evidence on microcredit group formation in guatemala. Technical report, Free University of Brussel, March 2001.

- [36] Loïc Sadoulet and Seth B. Carpenter. Reputation as insurance? extending the range of financial services for the poor. Technical report, Free University of Brussel, January 2003.
- [37] Hans Dieter Seibel. Does history matter? the old and the new world of microfinance in europe and asia, October 2005. From Moneylenders to Microfinance.
- [38] Joseph E. Stiglitz. Peer monitoring and credit markets. *World Bank Economic Review*, 4(3):351–366, September 1990.
- [39] Joseph E. Stiglitz and Andrew Weiss. Credit rationing in markets with imperfect information. *The American Economic Review*, 71(3):393–410, 1981.
- [40] Gwendolyn Alexander Tedeschi. Here today, gone tomorrow: Can dynamic incentives make microfinance more flexible? *Journal of Development Economics*, 80:84–105, 2006.

Websources

<http://www.grameen-info.org/bank/cds.html>

<http://www.grameen-info.org/bank/bcycle.html>

<http://www.cgap.org/p/site/c/>

<http://www.microfinancegateway.com>

<http://www.capacity.org>

http://depts.washington.edu/mfinance/ru/curriculum/docs/55_pricing.pdf

<http://www.ugandainvest.com/Regulate.PDF>

<http://www.unCDF.org>

<http://www.santafe.edu/education/reu/2003/files/goldberg.pdf>

<http://www.cia.gov/library/publications/the-world-factbook/geos/ug.html>

<http://www.gdrc.org/icm/grameen-article4.html>

<http://microcapitalmonitor.com/cblog/index.php?/archives/322-Ugandan-President-Attacks-High-Interest-Rates-of-Microfinance-Institutions.html>

Appendix

A) Abstract

In this thesis I focus on the microfinance industry, which became an important component of the development strategy worldwide. I investigate the provision of low scale financial services to low-income people in developing countries, who had completely been excluded from the credit market until recently. First of all, I give a brief overview of the beginnings and the current situation of the microfinance sector in developed countries.

The main focus is on the modern microfinance movement which goes back to the founder of the Grameen Bank (Bangladesh), Muhammad Yunus. Different lending techniques, such as individual and joint liability contracts, will be discussed. In addition, possible extensions to microcredit contracts, which could improve the quality of financial services, will be shown.

The thesis is also concerned with several problems emerging on the financial market of developing countries. There credit markets have to deal with market failures, such as imperfect information and transaction costs in the lending process. These factors are responsible for the phenomena of credit rationing and high interest rates.

Finally, the thesis shows how the theoretical models of microfinance can be applied to developing countries, whereby the situation in Uganda serves as an example. The most frequently applied lending methods as well as diverse problems in relation to Uganda's formal and informal financial markets are investigated.

B) Kurzfassung

Diese Diplomarbeit beschäftigt sich mit der Mikrofinanzindustrie in den Entwicklungsländern. Im speziellen wird das Angebot von finanzwirtschaftlichen Dienstleistungen an einkommensschwache Haushalte sowie die daraus resultierenden Probleme untersucht.

Zunächst wird ein kurzer Überblick über die europäischen Anfänge sowie ein Einblick in die gegenwärtige Situation der Mikrofinanzindustrie in den Industrieländern geben. In weiterer Folge wird das Hauptaugenmerk auf die moderne Mikrofinanz-Bewegung gelegt, welche auf Muhammad Yunus den Gründer der Grameen Bank (Bangladesh) zurückgeht. Hierbei werden die von Mikrofinanzinstituten, an die Bedürfnisse einkommensschwacher Haushalte angepassten finanzwirtschaftlichen Produkte und Dienstleistungen untersucht. Zusätzlich werden mögliche Erweiterungen von Klein- und Kleinstkrediten, sprich Versicherungen, diskutiert. In weiterer Folge werden noch diverse Probleme der Mikrofinanzindustrie wie Kreditrationierung und hohe Zinsen behandelt.

Abschließend, wird anhand des ugandischen Finanzmarktes gezeigt, in wieweit die diversen Mikrofinanzprodukte und Methoden zur Anwendung kommen.

C) Curriculum Vitae

Personal Details:

Name: Heide Maria Schoerghofer
Address: Barnabitengasse 9/T 35, 1060 Wien
E-mail: heidi.schoerghofer@gmx.at
Citizenship: Austrian
Date of Birth: April 27, 1980



Education:

Since 2001 University of Vienna – Center for Business Studies
Field of study: International Business Administration
Areas of specialization: Banking and Logistics
Thesis: "Microfinance in Developing Countries"

1998 - 2000 Medizin at the University of Vienna

1990 - 1998 Bundesrealgymnasium Waidhofen/Ybbs

Experiences:

July 2007 Internship at Raiffeisenlandesbank Niederösterreich Wien

September - Foreign Exchange - Alcalá de Henares - Spain

February 2006 Facultad de Ciencias Económicas y Empresariales

July -	Internship at Lenze Ltd. - Bedford - UK
August 2005	Worked in the Purchasing and Sales team
Since 2001	Ingenieurbüro Sicherheitstechnisches Zentrum Schörghofer (part-time)

Languages:

German:	Mother Tongue
English:	Fluent
Spanish:	Intermediate