

**‘Do Donations Have an Effect on the Financial Performance of Microfinance Organisations?’**

**A panel data analysis on 121 microfinance organisations in South-East Asia**

Linda Driesen

Erasmus School of Economics

Master program ‘Economics of Markets, Organisations and Policy’

Supervisors: N. Zubanov & H. de Kruijk

**Abstract**

This research analyses the effect of donations received by microfinance organisations on their financial performance measured by portfolio at risk. The analysis is built on several channels through which donations can either be performance-enhancing or performance-decreasing. Empirically, the research tested the possible effect with several methods; standard dynamic OLS, dynamic time and institution fixed effects panel data OLS and with the help of a dynamic instrumental variable regression. The unique dataset, constructed from several sources like MIX market, does only show a weak link and does contain signs of an effect of donations on financial performance. More research is needed on a case-to-case basis to identify and proof the donations-performance link.

*JEL classification:* D02, D22, G11, G21, G32

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## **Preface**

Already as second-year bachelor student I was fascinated when I heard about the possibilities of microfinance. Although my curriculum vitae shows mostly affection with the commercial financial sector, my interest in the social face of finance has always been present. Engaging in voluntary work in this field will definitely be part of my future either in The Netherlands or elsewhere.

Last march I joined the AEclipse research trip to India, as part of the elective seminar ‘Trade & Growth’ taught by Professor Emami Namini. Deciding on what fellow student Marjolein Portman and I would research was easy, my interest in the field of microfinance was big enough to convince her of the relevance of this subject. After all impressions we got in India, the inspiring people we met, the helpful professors from Mumbai University and the Tata Institute of Social Sciences and the 25 experts from the Reserve Bank of India who were able to meet with us it was time to start writing. When our research-paper was finished my hunger for more knowledge in the field of microfinance had not disappeared. The choice to continue with this subject was a straightforward one.

As student of three different universities; Tilburg International School of Economics and Management, Corvinus University of Budapest and the Erasmus School of Economics I experienced many exciting moments. Ultimate experiences consist of my successful board year as promotional officer of the Economic Business weeks Tilburg 2011, my unforgettable exchange to Budapest, my work at Robeco and all the inspiring people I met. At this point my final academic work is done. My future lies in the financial sector. I am grateful for all great memories I obtained during my student life.

Logically I want to take this opportunity to thank my supervisor Nick Zubanov for his patience, critical and perfectionistic view, the challenges he gave me and the guidance during the writing of this thesis. Next to that I am happy to thank Marjolein for letting me continue our collective work and Frank, Anne, Daphne and Luciën for their critical reading and comments.

Lastly I would like to thank my parents for everything they did for me during my period as a student. Without their support, both financially and motivationally, this thesis would not have been completed.

I hope everyone will enjoy reading my thesis.

Linda Driesen

## 1. Introduction

As a Nobel prize winner, Milton Friedman, said years ago: *'The poor are left in poverty, not because they are lazy, but because they lack access to capital'*. In September 2000, The United Nations formulated eight millennium development goals (MDG) to end poverty by 2015. The MDGs focus on ending poverty and hunger, improving access to education, gender equality, child and maternal health, combating HIV/AIDS, creating environmental sustainability and global partnership to reach the goals. Microfinance influences several goals through different channels: poverty is alleviated by giving people the opportunity to set up a small business to generate income, with this income children can hopefully be sent to school and the gender equality improves as well, since microloans are mostly given to women. The year 2005 was the United Nations international year of microcredit, calling for more attention to this practice to alleviate poverty, empower women and improve access to finance. In The Netherlands Princess Maxima is ambassador of microfinance, as she is a special advisor to the United Nations Secretary-General on financial access.

Microfinance is a broad concept covering all kinds of financial services offered, mostly to low-income families in developing countries. It may contain credit services, micro insurances and deposits. Specific features that belong to microfinance are the targeting of women, the issuing of group-loans, the possibility to get a loan without collateral and the very small amounts of money considered. To illustrate, a poor farmer in Bangladesh can apply for, and receive, a microloan to buy seeds in order to be able to grow food in the later period or to buy cattle that will provide future income to the family. There are many microfinance organisations nowadays, and millions of borrowers. If one imagines that every borrower has a family with an average of four children, there are billions affected by microfinance. The database (MIX) used in this thesis reports the following figures of microfinance organisations that contribute to the database (which is voluntary) for 2011: there are 815 microfinance institutions active in 86 countries. Together they serve 61.7 million active borrowers and 42.6 million active depositors with a total gross loan portfolio of 65.7 billion dollars and with average loans of 758 dollar per borrower. These constantly increasing numbers of active clients catch (and caught) a lot of

attention of the academic world. Especially professor J. Morduch (New York University) contributed to the knowledge and literature extensively.

Many papers argue the need for financially sustainable microfinance organisations (Balkenhol (2007), Conning (1999), Cull et al. (2009), Kremer and Miguel (2007), Morduch (1998,1999 and 2000)). The assumption is that sustainable financial institutions are more likely to continue their business in the longer term than organisations funded by outside donors. Furthermore donors' money is scarce. This thesis focuses on the effect of donations on the efficiency of organisations, measured by their percentage of non-performing loans (portfolio at risk of more than 30 days). This research will be conducted using a panel-dataset of microfinance organisations in South-East Asia. The central research question is as follows:

***Do Donations Have an Effect on the Financial Performance of Microfinance Organisations?***

The relevance of this thesis is twofold; both scientific and social. The scientific contribution this thesis delivers lies in the construction of a new, extremely rich dataset which can be used for further research. Next to that in the existing literature efficiency is measured by profit or outreach, this research takes a more financial and operational perspective by using the portfolio at risk. No recent study has been done in this field including the latest data.

The social influence I hope to have with my thesis lies in the policy implications that can be drawn from my conclusions. I hope to give better insight in the effect of donations and to be able to advocate for, or against the use of this form of funding for microfinance institutions. Furthermore, apart from financial implications for donors, it is about the billions of poor people that are affected by microfinance, thereby making it socially relevant as well.

The features of microfinance and the channels through which donations affect the portfolio at risk are discussed in the theoretical framework. Further on, the methods and dataset are

explained followed by the descriptive statistics and the econometric framework. In the final part the findings are discussed and conclusions are drawn.

The findings in this work show that there is a small, performance enhancing, economically insignificant effect of donations on financial performance. In all specifications ran signs can be found of this link. Since an economic insignificant result is found it is hard to draw real life implications from this research. More work should be done on a case-by-case basis and to improve the data before a generalizable pattern may be identified.

## 2. Microfinance

In this section the history, phases and features of the microfinance industry will be elaborated upon.

### *2.1 Microfinance and mainstream finance*

Financial institutions match borrowers to lenders. In that, microfinance institutions fill a niche market of mainstream finance. Essentially, financial markets fulfil an essential economic function of channelling funds from households, firms and governments that have saved surplus funds to those that have a shortage. This most common form of finance through financial intermediaries, called ‘indirect finance’, is more important than direct finance via stock markets in terms of the number of clients.

Financial intermediaries thank their existence to their ability to reduce information and transaction costs and their facilitating of trade, diversification and management of risk.

Microfinance institutions belong to the landscape of central and commercial banks. Central banks, among other things, accept deposits and give out loans to commercial banks, which do the same towards customers. Important features of this sector are the reduction of transaction costs by exploiting economies of scale and the necessity to deal with asymmetric information problems. Commercial banks solve the adverse selection problem of borrowers by the implementation of collateral into the loan contract. This collateral is property, like a house or car, which is promised to the lender in case the borrower defaults. The collateral also solves the moral hazard problem<sup>1</sup>.

### *2.2 The background of microfinance*

Economics professor Dr. Muhammed Yunus introduced microfinance to the world in the 1970s. With the simple idea that poor people need credit to escape poverty, and not only donations

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<sup>1</sup> Moral hazard is a commonly known information asymmetry problem in economic theory. It explains the situation in which an agent, ex post, behaves differently than agreed on with the principal. In this particular case, moral hazard exists because the lender can behave differently (i.e. not in the interest of the bank) after a loan is issued thereby increasing the risk for the bank.

through NGO's, he created the Grameen Rural Bank in 1983. In 2006 the Grameen Bank, under management of Prof. Dr. Yunus, was awarded the Nobel Peace Prize.

In the years after the introduction of micro credit the sector adopted the full line of services now called microfinance. *In Asia alone*, the number of institutions increased rapidly to 759, now serving 9.2 million active borrowers with a gross outstanding loan portfolio of 5.24 billion US Dollars in 2011. On average, repayment rates show good figures<sup>2</sup>. The reasons for these high repayment rates are various. First of all, the structure of repayment is different from commercial banking since repayment (in instalments) often starts quickly after issuance. Moreover, because of the joint-liability structure seen in many organisations, repayment rates are also high due to peer-monitoring (Ghatak 1999, Islam 1995) and social ties (Zeller 1998). Furthermore the clients of these microfinance institutions were, and still are, willing to pay significantly higher interest rates<sup>3</sup> than in the conventional financial sector, to compensate for their lack of collateral.

In the 1990s, microfinance organisations started to restructure their operations to be able to not only attract private and government grants, but also to make themselves more attractive to outside investors. During these years the enthusiasm for promoting microfinance as a strategy for poverty alleviation grew. In 2006, the Microfinance Summit Campaign Report estimated that there are more than 3000 institutions, serving more than 100 million poor people in developing countries worldwide (Microfinance Summit Campaign 2006).

Today, major banks like Deutsche Bank invest in microfinance. With an eye to the United Nations' Millennium Development Goals, the microfinance sector is internationally regarded as an essential element of the financial system.

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<sup>2</sup> The Grameen bank reports rates between 95 and 98 percent (Grameen Bank 2012), these rates are not uncommon.

<sup>3</sup> For the same Grameen Bank 'average nominal on-lending interest rates' in the period from 1985 – 1996 are 15.9% according to Morduch (2000) based on data from various years of the Grameen Bank Annual Report.



### *2.3 Four Phases*

Broadly speaking, the existence of microfinance can be categorised in four phases as Zaman (Worldbank, 2004) evaluated for Bangladesh.

The late 1970s can be categorised as the pioneer stage, with only a small number of institutions that were completely financed by external grants, donors and NGO's. Moreover, since the independence-wars of the several Asian countries were over, there were opportunities for NGO movements that focused on relief and rehabilitation with an emphasis on community development (Zaman 2004). Also the Grameen Bank was founded in this early stage.

The experimental phase in the microfinance sector began in the 1980s. Several organisations experimented with different products like group lending. Group lending became a successful feature because of the higher incentives for the individuals and peer monitoring. In the following years microfinance institutions rapidly expanded.

From the mid-1990s, onwards institutions offered more than just credit to poor households, like insurances and deposit accounts. Next to that many organisations also have educational and health programs. In this phase microfinance can be profitable and attract investors next to donations. In the mean time, some parties may engage in microfinance for other reasons than alleviating poverty only, namely making profit. This shift from charity-based institutions to financially sound companies can shift the target group from poor to the more economically active residents of developing countries.

### *2.4 Features of microfinance*

Microfinance institutions often target women. The organisations in our dataset report that an average of 83% of the total amount of borrowers is female. In research by Jianakoplos and Bernasek (1998), evidence is found that women are more risk averse than men. This makes targeting women as a microfinance organisation relatively safer than serving men. Furthermore, according to the WorldBank, UNDP and many other sources, evidence is mounting that improved gender equality is a critical component of any development strategy. Mayoux (2001) wrote *'by giving women access to working capital and training, microfinance helps mobilize women's productive capacity to alleviate poverty and maximize economic output. In this case,*

women's entitlement to financial services, development aid, and equal rights rests primarily on their potential contribution to society rather than on their intrinsic rights as human beings and members of that society.' Furthermore, women spend more of their income on the household, indicating an improvement for the whole family once a woman is (being) supported. The UNCDF (1995) says: *'Women's success benefits more than one person. Several institutions confirmed the well-documented fact that women are more likely than men to spend their profit on household and family needs. Assisting women therefore generates a multiplier effect that enlarges the impact of institutions' activities'*. A positive side effect of targeting women is that it significantly aids female empowerment. However, for the institutions women might also be easier to monitor and enforced to repay their loans, because women are less mobile since they have to look after their children.

Next to targeting women, group-lending, or the so-called joint-liability contract, is one of the most well known implementations of microfinance. These contracts have many benefits. Members can help solve problems an outside lender faces: agency costs. Moreover peer-monitoring proved its theoretical benefits as well (Ghatak 1999, Islam 1995 and Zeller 1999). Since the risk for the institutions decreases by using joint-liability contracts it may also lead to lower interest rates creating a win-win situation. Research on the best-practices for microfinance institutions regarding joint-liability contracts is done by Giné et al. (2010). They found that: *'Cutting off defaulting borrowers from access to future loans powerfully reduces risky project choice, even when lenders use individual-liability contracts'*. This finding indicates that joint-liability is not the only well-functioning mechanism for microfinance institutions. However, they also found that group-based lending may support high repayment rates when borrowers engage in risky, but profitable, projects, while in the individual-liability setting sometimes insufficient risk (for the investment to be socially optimal) is taken. When the authors kept project choices constant, the group-based-contract mechanism reduced default since group members bail each other out. From the borrowers' point-of-view they found that if risk-averse borrowers could sort into groups themselves they collaborate with other risk-averse borrowers. Moreover, it is found in their experiment, that when risk-averse borrowers are forced

into groups with less risk-averse borrowers, they tend to make riskier choices themselves as well, as a response to the moral-hazard problem.

Lastly, BRI (a microfinance institution in Indonesia) was the first to introduce non-traditional forms of collateral. This differed from the commercial collateral that requires collateral to have a resale value equal to the size of the loan in the sense that it uses ‘notional value’ of an item. This item can be any item that is important to the household, independent of its market value. Examples are cattle or unsecured land.

### *2.5 Microfinance and the World Bank*

The World Bank is a global organisation consisting of five agencies that all aim fighting poverty worldwide<sup>4</sup>. Part of the World Bank's agenda is to ease access to finance. According to their website; ‘*Access to financial services has become an important element of social fund and community driven development projects because the poor must have continuous and permanent access to strong, stable financial systems in order to build their family's economic security*’.

Through the social funds the World Bank supports the microfinance industry to increase the number of people that have access to finance. Therefore the World Bank is one of the donors in the microfinance field. Moreover, because of the interest in, and commitment to, the field, much research is done by the World Bank.

In the light of this research the extraordinary possibility arose to conduct an interview with Jasmina Glisovic from GCAP (Global Call to Action against Poverty), which is an NGO related to the World Bank. Jasmina Glisovic is a microfinance specialist, with special expertise in the field of donors and investors. The transcript of this interview can be found in appendix III. The main insights she gave were that there are, roughly speaking, three types of donors; bilateral agencies paid by governments, foundations (like the Mastercard Foundation or the Bill&Melinda Gates Foundation) and organisations such as the World Bank or the Asian Development Bank. Ten years ago, donations were mainly given with the purpose of on-

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<sup>4</sup> World Bank website 2012. The five agencies are: International Bank for Reconstruction and Development, International Development Agency, International Finance Corporation, Multilateral Investment Guarantee Agency and International Centre for Settlement of Investment Disputes.

lending, while nowadays donations are mainly given with a special, pre-announced purpose like investing in computer systems or facilitating technical assistance. Regarding the conditions, as stated in donor and organisations contracts, that come with donations she thought one should be very careful not to generalise. Conditions mainly depend on donors' motivation to donate, and are very case specific. She gave some examples of conditions such as; organisations that have performance based agreements, donors that force organisations not to invest in alcohol-producers or sellers, polluting firms etc. and donors that make organisations create a performance report every six months.

The monitoring of the microfinance organisations is done differently depending on the donors. Some only require 'light' reporting, while others even send their own consultants to the receiving organisations.

### 3. Theoretical Framework

This section consists of two parts. In the first part it is explained why there is a need for microfinance. The second part reviews theories predicting the relationship between donations and financial performance of microfinance institutions.

#### *3.1 Why is there need for microfinance?*

Not everyone has access to mainstream finance. Access to finance has several dimensions. Firstly rural inhabitants may not have a bank branch close by. Furthermore, commercial banks (which are for-profit) need to perform due diligence in order to generate profits. The poor clientele is not profitable enough for these commercial banks. Next to that, poor people usually do not have access to finance, because they do not have acceptable collateral and/or because the screening, monitoring and enforcement costs are too high for commercial banks to make lending to these people profitable (Hermes and Lensink 2005, Morduch 2000). Microfinance institutions focus on this niche market and can financially include potential clients in several ways; by opening a local branch, by offering access to finance via mobile phones, by having regular visits from their employees or by using the extensive existing network of for example post offices.

Moreover, poor people face a problem in mainstream finance, since they do not (officially<sup>5</sup>) own any collateral. Furthermore, charges of commercial for financial services are high for the population of developing countries, especially when compared to the national per capita GDP of the poorest quintile<sup>6</sup>. Also relatively high minimum balances constitute financial barriers for poor people that are too high. Microfinance institutions charge lower or zero tariffs and require more affordable or even minimum balances. Lastly, mainstream financial institutions do not

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<sup>5</sup> Developing countries might lack an extensive juridical framework that gives out trustable documentation required by commercial banks.

<sup>6</sup> For example (WorldBank data): in Bangladesh in 2010 8.9% of national income accrued to the poorest quintile, GDP per capita in the same year was 675 Dollar. The average per capita GDP of the poorest quintile therefore is  $8.9\% * 675 * 5 = 300,375$  Dollar. The cost of having a bank account in a commercial bank (HSBC) in 2012 is for free, however making use of services is not. An example, for a payment to another bank, HSBC charges 800 Bangladesh Taka (9.76 USD) each time, and only for applying for a loan a client pays 1500 Bangladesh Taka (18.31 USD). These amounts are unaffordable for a Bangladeshi who is part of the poorest quintile.

focus on poor people's needs and therefore lack appropriate products. Microfinance institutions step in this niche market by differentiating products; such as small loans and specialised insurance products.

### *3.2 Microfinance to reduce poverty*

According to the World Bank: *'Poverty is more than not having enough money, poverty is hunger. Poverty is lack of shelter. Poverty is being sick and not being able to see a doctor. Poverty is not having access to school and not knowing how to read. Poverty is not having a job, is a fear for the future and living one day at a time'*. Poverty is a widespread problem and extremely context specific. Poverty is unique in every single political, social, economic, environmental and cultural situation.

Important factors for economic development are employment, money and opportunities. Microfinance focuses on these three factors simultaneously. The improved access to financial services, like savings, credit, insurance and money transfer, contributes to the personal development of the individual (and their household) in developing countries. For the institutions it is important to be sustainable (Morduch 2000, Woller et al. 1999), hereby they guarantee their existence and services for the future, increasing incentives for clients to repay their loans and create a bigger outreach that benefits their poor clients. Sustainable institutions, according to the literature, are institutions that are financially self-sufficient.

### **3.3 Sources of finance (and its link to efficiency)**

This part will investigate and elaborate on the sources of funding for microfinance institutions. According to Greuning et al. (1998) in their World Bank study there are several types of institutions. There are organisations that are only funded by donations and grants, while others accept, next to the donations and grants, (voluntary) deposits as well. The last non-governmental organisational form issues instruments to generate funds through wholesale deposits substitutes like commercial paper, large-value certificates of deposits or investment placement notes. Efficiency of organisations can depend on the funding structure. There are

various reasons for this relationship. First, if an organisation is completely dependent on credits and loans that it needs to pay back, the money needs to be spent as well as possible to ensure the pay-back (especially with relationship banking<sup>7</sup>). On the opposite side, an organisation funded only by donations and grants might not be incentivised enough to use the money in the best available manner. Whether this is the case is the main subject of this thesis which focuses on the effects that donations have on the portfolio at risk for these microfinance organisations. In the next section the channels through which this effect might occur are explained.

### 3.4 Donations

A donation can be done in various forms e.g. it differs from giving blood to cash offerings. Donations are typically given for charitable purposes and/or to benefit a good cause. Donations may be direct (through cash) or indirect with in-kind assets, training or soft loans. This thesis focuses *only* on monetary donations. Donations are given as a gift without the obligation and expectation that the money will be returned. However, donations can come with a contract or with conditions on how the person or institution receiving the gift should use it. Depending on the extent to which donations are given without certain non-monetary obligations, it may be detrimental to the organisations rather than improving their financial soundness.

In this research the central question is: ‘Do donations have an effect on the financial performance of microfinance organisations?’ Only monetary donations will be considered.

The efficiency of an organisation will be measured by the amount of risk taken by the organisation, which in turn is measured as the portfolio at risk of more than 30 days. This variable is interesting because it has never been researched before, and it is one of the few performance measurements which are available.

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<sup>7</sup> Relationship banking, according to Boot (2002) occurs when banks develop close relationships with borrowers over time. ‘*Such proximity between the bank and the borrower has been shown to facilitate monitoring and screening and can overcome problems of asymmetric information and the incumbent bank creates a comparative advantage over de novo lenders.*’. The two most important drawbacks of this kind of banking are the soft-budget constraint and the hold-up problem.

In already existing literature there are several explanations given why and through which channels donations should have an effect on companies' efficiency. In this section these explanations will be elaborated upon starting with the performance-decreasing effects of donations and ending with performance enhancing explanations.

### 3.4.1 Performance decreasing channels

#### 3.4.1.1 Preferences

Microfinance organisations are managed by one or a few people. For microfinance organisations a constant relative risk aversion (CRRA) utility function is assumed. This assumption is logical for small organisations of this form as found by Chiappori and Paiella (2011) who succeeded in evaluating the existence of constant relative risk aversion using a panel-data research.

The CRRA utility-function is:

$$U(c) = \frac{c^{1-p}}{(1-p)}$$

The function exhibits CRRA with  $R(c) = p$

(Since first order derivate is:  $\frac{\partial U}{\partial c} = c^{-p}$  and the second order derivative:  $\frac{\partial^2 U}{\partial c^2} = -pc^{-p-1}$ ).

*What is the implication for the organisations of having a utility function of this form?* It makes organisations take more risk if their financial endowment increases. More risk in this case implies that organisations serve customers which they would not have considered serving before since the chances that the money will be paid back are lower. CRRA describes the following situation; when an agent has increased wealth, he spends relatively more of this wealth on riskier assets. So in turn, more money leads to an on average higher risk.

Donating is a way of funding that logically increases the amount of money within the organisations and therefore, given this utility function, the organisations will exhibit more risky behaviour. Constant relative risk aversion is such that the willingness to buy risky assets is higher when wealth increases.

Concluding, the evidence from Chiappori and Paiella shows that assuming a utility function which exhibits CRRA for microfinance institutions makes sense. Therefore a reason why



portfolio at risk might increase once donations increase can happen due to constant relative risk aversion.

#### *3.4.1.2 The status and limited investment opportunities*

According to Anheier (2000), we can distinguish various forms of non-profit organisations, namely; organised ones, private (non-government), non-profit-distributing, self-governing and voluntary organisations. The problem with this classification is that organisations can have bits and pieces of all these forms. Some organisations are extremely value/mission-based, others do not even use a single volunteer. Anheier states: *‘The management of non-profit organisations is often ill understood because we do not understand these organisations well, and it is frequently ill conceived because we operate from the wrong assumptions about how non-profit organisations function’*.

Microfinance organisations are mostly, and traditionally not-for-profit. The implication of being a non-profit organisation is that even if institutions have money left at the end of a period, they will not ‘take’ it out of the organisation, but they will reinvest the money. Officially, a non-profit organisation is an entity that uses surplus revenues to achieve its goals rather than to distribute them as profits or dividends (Drucker 1992). So, these non-profit organisations are allowed to generate surplus revenues, but they must be retained to achieve goals like expansion, self-preservation etc. This statement proves that if microfinance institutions get more money, either from donations or as surplus from their activities, they will reinvest it.

To illustrate, assume that in a world of perfect information one organisation can choose to invest in  $N$  projects. These projects are ranked according to their expected payoff, that is, the risk of the projects is taken into account. The organisation has a budget  $X$  at  $t=0$  and will therefore invest in the projects available until the complete budget is invested, starting with the highest expected payoff projects. At  $t=1$  the budget of the organisation is increased by an exogenous donor to  $X+1$ . The organisation has more money and will invest in more projects. Since the average risk of the extra project compared to  $t=0$  is higher, the total average risk that a borrower will default increases.

However, what happens when organisations do not have access to global investment opportunities or savings accounts, i.e. their investment opportunities are limited to a certain region, by a financial threshold or something else? If this is the case, an organisation will reinvest its surplus revenues into investment opportunities available. Going back to the example above one will find that again in this case, after ranking all projects, when there is more money available companies start investing in more risky projects increasing the average default risk of its portfolio.

How likely is this illustration that microfinance institutions have limited investment opportunities? Quite likely. It is common knowledge that these institutions work in small areas tied to regions. To illustrate, a moderately big, nationally operating bank in India, ‘City Union Bank’, in 2010 had an investment portfolio of almost 2 billion US Dollars<sup>8</sup>. Comparing this bank to the largest microfinance institution in India in the dataset, ‘SKS’, in 2010 the gross loan portfolio was less than 1 billion. Making the same comparison with an average microfinance institution in India, ‘KBSLAB’, we find that the gross loan portfolio was almost 20 million, 100 times smaller than the national ‘City Union Bank’. To access the international money markets for a microfinance institution is not easy, because of high fixed entry costs and other thresholds.

Another example: An institution operating in the north of India does not give loans to a project in the southern part, since it is hard to monitor the project over such a distance. Monitoring is an important feature of microfinance and makes the institutions look for opportunities within their scope of monitoring. This together makes it highly unlikely that the same North-Indian institution buys US government bonds. Concluding, here again, more money makes companies sponsor more investment opportunities, thereby increasing the average default risk.

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<sup>8</sup> City Union Bank (2011), ‘Annual Report’, India via [cityunionbank.com](http://cityunionbank.com)

Summing up, microfinance institutions must spend all of their investment budgets because of their non-profit status. The number of investment projects is limited by the market in which an organisation operates (hence, as the size of the budget increases more and more risk will be taken) and most institutions cannot realistically invest outside their local market, because their operations are still too small-scale. Next to that microfinance organisations often operate according to their ‘mission’. This mission keeps them from investing outside their area as well. Given the reasons mentioned before, more money increases the average risk of the available projects and thus the investment portfolio of organisations.

#### *3.4.1.3 The Soft Budget Constraint (SBC)*

The traditional theory of the soft budget constraint reflects a certain *social* relationship between the state and the organisation and was first covered by Kornai (1986). Literature on the SBC focuses mainly on the role of the state in transition economies. According to Kornai the effects of the SBC are various; the general price responsiveness of the firm declines, efficiency is negatively impacted, the entrepreneurial manner is lost and there is a moral hazard problem. Generally, the softer the budget constraint and the larger the sphere of the economy where the syndrome prevails, the more incompatibility occurs. Also Stiglitz (1994) wrote about the SBC. He said: ‘*SBCs may be contagious if lenders who expect official support grant more generous terms to their own clients than might otherwise occur, the resulting softening of incentives can spread quickly through the economy*’. The working of the SBC in practice is as follows: a company anticipates on getting extra funds in a later period when it needs it. Due to the possibility of a bail out the company takes too much risk because of decreased incentives.

What is the relation to microfinance? Many microfinance organisations are (partly) financed by donors. The common goal of microfinance is to ‘encourage the development of more inclusive financial sectors’ and there is a great commitment from funders to the sector (Diop 2006). According to Balkenhol (2007) the following theory holds with respect to the efficiency effects of subsidies to microfinance institutions: the SBC reduces the incentives of poorly performing microfinance institutions to work efficiently and to monitor their borrowers to ensure payback.

Moreover, donors face the *moral hazard* problem because of information asymmetries (the organisations have ex post information on where they invest the money).

Therefore donations can have a negative effect on the average default risk (thus increase it), because the organisations might anticipate a bail out in a later period. For example a newly founded organisation in war-ruined countries (like Somalia and Afghanistan etc) receives a lot of money to cover their start-up costs, but does this organisation keep up with its administration? Or does it anticipate on the politically instable region and the high importance worldwide that donors want to make a success of this organisation and will bail them out if necessary?

### **3.4.2 Performance enhancing channels**

#### *3.4.2.1 Donations with conditions*

Although donations seem to be ‘free money’ it is can be assumed with reason that donations come with certain rules and obligations, as also mentioned by Jasmina Glosivic from the World Bank. The exact contracts that donors have with the recipients of the available funds are case specific. However it is logical that those contracts involve performance targets, operating efficiency targets, monitoring and regular evaluation moments. Furthermore donors can help improve the development of financial infrastructure and human resources to increase the efficiency and quality of services in the long run (Hudon&Traca 2009). Balkenhol (2007) states that the extent of disincentives from subsidies depends on the intensity, entry point, dosage, timing and phasing-out of donations. Both papers suggest the positive effect of ‘smart subsidies’<sup>9</sup>. If microfinance organisations only get donations when they agree to improve performance, donations will have a positive (decreasing) effect on the non-performing loans.

The fact that donors to microfinance institutions are often international organisations or non-governmental organisations (NGO’s) funded by tax payers and other private donors makes the

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<sup>9</sup> ‘Smart subsidies’ are subsidies up to a certain intensity, suggesting that once subsidies are above this limited level, the efficiency-enhancing effects of the subsidies are likely to peter out (Hudon&Trace, Balkenhol). They maximize social benefits while minimizing distortions and misplaced targeting (Morduch 2006).

expectation of stricter monitoring weaker, because there is a double principle-agent problem<sup>10</sup> (Varian 1990). This double principle-agent problem arises because tax-payers cannot easily monitor international organisations or NGO's and these donors to microfinance institutions have a monitoring problem as well. So, international NGO's are agents themselves as well. This problem can be reduced by noting that there is competition among organisations to receive donations (Castaneda et al. (2007), Aldashey and Verdier (2008)), leading to an increased incentive to meet the targets of donors.

However these conditions, as Jasmina Glosivic said, do not necessarily target financial performance improvements, since some donors just want microfinance organisations to target women or not to serve polluting firms. This leads to organisations not giving out loans in the best economic practice alone, but also keeping the conditions of the donors in mind.

#### *3.4.2.2 Donations as a signal*

For organisations donations can work as an indicator of credibility as well. An organisation that receives donations may be more creditworthy than other organisations because there is more cash available. Morduch (2006) gives an example of a case in India where a private bank (ICICI) gave a capital infusion to a microfinance organisation (Share) after an NGO (Grameen Foundation) 'crowded in' and gave a guarantee of 8% of the loan. In this case, the subsidy in form of a guarantee helped attract commercial capital. This case shows that commercial capital and subsidies can be a complement rather than a substitute. The NGO in this case could signal to outsiders that the microfinance institution was worth investing in, which increases its creditworthiness. Commercial capital, contrary to donations, needs to be paid back. Receiving private investment (instead of only donations) therefore increases incentives to become more efficient and helps discipline microfinance organisations. Thus, it may be expected that if donations are a signal to attract more private investments the portfolio at risk will decrease.

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<sup>10</sup> The principle-agent theory addresses the problem asymmetric information when a principal that needs to motivate an agent to act on behalf of the principal.

### 3.4.3 Which effect dominates?

As discussed above, there are reasons to argue that donations may be performance enhancing to MFI, but may just as well be detrimental to it. We have seen that the outcome of donations depends on the shape of their utility functions, their status, the fact that investment opportunities are limited, the soft budget constraint, the conditions put to MFIs when receiving donations and the signalling effect.

But which effect dominates? The existing literature does not say much apart from Balkenhol (2007) and Hudon and Traca (2009) who discuss ‘smart subsidies’. However some statements can be made; many donations come with conditions. It is a straightforward expectation that minimum conditions exist regardless of the amount of donations. Hence, the existence of donations should have an immediate effect on the practise of microfinance organisations and thereby on the portfolio at risk. However, organisations that receive donations are subject to the soft-budget constraint problem. The sign of the effect of donations on financial efficiency (portfolio at risk of more than 30 days), however, is not known *a priori*.

Furthermore the signalling effect of donations and the constant relative risk aversion utility function together with the limited investment opportunities are contradictory. Where the signalling effect leads to more money (from private parties) and a lower expected portfolio at risk, the other two indicate that more money leads to a higher expected risk. In the limited investment opportunities argument we assume organisations to be able to perfectly rank all available applicants. It could be necessary to lessen this assumption, since perfect information does not exist. Donations can lead, through education or the improvements of financial infrastructure and computer systems, to a better evaluation of applicants. This improved screening leads to better repayment rates. Nevertheless, microfinance organisations still operate in small (rural) regions and are limited in their opportunities to invest. More money might lead organisations to expand to other villages which will decrease their systematic risk by diversifying the portfolio.

This theoretical part provided channels through which donations may have a link with the financial performance of organisations. These channels may have positive and negative effects on risk. The ambition of this research is to try to find a general pattern of correlation between donations and financial performance.

## 4. Data and methodology

This part of this research consists of two sections; the first describing the data used to conduct the research and the second explaining the methodology.

### 4.1 Data

This thesis is built upon a unique dataset constructed from several sources. Next to extensive e-mail communication, with both World Bank and the Bill & Melinda Gates foundation (as two major donors) and the microfinance organisations in the sample an interview was conducted with a microfinance expert from the World Bank. The major source of the dataset is the Microfinance Information Exchange (MIX), which is a non-profit organisation and is according to their website: *‘The premier source for objective, qualified and relevant microfinance performance data and analysis. Mix is committed to strengthening financial inclusion and the microfinance sector by promoting transparency. The database provides performance information on institutions, funders, networks and service providers. The total database consist of a coverage of approximately 2000 microfinance organisations around the world and provides instant access to financial and social performance information.’* De MIX website is publicly accessible. Using data from MIX implies a great strength of the sample, since the institutions have been selected based on their ability to deliver quality data (although the voluntariness of participation is a disadvantage). Because of this, the sample will be skewed towards institutions with sound financial objectives and profitability. The major limitation of the dataset is that it is all self-reported data. Other researches based on this database are Gonzalez and Rosenberg (2006) and Cull et al (2009). Next to the data from MIX, the websites of the organisations itself are used to find the year of foundation, the country of operations etc.

This constructed dataset is extremely rich. It consists out of 121 microfinance organisations (see appendix I) in South-East Asia, covering almost 285 million active borrowers and having a combined outstanding loan balance of 1.9 billion US Dollars in 2005. All organisations have seven or more years of observations mainly between 2000 and 2010. In total there are 1179 observations on 24 different variables, including information on the location of the organisations, the borrowers, loan officers, gross loan portfolio, portfolio at risk of more than 30



days and donations. Some organisations are relatively old, founded in 1950s or in the seventies when microfinance was first introduced; some are young and only started operating in 2003. The average age of the organisations in the sample is 16 years. The data consists of two organisations from Afghanistan, 21 from Bangladesh, eleven from Cambodia, one from China, 22 from India, eight from Indonesia, ten from Nepal, eleven from Pakistan, 29 from the Philippines, three from Sri Lanka, one from Thailand and three from Vietnam. The reason for choosing South-East Asia was because of the large number of borrowers in this area, the large loan portfolio outstanding and because microfinance was first introduced here.

Unfortunately the dataset is unbalanced, with 54 organisations which do not receive donations at all in any of the observation years, many organisations that only receive donations in some of the observation years and few organisations that get a very high amount of donations (for example a donations of more than their gross loan portfolio). Furthermore, only ten percent of the organisations get more than 10% of their gross loan portfolio in donations (with one extreme observation of an organisation that receives 215% of its gross loan portfolio). Another limitation of the dataset is that the variables are all computed consistent with local accounting procedures. These accounting rules might not be equal between all countries in the sample and therefore a comparison is difficult. However, for simplicity reasons (and because of a lack of better data) we assume that all variables are true values and that they are comparable.

Of the 121 organisations in our sample we found fourteen organisations with suspicious variables (\*\*\*) (example: an organisation that reports a percentage greater than 100 for the female borrowers, or an organisation with an average loan balance of more than 200,000 US dollar). We deleted all observations from these organisations because the quality of the data is unsure.

Below a table is found with specifications for each variable in the sample:

<b>Variable</b>	<b>Measurement base</b>	<b>Source</b>
The year in which the MFI was founded	Years	Websites of MFI's
Region where the MFI operates		MIX market
Name of the MFI		MIX market
Age of the MFI	Years	Websites of MFI's
Number of active borrowers	Real number	MIX market
Gross loan portfolio - amount of outstanding loans without interest	US dollar	MIX market
Gross loan portfolio divided by number of borrowers	US dollar	Computed
Volume of donations	1000 US dollar	MIX market
Donations as percentage of gross loan portfolio	%	Computed
Existence of donations	Dummy variable. 0 = no donations, 1 = donations > 0	Computed
Amount of loans written off in a period	US dollar	MIX market
Female borrowers	%	MIX market
Profit share times gross loan portfolio	US dollar	Computed
portfolio at risk of > 30 days	%	MIX market
portfolio at risk of > 30 days times gross loan portfolio	US dollar	Computed
portfolio at risk of > 90 days	%	MIX market
expense as share of gross loan portfolio	%	Computed
amount of expenses	US dollar	MIX market
number of loan officers per MFI	real number	MIX market
number of borrowers per loan officer	real number	Computed

*Table 1. Specification of variables*

#### *4.1.1 Portfolio at risk of more than 30 days*

Choosing portfolio at risk of more than 30 days as a measure indicating financial performance has a few reasons. These are: variables capturing both financial performance and outreach are not available, none of the existing literature has used this variable yet (mostly authors use Balkenhol's (2007) efficiency tax) and it could also say something about the future (organisations with high portfolio at risk might not be able to survive in the future). All data are end-of-the-year data, which makes it easy to compare across organisations or different observation years since there is no difference-in-timing effect. In microfinance, loan terms are different from mainstream finance, since the pay-back period is often short and starts shortly after the issuance of the loan. The exact loan terms differ per organisation and maybe even per

case, but 30 days overdue payments are a good indicator for non-performing loans (financial losses). Moreover, for organisations to be allowed to participate in the MIX market database providing this figure is mandatory. This leads to a high number of observations. As an extension the variable portfolio at risk of more than 90 days is used as a dependent variable.

#### *4.1.2 Donations*

Donations are, like all other variables, self-reported by the organisations. These include only monetary assistance they received. Morduch (1999a) already argued that the Grameen Bank reports profit in years where it receives a lot of donations and that most of the donations to the bank were not monetary. However this thesis uses this measure as most important independent variable, because there is no data available from the microfinance organisations on non-monetary assistance or subsidies in the form of ‘cheaper’ loans. It is expected that the real amount of financial assistance received by the organisations is higher. A big difference with the already existing literature is that this paper could only use the variable donations, while others used the amount of subsidies organisations received. The difference is that subsidies are assumed to come with more conditions.

#### *4.1.3 Control variables*

Where donations and non-performing loans are the main variables of interest, there are more variables available in the dataset that could have an effect on portfolio at risk. These are the percentage of female borrowers, the operating expense, the average loan, the amount of borrowers per officer, the age of the organisation and the gross loan portfolio. As discussed in the theoretical framework, microfinance organisations often target women. In the sample used for this thesis there are even 31 organisations<sup>(\*\*\*)</sup> that *only* serve women, and with an average of 83% of the active borrowers being female this variable can be very interesting. It is expected that serving women is not only beneficial for women empowerment, but also contributes to better overall repayment rates, since women are less risk averse and are less mobile than men. Because of these biological and social differences we expect that the more women an organisation serves, the better the repayment rate will be.

The operating expense is another interesting variable. As seen in the correlation table the operating expenses are correlated with donations. This is logical, since donations often come with conditions to spend it on technological improvements or education etc. The effect of operating expense on risk may have both signs. Technological improvements might lead to a more efficient way of doing business. However, in the short run the effect might not be beneficial since time and resources are used which could otherwise be used for monitoring or collection of loans.

The amount of borrowers per loan officer, the age of the organisations and the gross loan portfolio are also included in the model as control variables.

Below the summary statistics can be found, just as detailed statistics for the key variables. In appendix II correlations are displayed. As can be seen in the tables below many organisations do not get donations at all (61 organisations) in some periods and only half of the organisations have portfolio at risk. Other interesting figures are the average loan which is as expected tiny (223.24 US Dollar), the big difference between the smallest and largest organisation in terms of borrowers (19 – 8.3 million) and the correlation between risk and donations (0.1656) which is small but positive.

Variable	Obs	Mean	Std. Dev.	Min	Max
FOUNDED	1057	1991	9.37	1956	2003
AGE	1057	14.99	9.58	0	54
BORROWERS	1055	259277	888851	19	8340623
GROSS LOAN					
PORTFOLIO (GLP)	1057	31.5 million	103 million	1468.72	961 million
AVERAGEL	1055	223.24	303.67	5.76	2800.15
DONATIONS	1056	786037	9039.67	0	161 million
DONATIONS as % of					
GLP	1056	4.84%	18.05%	0	215.40%
DUMMY					
DONATIONS	1056	0.5028	0.5002	0	1
WRITEOFF	1041	438774.3	2648,89	0	50.4 million
FEMALE %	1013	0.8138	0.2506	0	1
RISK30	983	0.0621	0.1036	0	0.9852
RISK * GLP	983	2.2 million	6.2 million	0	375 million
RISK90	712	0.0522	0.1030	0	0.9537
EXPENSE %	923	0.2278	0.2361	0.0128	4.4537
EXPENSE * GLP	1057	3.7 million	11 million	0	104 million
OFFICERS	749	763	2312	1	23533
BORROWERS per					
OFFICER	749	2685	32466	0	508184

Table 2: descriptive summary statistics for the sample without the suspicious organisations(\*\*\*)

DONATIONS	Percentiles	Smallest
1%	0	0
5%	0	0
10%	0	0
25%	0	0
50%	99.57	
		Largest
75%	84583.39	1.36 * 10 <sup>8</sup>
90%	397117.00	1.41 * 10 <sup>8</sup>
95%	812547.80	1.44 * 10 <sup>8</sup>
99%	6468452.00	1.61 * 10 <sup>8</sup>

Table 3: descriptive summary statistics for donations in US dollar

Table 3 shows that the sample is skewed towards the higher percentiles. Only 25% of the observations receive significant donations. The other organisations receive zero, or a very small amount. The distribution of donations is extremely skewed. Because of this there are fewer observations to identify a result, so the effects might be underestimated. To account for the (unobserved) characteristics in which donations-receiving microfinance organisations differ from non-donations receiving ones it is justified to use a dummy variable of donations.

<b>RISK</b>	Percentiles	Smallest
1%	0	0
5%	0	0
10%	0.0001	0
25%	0.005	0
50%	0.0269	
		Largest
75%	0.0741	0.9396
90%	0.1556	0.9462
95%	0.2273	0.9462
99%	0.4879	0.9852

*Table 4: descriptive summary statistics for risk > 30 days as percentage of gross loan portfolio*

From table 4 it is important to note that there are only few organisations that suffer from a high percentage of non-performing loans. Only the top 25% has more than 7.4% of their portfolio at risk and one organisation even has almost its whole portfolio at risk (98.5%). As it is the case with donations, the distribution of risk among the organisations is also skewed.

## 4.2 Methodology

The analysis of this research focuses on explaining the effects of donations on portfolio at risk. To be able to draw reliable conclusions a number of different regression models are estimated. The three models employed to do the analysis are (I) standard ordinary least squares (OLS), (II) time and organisation fixed effects dynamic panel data OLS and (III) an IV regression model and will be elaborated on below. All regressions are done with and without robust standard errors to correct for heteroskedasticity and autocorrelation. The data in the sample is constructed as a panel. However the first analysis done ignores this structure and investigates whether a general pattern can be seen if all observation years are considered as being separate ‘institutions’.

The statistical (I) OLS model is specified as:

$$Y_{it} = \beta_0 + \gamma Y_{it-1} + \beta_1 \text{Dummy}D_{it} + \beta_2 \text{Dummy}D_{it-1} + \beta_3 \text{Donations}_{it} + \beta_4 \text{Donations}_{it-1} + \text{Controls}_{it} + \varepsilon_i$$

With  $Y_{it}$  being portfolio at risk of more than 30 days as a percentage of total gross loan portfolio,  $\gamma Y_{it-1}$  is the portfolio at risk of the previous year,  $\text{Dummy}D_{it}$  is the dummy variable of donations and the error term is represented by  $\varepsilon_i$ . After running the model, a robustness check is done to ensure that the results were not driven by misspecifications.

Furthermore a dynamic panel OLS model was performed (II). The equation is given below:

$$Y_{it} = \beta_0 + \gamma Y_{it-1} + \beta_1 \text{Dummy}D_{it} + \beta_2 \text{Dummy}D_{it-1} + \beta_3 \text{Donations}_{it} + \beta_4 \text{Donations}_{it-1} + \text{Controls}_{it} + n_i + n_t + \varepsilon_{it}$$

Again in this model, the dependent variable will be estimated by using the dummy of donations, donations and the control variables. Moreover, for three variables we included the lags; the dummy of donations, donations itself and the dependent risk variable. The reason to include the lags is that it is expected that the risk in the last year has explanatory power over the current risk. Concerning donations there might be a timing issue (donations might be given once a year at a specific date while the risk variable is announced in the yearly report for accounting purposes). Institution specific effects will be captured by  $n_i$  and time specific effects

by  $n_t$ . The institution specific effects are only included in the robustness specification to correct for heteroskedasticity and autocorrelation. The error term is represented by  $\varepsilon_{it}$ .

Lastly an Instrumental Variable regression is conducted using a two-stage least squares estimation (2SLS). In this specification, previous observations of the risk variable are used to instrument the risk variable in year  $t$ . The instrumental variable is a variable which is uncorrelated with the model's error  $\varepsilon_{it}$  term, but correlated with the endogenous regressor.

The regression (III) is given by:

$$Y^* = \beta_0 + \gamma Y_{it-1}^* + \beta_1 \text{Dummy}D_{it} + \beta_2 \text{Dummy}D_{it-1} + \beta_3 \text{Donations}_{it} + \beta_4 \text{Donations}_{it-1} + \text{Controls}_{it} + n_i + n_t + \varepsilon_{it}$$

In this equation, the independent variable  $Y_{it-1}^*$  is instrumented by the risk variable of year  $t-2$ . Again a dynamic specification needs to be estimated, since there could exist a timing issue with donations as explained before. Given this specification there is a bias to estimate  $Y_{it-1}^*$ . The reason for this bias is that after applying the first difference transformation<sup>11</sup> necessary to eliminate the institution specific unobservables ( $n_i$ ), this variable will be correlated with the error term.

That the variable and the error term are correlated is illustrated underneath:

Assume the following panel data regression:  $Y_{ti} = \beta_0 + \beta_1 Y_{it-1} + \mu_{it} + \varepsilon_{it}$

One year back:  $Y_{it-1} = \beta_0 + \beta_1 Y_{it-2} + \mu_{it} + \varepsilon_{it-1}$

To eliminate the fixed effects coefficient  $\mu_{it}$  the difference is taken:

$$\Delta Y_{it} = \beta_1 Y_{it-1} - \beta_1 Y_{it-2} + \varepsilon_{it} - \varepsilon_{it-1}$$

In which it is seen that both in the variable  $Y_{t-1}$  and  $\varepsilon_{t-1}$  there is  $t-1$  which by definition means that they are correlated.

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<sup>11</sup> An alternative to the first-difference transformation is a fixed effects transformation. However the effect of both alternatives is identical in the bias present.



To deal with this bias the original equation is first-differenced to get rid of the fixed effect and the variable  $Y_{it-1}$  is instrumented by  $Y_{it-2}$ . This is a good instrument because it is not correlated with the  $\Delta$  error term, as  $\varepsilon_{t-2}$  does not show up in the above difference equation. Moreover  $Y_{it-2}$  is a good instrument because it has explanatory power over the instrumented variable.

Again in this regression specification the robustness check is done by including organisation ( $n_i$ ) and time specific ( $n_t$ ) effects and the error term is given by  $\varepsilon_{it}$ .

## 5. Results

The regressions discussed above are run both for portfolio at risk of more than 30 and more than 90 days. The dependent variable portfolio at risk of more than 30 days will be discussed first, followed by the portfolio of more than 90 days. After that the other extra specifications are explained.

### *5.1 Portfolio at risk of more than 30 days*

Since the risk variable in the dataset for which most observations are available was portfolio at risk of more than 30 days this is the main dependent variable in the research. The variable is announced once per year at the end of the accounting year. Although portfolio at risk does not directly indicate the write-offs on the outstanding loans, it can be used as a proxy since there is a correlation between the two. With reason it can be assumed that part of the portfolio at risk will never be repaid and therefore it makes sense to use it as a proxy for financial (dis)performance.

The results from the first regression, ordinary OLS, are found in Table 5 below. The complete model (1) consists of the dependent variable portfolio at risk of more than 30 days, the independent explanatory variables donations as percentage of gross loan portfolio, the dummy of donations, the portfolio at risk of the previous year and all control variables. Specification (1a) employs only the dummy of donations of this and the previous year on the same sample as (1) and specification (1b) uses the identical sample to also regress the donations as percentage of the gross loan portfolio. All regressions are presented including the robustness standard errors.

As found in the regression results the variables become insignificant when fixed effects and robust standard errors are used. This indicates that much of the variation in the model is not explained by the variables used in the regression, but depends on organisation specific factors. The donations dummy is never significant. Donations as percentage of gross loan portfolio are significant in the non-robust model (7.795\*\*), as seen in appendix IV, positive for this years' observation and negative (-4.191\*) for last year's donations. This result is consistent in sign for

all specifications which indicates that there are signs of an effect, namely: if an organisation receives more donations last year this decreases the portfolio at risk (performance enhancing effect), while more donations in the current year increases the amount of non-performing loans (performance decreasing effect).

<b>y = RISK30</b>	<b>complete</b>	<b>(1a)</b>	<b>(1b)</b>
#	615	615	615
L1 RISK30	0.771*** (0.054)	0.789*** (0.044)	0.782*** (0.049)
Dummy DONATIONS	0.000 (0.006)	0.002 (0.006)	0.000 (0.006)
L1 Dummy DONATIONS	-0.009 (0.006)	-0.009 (0.006)	-0.008 (0.006)
DONATIONS % of GLP	0.078 (0.095)		0.071 (0.089)
L1 DONATIONS % of GLP	-0.041 (0.057)		-0.041 (0.058)
FEMALE	-0.012 (0.012)		
EXPENSE %	-0.020 (0.029)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.002 (0.002)		
GROSS LOAN PORTFOLIO (GLP)	-0.008 (0.005)		
BORROWERS	0.007 (0.006)		
R <sup>2</sup>	0.615	0.607	0.611

Table 5: OLS regressions with portfolio at risk of more than 30 days.

\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

The dataset is built in panels, with the organisations as ID. A panel data OLS regression shows more trustable results, because every organisation is considered ‘separately’. In this study a dynamic time fixed effect panel data model is ran with, and without, organisation fixed effects. The reason to use dynamics in the model is that there is a timing issue concerning donations which needs to be controlled for. Donations given in a certain year might not have an effect immediately, but may affect the performance in the following year and there is inertia in performance due to factors that the model may not capture. When available the risk variable

of the previous year is included, since non-performing loans might be non-performing for a longer period before they are written off. Underneath the results of the dynamic time fixed effects panel data OLS are found in table 6. As above again model 1, (1a) and (1b) are the complete model, the sample of model (1) with only the dummy of donations and for (1b) with both donations and the dummy. All below reported results include the institution specific fixed effects. The results without robustness are presented in the appendix.

$y = \text{RISK30}$	<b>complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	615	615	615
L1 RISK30	0.555*** (0.081)	0.575*** (0.076)	0.577*** (0.079)
Dummy DONATIONS	0.002 (0.008)	0.007 (0.008)	0.006 (0.008)
L1 Dummy DONATIONS	-0.003 (0.006)	-0.003 (0.006)	-0.001 (0.006)
DONATIONS % of GLP	0.116 (0.099)		0.058 (0.101)
L1 DONATIONS % of GLP	-0.087 (0.056)		-0.080 (0.060)
FEMALE	-0.050 (0.034)		
EXPENSE %	-0.156** (0.074)		
AGE	0.000 (0.002)		
BORROWERS per OFFICER	0.001 (0.002)		
GROSS LOAN PORTFOLIO (GLP)	-0.013 (0.012)		
BORROWERS	0.013 (0.002)		
R <sup>2</sup>	0.422	0.363	0.376

Table 6: Dynamic time fixed effects panel data OLS with institution fixed effects.  
\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

The panel data regression tends to underestimate the power of the regression to explain real world links. Furthermore the main difference is that the lagged risk coefficient is much lower. As for all regressions, variables become insignificant once robust standard errors are used. In the regression without institution specific fixed effects the donations in the current year

(7.795<sup>\*\*\*</sup>) and the lagged donations (-4.191<sup>\*\*</sup>) are significant. Furthermore the results show similar and consistent signs. Since the significance in the robust model disappears due to the fixed effects it can be concluded that the variation in the risk variable is best explained by organisation specific variables. Examples of organisation specific variables are local policies, organisation's management or different donation conditions. The only variable which is still significant at a 5% level in the robust model is expense share which is financial performance enhancing. This could be explained by the typical expenses for microfinance organisations are improved technical assistance (computer networks etc) and training for their employees which might lead to better screening and monitoring of the clients. These expenses decrease the amount of non-performing loans.

Even though the observations are not significant in the robust model, the signs have explanatory capacity. The variables that are interesting for this research, donations and its dummy, show consistent signs. The current year's observation is positive and thereby increases the non-performing loan balance, while the previous observation is performance enhancing.

The third model run for portfolio at risk of more than 30 days is the Instrumental Variable regression. The table below shows the results of this robust regression. The interpretation of the different specifications is similar to the above models. The independent variable portfolio at risk of more than 30 days of the previous period is instrumented by t-2.

<b>y = RISK30</b>	<b>complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	549	549	549
L1 RISK30	0.622*** (0.060)	0.651*** (0.058)	0.621*** (0.058)
Dummy DONATIONS	0.002 (0.005)	0.002 (0.006)	0.002 (0.005)
L1 Dummy DONATIONS	-0.012 (0.006)	-0.012* (0.006)	-0.012* (0.006)
DONATIONS % of GLP	-0.010 (0.028)		-0.010 (0.027)
L1 DONATIONS % of GLP	0.001 (0.018)		0.004 (0.019)
FEMALE	-0.015 (0.012)		
EXPENSE %	-0.005 (0.027)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.003 (0.002)		
GROSS LOAN PORTFOLIO (GLP)	-0.010** (0.005)		
BORROWERS	0.008* (0.005)		
R <sup>2</sup>	0.497	0.492	0.492

*Table 7 IV-regression with portfolio at risk of more than 30 days, with robustness check.*

*\*\*\* significant at 1% level, \*\* significant at 5% level and \* significant at 10% level.*

The interesting feature of this model is that when robust standard errors are used and the same sample is used (1a and 1b), the lagged dummy of donations is significant and negative. This indicates that donations received in the previous period are performance enhancing. Nevertheless, the effect is extremely small (economically negligible). This can be illustrated by comparing the effect of a one standard deviation change in the dummy of donations on risk, with the standard deviation of risk. From the descriptive statistics it can be seen that the standard deviation of the dummy of donations is around 0.5. Given the coefficient of -0.012, the standard deviation change would imply a change in the risk due to donations of -0.006. The standard deviation of risk itself is 0.1, showing that the effect of a one standard deviation

change in the donations dummy is negligible when compared to the standard fluctuations of the risk variable.

The result in this specification *only* is not convincing enough to draw conclusions. Furthermore, in these regressions also the gross loan portfolio variable is significant and indicates that the larger the outstanding portfolio is, the smaller the percentage of non-performing loans. This contradicts with the theory described in the theoretical framework about the limited investment opportunities with increased budget to spend.

Concluding on the regressions with portfolio at risk of more than 30 days no clear and convincing result, but a very small effect, is found of a relation between donations and portfolio at risk of more than 30 days.

### *5.2 Portfolio at risk of more than 90 days*

This variable is available for fewer organisations in the sample, which explains the smaller number of organisations in the regression. However, the same regressions as for portfolio at risk of more than 30 days are done to make sure that the conclusion drawn above is consistent for both risk variables. Exactly the same regressions are presented below, starting with a dynamic OLS model, followed by a time fixed effect dynamic OLS panel data model and the IV-regression.

In table 8 the OLS model can be found. Again it is seen that there are not many significant variables. However, the signs of the variable are consistent in all specifications. The dummy of donations in the current year is slightly performance decreasing, and the dummy of donations in the previous year seems performance enhancing.

$y = \text{RISK90}$	complete model	(1a)	(1b)
#	525	525	525
L1 RISK30	0.754*** (0.084)	0.762*** (0.034)	0.761*** (0.035)
Dummy DONATIONS	0.000 (0.006)	0.002 (0.008)	0.002 (0.008)
L1 Dummy DONATIONS	-0.013 (0.006)	-0.011 (0.008)	-0.011 (0.008)
DONATIONS % of GLP	-0.010 (0.042)		-0.013 (0.047)
L1 DONATIONS % of GLP	0.009 (0.031)		0.009 (0.031)
FEMALE	0.010 (0.014)		
EXPENSE %	0.007 (0.022)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.000 (0.004)		
GROSS LOAN PORTFOLIO (GLP)	-0.005 (0.005)		
BORROWERS	0.005 (0.005)		
R <sup>2</sup>	0.518	0.514	0.514

*Table 8. OLS regressions with portfolio at risk of more than 90 days. \*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.*

The dynamic time (and organisation) fixed effect panel data OLS for portfolio at risk of more than 90 days does not show any significant result at all (table 9). The only remark that can be made is that again the dummy of donations in the current year is positive in all specifications, while the lagged dummy is consistently negative.



$y = \text{RISK90}$	complete model	(1a)	(1b)
#	525	525	525
L1 RISK30	0.308** (0.118)	0.297** (0.107)	0.307** (0.118)
Dummy DONATIONS	0.004 (0.007)	0.004 (0.006)	0.004 (0.006)
L1 Dummy DONATIONS	-0.007 (0.006)	-0.006 (0.005)	-0.006 (0.005)
DONATIONS % of GLP	-0.035 (0.723)		-0.048 (0.045)
L1 DONATIONS % of GLP	-0.015 (0.039)		-0.005 (0.065)
FEMALE	-0.012 (0.026)		
EXPENSE %	0.028 (0.099)		
AGE	0.000 (0.003)		
BORROWERS per OFFICER	0.003 (0.002)		
GROSS LOAN PORTFOLIO (GLP)	0.002 (0.012)		
BORROWERS	0.004 (0.013)		
R <sup>2</sup>	0.539	0.816	0.792

Table 9: Dynamic time fixed effects panel data OLS with institution fixed effects. \*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

The most interesting regression with portfolio at risk greater than 90 days is the instrumental variable regression as shown in the table 10 below. This regression *does* show significant results after robustness checks. The lagged dummy of donations shows performance enhancing results and the donations as a percentage of gross loan portfolio in this year is performance decreasing. This result alone gives a proof for a link between donations and portfolio at risk. However, this link is not robust to the choice of the dependent variable and to the regression estimation technique. These should be further evaluated on a case by case basis for every organisation to be able to draw reliable conclusions.

<b>y = RISK90</b>	<b>complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	416	416	416
L1 RISK30	0.720*** (0.098)	0.733*** (0.087)	0.720*** (0.091)
Dummy DONATIONS	0.001 (0.005)	0.003 (0.006)	0.001 (0.005)
L1 Dummy DONATIONS	-0.012* (0.006)	-0.008 (0.006)	-0.010* (0.006)
DONATIONS % of GLP	-0.044* (0.026)		-0.049** (0.024)
L1 DONATIONS % of GLP	0.095 (0.071)		0.094 (0.069)
FEMALE	0.011 (0.014)		
EXPENSE %	0.004 (0.035)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.002 (0.002)		
GROSS LOAN PORTFOLIO (GLP)	-0.002 (0.006)		
BORROWERS	0.002 (0.005)		
R <sup>2</sup>	0.609	0.601	0.601

Table 10 IV-regression with portfolio at risk of more than 90 days, with robustness check.

\*\*\* significant at 1% level, \*\* significant at 5% level and \* significant at 10% level.

### 5.3 Other regressions

To check whether the data would find an optimum amount of donations the presence of an inverted U relationship between donations and risk was also investigated. The existence of an inverted U relationship would mean that the first donations would be productivity enhancing until an optimal point. After the optimal point, an increase in donations would harm the financial performance of organisations. After all regressions were run with a variable donations<sup>2</sup> and only lagged donations as explanatory variable, no evidence for an inverted U relationship was found.

The last possibility for finding a relationship between donations and portfolio at risk was the regressions that were run with only the top 10% receiving organisations. These organisations received between 10% and 120% of their gross loan portfolio in donations. In this regression a

relationship between donations and performance is found (as seen in table 11), however the sample of organisations receiving this high amount of donations is only extremely small (65 observations, from 24 different microfinance organisations). In order to specify the result, more observations are necessary, but yet again, a link between the two variables is seen.

<b>y = RISK30</b>	<b>complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	56	56	56
L1 RISK30	-0.387 (0.344)	0.017 (0.256)	-0.071 (0.262)
Dummy DONATIONS	Omitted	Omitted	Omitted
L1 Dummy DONATIONS	0.028 (0.023)	0.023 (0.045)	0.015 (0.043)
DONATIONS % of GLP	-0.124 (0.109)		-0.038 (0.039)
L1 DONATIONS % of GLP	-0.099** (0.042)		-0.416*** (0.036)
FEMALE	-0.159 (0.132)		
EXPENSE %	0.090 (0.146)		
AGE	0.005 (0.013)		
BORROWERS per OFFICER	-0.094 (0.074)		
GROSS LOAN PORTFOLIO (GLP)	0.082 (0.077)		
BORROWERS	-0.124 (0.109)		
R <sup>2</sup>	0.469	0.139	0.482

*Table 11 dynamic panel data with top 10% receiving observations and robust standard errors.*

*\*\*\* significant at 1% level, \*\* significant at 5% level and \* significant at 10% level.*

(Dummy variable is omitted because it is perfectly collinear with the lagged dummy because only organisations which receive donations are studied here).

## 6. Conclusions and discussion

As shown above the data show a weak link and signs that an effect exists. Unfortunately when robustness checks are performed, the existing significance disappeared. There are several reasons why this happens; first the dataset contains a heterogeneous sample of organisations. As said before, there are organisations that never reported donations in their balance sheet and only few organisations that receive more than 10% of their gross loan portfolio via donations. Next to that, the organisations fixed effects regression show that the variation found in the data is very case specific. This means that the performance of an organisation, in this study represented by portfolio at risk, does not depend on the variables captured by the model alone. A large part of the variation cannot be explained by the amount of donations, the gross loan portfolio or the amount of female borrowers etc. only. Examples of influences on the performance which are not part of the model are the management of the organisation, the mission of the organisations, the local authorities and policies and the existence of local disasters<sup>12</sup> amongst others. The model employed in this study does not explain enough of the effect.

Furthermore, the variable chosen to explain the financial performance does not capture the whole (financial) performance of the organisations. Portfolio at risk of more than 30 days is an accounting manner of writing off non-performing loans. Logically there is a link between the non-performing loans and profit for example, but this link is not perfect. Next to that, the microfinance organisations typically do not have profit making as their only goal and also care about their stakeholders, mission and vision. The performance of these more social goals of the companies is hard to evaluate economically, and many of the data is unavailable.

Another specification issue arises with the donation-variable, which could, as Morduch (1999a) found for the Grameen Bank, highly underestimate the total amount of subsidies, donations in kind and cheaper loans that organisations receive.

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<sup>12</sup> For example organisations which work in an area where a natural disaster took place. There are no variables available to capture the loss in this case.

Concerning the donations, it is unknown which donor gives which amount to which organisation. Unfortunately it is not known under which conditions or which goals these donations are given. The research would benefit from this knowledge.

However, there are signs that there exists a donations-performance link. For example the dummy of donations in the previous year does not always give a significant result, but is negative throughout the specifications.

Concluding, there is only little evidence that the donations-performance link as studied in this thesis exists. However, if it does exist, the link is extremely case specific and should only be studied on a case-by-case basis. Without this clear and generalizable relation, donors should not give donations with the purpose to influence portfolio-at-risk (and thereby try to improve financial performance of the organisation) only. The likelihood of donors to only give donations to reach this specific goal seems small though.

## **7. Limitations of the research**

The major limitation of the research lies in the data. Although the economics of microfinance is a popular topic for research nowadays, the availability of data is far from sufficient. First of all, the data used for this thesis is self-reported data by the organisations which decreases the trustworthiness of the research. Secondly, there is a lack of observation years. To be able to see time-patterns it was decided to only use organisations with observations over 7 years or more. Many microfinance organisations in the region did not survive this first selection. The third problem with the available data is that they are constructed by using accounting procedures. This means that we only have the risk variable at the end of the accounting year. It is unknown how this variable ‘behaves’ in the rest of the year. An improvement can be done if organisations provide monthly data.

Furthermore there is not enough known about the motives of donors, the conditions on which donations are given and what percentage of donations come in kind.

Lastly a limitation is that, as said above, it was beyond the scope of this research to conduct a more case-specific research.

## **8. Further research**

Recommendations for further research naturally come from the limitations, so one should try and find the relationship on a case-specific-base, more data should be found both on the microfinance organisations as on the goals for the donors and conducting the research with more observation years and only with donations that have received donations might show another side of the story.

Data improvement can be realized by cooperation between donors, the World Bank, governments and organisations. Microfinance organisations itself can benefit from knowledge obtained via research and the other parties fund research and organisations. Data can also be more reliable and better comparable once the organisations do not report data themselves but have professional accountants that correct the statements report this.

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## Appendix I.

Overview of organisations (\*\*\*) are organisations with suspicious observations)

<b>MFI name</b>	<b>Country</b>	<b>founded</b>	<b>obs. years</b>	<b>MFI name</b>	<b>Country</b>	<b>founded</b>	<b>obs. Years</b>
1st Valley Bank	Philippines	1956	2000-2010	CBB	Nepal	2001	2002-2010
Acleda	Cambodia	1993	1999-2010	CEP	Vietnam	1991	2002-2011
AFS***	Afghanistan	2003	2003-2010	CEVI	Philippines	2000	2004-2010
Agro Micro	Sri Lanka	1993	2003-2010	CFPA	China	1989	2004-2010
AMK	Cambodia	1997	2003-2010	CMEDFI	Philippines	1998	2003-2010
AML	India	2002	2004-2010	Coast Trust	Bangladesh	1998	2003-2010
AMRET	Cambodia	1991	1998-2011	CSD	Nepal	1991	2003-2010
ASA	Bangladesh	1978	1998-2010	CSS	Bangladesh	1972	2002-2010
ASA Philippines***	Philippines	2004	2004-2011	CU Sawiran	Indonesia	1989	2003-2010
Asasah	Pakistan	2003	2003-2009	CZWSDA***	China	2001	2001-2011
ASHI	Philippines	1991	2004-2011	DAMEN	Pakistan	1992	2002-2010
ASKI***	Philippines	1986	2002-2010	DD Bank***	Nepal	2001	2002-2010
AWS	India	1994	2003-2009	Dian Mandiri	Indonesia	1998	2003-2010
Banco Santiago de Libon	Philippines	1973	2004-2010	DSK***	Bangladesh	1989	2004-2010
Bandhan	India	2001	2003-2009	DSPI	Philippines	1994	2003-2010
Bangko Kabayan	Philippines	1997	2004-2010	ECLOF - PHL	Philippines	2001	2003-2010
BASIX	India	1996	1999-2010	ESAF	India	1992	2004-2010
BASTOB	Bangladesh	1997	2000-2010	FAIR BANK	Philippines	1999	2003-2009
BEES	Bangladesh	1975	2002-2010	FICO	Philippines	1980	2004-2010
Binhminh CDC***	Vietnam	2003	2003-2010	First Macro Bank	Philippines	1960	2003-2010
BISWA	India	1995	2003-2010	FMFB-Pakistan	Pakistan	2002	2003-2010
BMT Pringsewu	Indonesia	2002	2003-2009	GBNB	Nepal	1992	2003-2010
BPR AN	Indonesia	1995	2004-2010	Grameen Bank	Bangladesh	1983	2002-2010
BPR AK	Indonesia	1991	2002-2010	Green Bank	Philippines	1975	2003-2010
BPR Eka Ayu	Indonesia	1998	2002-2008	GU	India	1975	2005-2010
BPR NSI	Indonesia	1992	2004-2010	HEED	Bangladesh	1974	2001-2010
BRAC	Bangladesh	1972	1998-2011	HKL	Cambodia	1994	1998-2010
BRAC - AFG	Afghanistan	2002	2003-2010	HSPFI	Philippines	1987	2004-2010
BSS	India	1994	2003-2010	IASC	India	1998	2000-2006
BURO Bangladesh	Bangladesh	1990	2003-2010	IDF	India	1998	2000-2010
Cantilan Bank	Philippines	1980	2003-2010	Janodaya	India	1998	2004-2010
CARD Bank	Philippines	1986	2001-2010	JCF	Bangladesh	1976	2002-2010
CARD NGO	Philippines	1986	2000-2009	JSCCS	Nepal	1993	2003-2010
Cashpor MC	India	1997	2000-2010	Kasaqana-Ka	Philippines	2002	2004-2010

<b>MFI name</b>	<b>Country</b>	<b>founded</b>	<b>obs. years</b>	<b>MFI name</b>	<b>Country</b>	<b>founded</b>	<b>obs. Years</b>
Kashf	Pakistan	2002	2002-2008	RGVN	India	1996	2003-2010
Kazama Grameen	Philippines	1996	2004-2010	RRF	Bangladesh	1982	2002-2010
KBSLAB	India	1999	2003-2010	RSPI	Philippines	1987	2004-2010
Khushhali Bank	Pakistan	2000	2003-2010	Saadhana	India	2002	2004-2010
KMBI	Philippines	1986	2002-2010	Sabaragamuwa	Sri Lanka	1999	2002-2009
KREDIT	Cambodia	1993	2001-2011	SAFWCO	Pakistan	1993	2003-2010
Mallig Plains RB	Philippines	1996	2004-2010	Sajida	Bangladesh	1993	2003-2010
Maxima	Cambodia	2000	2003-2010	Sarvodaya Nano Finance	India	1996	2003-2010
MBK Ventura	Indonesia	2003	2003-2010	Sathapana Limited	Cambodia	1995	2001-2010
MEDF	Philippines	1995	2002-2008	SB Bank	Nepal	2002	2003-2010
MGBB	Nepal	1996	2003-2010	SCNL	India	1990	2004-2010
Mitra Usaha Kecil (MUK)***	Indonesia	1992	2003-2010	SDC	Bangladesh	1988	2002-2010
NBJK	India	1995	2004-2010	SED	Thailand	1988	2004-2010
NDFS	India	1995	2001-2007	SEEDS	Sri Lanka	1986	1998-2010
NERUDO	Nepal	1991	2003-2010	Seilanithih	Cambodia	1996	2003-2010
Nirdhan	Nepal	1993	1999-2010	Serviamus	Philippines	1997	2004-2010
NRDSC	Nepal	1993	2003-2010	Share	India	1997	2000-2010
NRSP	Pakistan	1991	2002-2010	SKS	India	1997	1998-2010
NWTF	Philippines	1984	1998-2010	SKS Bangladesh	Bangladesh	1987	2004-2010
OK Bank***	Philippines	2001	2001-2010	SMSS	India	1997	2004-2010
Orangi	Pakistan	1987	2002-2009	Spandana	India	1997	1999-2010
PALFSI	Philippines	1997	2004-2010	SPDB Samoa***	Tonga	2000	2000-2010
Parwaz	Afghanistan	2003	2003-2009	SRSP	Pakistan	1991	2002-2010
PATRA Hunchun***	China	2002	2004-2010	SSS	Bangladesh	1986	2002-2010
PATRA Yanbian***	China	2003	2004-2010	SU	India	2001	2004-2010
PGBB	Nepal	1994	2003-2010	TCVM Thanh Hoa	Vietnam	1998	2004-2010
PMUK	Bangladesh	1986	2002-2008	TMSS***	Bangladesh	1980	2000-2010
POPI***	Bangladesh	1986	2002-2010	TPC	Cambodia	1994	2003-2010
PRASAC	Cambodia	1995	2000-2011	TRDP	Pakistan	1997	2002-2010
PROSHIKA	Bangladesh	1976	1998-2007	TSKI	Philippines	1986	1999-2010
PRSP	Pakistan	1998	2002-2009	TSPI	Philippines	1981	1998-2010
PWMACS	India	1997	2004-2010	TYM	Vietnam	1992	2002-2010
RB Sto. Tomas	Philippines	1973	2000-2007	UDDIPAN	Bangladesh	1984	2002-2010
RB Talisayan	Philippines	1966	2004-2010	VFC	Cambodia	2001	2003-2010
RDRS	Banladesh	1972	2002-2010	Wave	Banladesh	1990	2002-2010

## Appendix II

Below the correlations table is found

	AGE	BORROWERS	GLP	AVERAGEL	DONATIONS	FEMALE	PROFITGLP	RISKGLP	EXPGLP	OFFICERS	OFFBOR
AGE	1.0000										
BORROWER	0.2293	1.0000									
GLP	0.1721	0.8941	1.0000								
AVERAGEL	0.1269	-0.1001	0.0868	1.0000							
DONATIONS	0.1440	0.4196	0.3730	-0.0318	1.0000						
FEMALE	-0.0270	-0.0108	-0.0118	0.0276	-0.0030	1.0000					
PROFITGLP	0.0436	0.0282	0.0311	0.0209	0.0075	0.0015	1.0000				
RISKGLP	0.0597	0.4090	0.4987	-0.0201	0.1656	-0.0049	0.0056	1.0000			
EXPGLP	0.2231	0.8549	0.8956	0.1097	0.4083	-0.0141	0.0287	0.1877	1.0000		
OFFICERS	0.2632	0.9197	0.7902	-0.0893	0.4374	-0.0122	0.0287	0.2812	0.8259	1.0000	
OFFBOR	-0.0142	0.1700	0.1608	0.1608	-0.0285	-0.0059	0.0050	0.0321	0.1589	-0.0246	1.0000

### Appendix III

Interview with Jasmina Glisovic (Microfinance Specialist, Donors and Investors)

GCAP (Global Call to Action against Poverty/World Bank)

email: jglisovicmeziere@worldbank.org

26 Juli 2012 11.00-11.30h

**Linda Driesen:** *Hello! Thanks a lot for calling and for making some time available to talk with me. Do you mind if I record the conversation?*

**Jasmina Glisovic:** Hello! No problem at all. Could you quickly tell me the purpose of your study and what I can help you with?  
*Of course, well my name is Linda Driesen and I am writing my master thesis on microfinance. Especially I will look at the effect of donations on the financial performance of MFI's in South-East Asia. I use data from the MIX market database for my research. At this point in time I just started doing regressions, after having written my theoretical part in which we came up with several reasons why donations should have a positive, or negative, effect on portfolio at risk. These reasons are the assumed CRRA-utility function, the limited investment opportunities organisations have and the possible existence of the soft-budget constraint as negative influences, i.e. increasing portfolio at risk. Next to that the conditions come with donations from the donor's side and the signalling effect of donations might contribute positively to the financial performance. Your insights are very valuable to give me an idea of how donors think, behave, monitor and control MFI's.*

**LD:** Thank you. In terms of donations, what are donations according to your database?  
**JG:**

*It is only monetary grants. I know that this is a limitation to my study, but it is the only variable available.*  
**LD:**

Well, first let me introduce myself a little bit. I work for CGAP, a centre for financial development and financial inclusion more specifically. Most of the big donors and investors that support microfinance are our members.  
**JG:**

What we do is we keep them advice and help them how to support financial institutions and financial inclusion more broadly. Financial inclusion consists for example also of access to finance, payment systems etc. For organisations improving this we look at their internal set up, are organisations working in an efficient way, how they monitor their projects which is very important. Looking at your plan and dataset I think it is very hard to generalise on their performance, and on how donors deal with the organisations. The organisations differ a lot and unless you dig deep into every case it is hard to draw conclusions. However, looking at it globally, (which largely depends on the time that you are looking at, since there is much less grant funding than we used to have 10 years ago especially looking at Europe and Central Asia), you can see from our research, in the funders survey, the most funding goes to Africa and South-Asia. Focusing on a specific reason would help you find results that do make sense as well. But look at the funders' survey to get more information from the funders' point of view. Another thing to look at what kind of donors provide grants funding (also in this survey). Keep in minds that grant-funders do not only fund specific institutions, but they might fund a local NGO who in turn funds the MFI's. Donors maybe also give grants to policy makers to implement a policy improving financial inclusion or so.

**LD:** *Can you say which or what kinds of organisations do support MFI's or financial inclusion in general?*

Roughly speaking, the larger financial grant providers are bilateral donor agency, such as DC or UK or all those agencies that fund, like foreign affairs organisations in the European countries like Italian government or the Nordic countries' governments. In addition to the bilateral donors the second group is foundations like MasterCard foundation or the Bill and Melinda gates foundation. These organisations only have grants as instrument and are the main grant providers. You may have grants mostly

**JG:**



linked with investments from parties like World Bank, IFC or Asian Development Bank etc. This link is the most important difference with the other two categories of donors. These organisations mostly do not work directly with the MFI's. More specific information is found in the survey I told you about, but also when you dig deeper into specific cases.

**LD:** *Could you tell me something about the conditions that come with donations from the several parties?*

Well again here it is extremely hard to generalize. You cannot have one approach here. To give you few examples it first of all depends on the motivation of donors to give donations. These motivations can be very different. It depends on their own strategy and the purpose to support microfinance. Some donors might come from the perspective that they think that microfinance can help fight poverty, they will mainly provide grant funding to MFI's to help them to build the capacity to go into very poor areas. Or there can be conditions like 'you have to reach certain number of poor people' etc. Some donors are very clear about gender issues and maybe give donations like 'we know that it is not sustainable what we do, but if you help women with this money it is fine'. Most of the donations today are not given for on-lending, but rather for technical assistance and capacity building and training. In that sense, the conditions are a little bit less strict. But donations from years ago were used for on-lending with strict conditions depending on donors. Some donors have very specific conditions like they make the MFI use the money for a project in a very specific area, but exclude production of alcohol or forbid MFI's to sponsor projects that pollute. Concluding it is very very case specific.

**JG:** *How do organisations then gain from donations with these strict conditions?*

**LD:**

You might stay on the descriptive path here, but of course they can benefit because they have free money for on-lending. The hard thing for your story however is that it is impossible to assume that the donations

**JG:**

are for on-lending, without digging deeper in every specific case. But, in general, you can assume that most of the donations today are not for on-lending, but rather are for capacity building, especially in Africa. This is because more donors understood the practices better and giving money for on-lending was not always an effective way, because this only temporary benefitted the MFI. I am not sure how to relate this to portfolio at risk, because it is kind of like a chicken and an egg question. Maybe institutions that receive donations today are weaker and they have portfolio at risk rates that are not very good and this is the reason why they are supported by donors. This is the practice of microfinance that is often criticized. It is either this, or giving donations to efficient MFI's that would otherwise use their own money to do certain things.

**LD:**

*Ok thanks for your elaboration. How do donors monitor the MFI's?*

Again this differs very much with each donor. I think that the industry and the donors have really tried to be more consistent and to be more aligned in their reporting requirements. In the beginning, and like ten years ago, an MFI needed to write a specific report for every single donor. Now this is more standardized, especially on the social indicators. There are now common social indicators per MFI available. I think, and hope at least that many donors use this to evaluate. Some donors use performance based agreements, like for example, I give you one million for capacity building, but they require them to after six months write a report and if they do not they do not get the remainder of the funding. They for example give a certain transfer, then wait for the results and afterwards transfer the rest. So some of them have performance based agreements. We have a paper on this as well if you look at [cgap.com](http://cgap.com) it is on performance based agreements. However some donors only require a very light reporting, but some of them are very hands on. They for example bring their own consultants, but it really really depends. Look at our papers on this how this works.

**JG:**

**LD:** *And then the last question is it possible to get data on which MFI's receive donations from which parties?*

This information on MFI level is very hard to get, however we know which MFI is supported by whom. Unfortunately this is not publicly available data, since many donors do not want the world to know who they donate to. In the MIX market database there should be some information on who the lenders are, however not on MFI level I think. And even if you have a complete list of donors you will find that many organisations have twenty or more, so this is also not really helpful I think. Even we do not have a complete list and especially we do not know what local NGO's for example give to MFI's which might seem very small from a global perspective but is a lot in perspective on the MFI.

**JG:** *I have one more question, how big do think monetary grants are compared to other in-kind donations or 'cheaper' loans etc?*

**LD:** Normally MFIs just get a grant and no in-kind donations. Mostly the donor would transfer the money to the account and you would put it in the balance sheet as donations and as MFI you would buy assets, or organize trainings whatsoever. But it is in most of the cases monetary grants. May I ask you why you just look at South-East Asia?

**JG:** *Well I thought the area was interesting because it all started off there. Furthermore I had to narrow down the scope a bit because of the feasibility for a master thesis as well. Next to that it is also hard to generalize organisations from Asia and Latin-America because these are very different.*

**LD:** Now I understand. I even wonder why you should not narrow it even further down to one of the regions South, or East Asia, because these are very different. In East Asia there are so many government agencies, the maturity of the market is also very different. In south Asia there also exists more grant funding. But there are also many organisations getting funding from the Asian Development Bank etc. Furthermore there are

**JG:**

many non-typical MFI's like cooperatives. Funding from World Bank normally does not go directly to the MFI's but flows via governmental and non-governmental agencies there as well. And in South Asia the money also often comes from society as well. In South Asia a lot of money comes from local entities. We cannot assume that all money comes from outside.

**LD:** *Well Jasmine, thanks a lot for all your help and insight.*

You are welcome; if there is anything else you want to ask or we can provide you with please contact me.

**JG:**

**LD:** *Thanks again!!*

## Appendix IV

All regression results of non-robust specifications

<b>y = RISK30</b>	<b>complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	615	615	615
L1 RISK30	0.772*** (0.028)	0.789*** (0.027)	0.782*** (0.027)
Dummy DONATIONS	0.000 (0.007)	0.002 (0.007)	0.000 (0.007)
L1 Dummy DONATIONS	-0.009 (0.007)	-0.009 (0.007)	-0.008 (0.007)
DONATIONS % of GLP	7.795** (3.013)		7.140** (2.866)
L1 DONATIONS % of GLP	-4.190* (2.183)		-4.101* (2.155)
FEMALE	-0.012 (0.012)		
EXPENSE %	-0.018 (0.018)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.023 (0.022)		
GROSS LOAN PORTFOLIO (GLP)	-0.020 (0.299)		
BORROWERS	0.000 (0.203)		
R <sup>2</sup>	0.602	0.607	0.611

Table 12. OLS regressions with portfolio at risk > 30 days without robustness check.

\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

$y = \text{RISK30}$	Complete model	(1a)	(1b)
#	615	615	615
L1 RISK30	0.772*** (0.028)	0.789*** (0.027)	0.782*** (0.027)
Dummy DONATIONS	0.000 (0.007)	0.002 (0.007)	0.001 (0.007)
L1 Dummy DONATIONS	-0.009 (0.007)	-0.009 (0.007)	-0.008 (0.007)
DONATIONS % of GLP	7.795*** (3.013)		7.140** (2.865)
L1 DONATIONS % of GLP	-4.191** (2.183)		-4.101* (2.154)
FEMALE	-0.012 (0.012)		
EXPENSE %	-0.018 (0.017)		
AGE	0.000 (0.007)		
BORROWERS per OFFICER	0.023 (0.022)		
GROSS LOAN PORTFOLIO (GLP)	-0.020 (0.022)		
BORROWERS	-0.004 (0.203)		
R <sup>2</sup>	0.867	0.876	0.376

Table 13: Dynamic time fixed effects panel data OLS without institution fixed effects.

\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

<b>y = RISK30</b>	<b>Complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	549	549	549
L1 RISK30	0.624*** (0.045)	0.651*** (0.041)	0.651*** (0.042)
Dummy DONATIONS	0.002 (0.007)	0.002 (0.007)	0.002 (0.007)
L1 Dummy DONATIONS	-0.012* (0.008)	-0.012 (0.007)	-0.012 (0.007)
DONATIONS % of GLP	-1.197 (3.628)		-0.994 (3.332)
L1 DONATIONS % of GLP	0.068 (2.363)		0.444 (2.352)
FEMALE	-0.014 (0.012)		
EXPENSE %	-0.001 (0.020)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.329 (0.022)		
GROSS LOAN PORTFOLIO (GLP)	-0.100 (0.309)		
BORROWERS	0.0043 (0.209)		
R <sup>2</sup>	0.498	0.492	0.492

Table 14: IV-regression with portfolio at risk of more than 30 days, without robustness check.

\*\*\* significant at 1% level, \*\* significant at 5% level and \* significant at 10% level.

<b>y = RISK90</b>	<b>Complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	525	525	525
L1 RISK30	0.755*** (0.036)	0.762*** (0.034)	0.761*** (0.035)
Dummy DONATIONS	0.000 (0.009)	0.002 (0.008)	0.002 (0.008)
L1 Dummy DONATIONS	-0.013 (0.008)	-0.011 (0.008)	-0.011 (0.008)
DONATIONS % of GLP	-0.945 (4.909)		-1.276 (4.675)
L1 DONATIONS % of GLP	0.889 (3.108)		0.850 (3.068)
FEMALE	0.010 (0.118)		
EXPENSE %	0.008 (0.023)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.005 (0.025)		
GROSS LOAN PORTFOLIO (GLP)	0.030 (0.338)		
BORROWERS	-0.005 (0.025)		
R <sup>2</sup>	0.518	0.514	0.514

*Table 15: OLS regressions with portfolio at risk of more than 90 days.*

*\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.*



$y = \text{RISK90}$	Complete model	(1a)	(1b)
#	525	525	525
L1 RISK30	0.594*** (0.038)	0.586*** (0.036)	0.591*** (0.037)
Dummy DONATIONS	0.000 (0.008)	0.000 (0.008)	0.001 (0.008)
L1 Dummy DONATIONS	-0.012 (0.008)	-0.012 (0.007)	-0.012 (0.008)
DONATIONS % of GLP	-0.035 (0.047)		-0.037 (0.044)
L1 DONATIONS % of GLP	-0.006 (0.030)		-0.006 (0.029)
FEMALE	0.004 (0.017)		
EXPENSE %	0.003 (0.027)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.000 (0.004)		
GROSS LOAN PORTFOLIO (GLP)	0.010 (0.007)		
BORROWERS	0.008 (0.006)		
$R^2$	0.787	0.806	0.800

Table 16: Dynamic time fixed effects panel data OLS without institution fixed effects.

\*\*\* significant at the 1% level, \*\* significant at the 5% level and \* significant at the 10% level.

<b>y = RISK90</b>	<b>Complete model</b>	<b>(1a)</b>	<b>(1b)</b>
#	416	416	416
L1 RISK30	0.723*** (0.059)	0.733*** (0.054)	0.720*** (0.545)
Dummy DONATIONS	0.001 (0.008)	0.003 (0.007)	0.001 (0.008)
L1 Dummy DONATIONS	-0.013* (0.008)	-0.008 (0.007)	-0.010 (0.007)
DONATIONS % of GLP	-4.475 (4.217)		-4.869 (4.059)
L1 DONATIONS % of GLP	9.493** (3.764)		0.094** (3.709)
FEMALE	0.012 (0.013)		
EXPENSE %	0.008 (0.021)		
AGE	0.000 (0.000)		
BORROWERS per OFFICER	0.021 (0.022)		
GROSS LOAN PORTFOLIO (GLP)	-0.196 (0.309)		
BORROWERS	0.135 (0.210)		
R <sup>2</sup>	0.610	0.601	0.601

*Table 17 IV-regression with portfolio at risk of more than 90 days, without robustness check.*

*\*\*\* significant at 1% level, \*\* significant at 5% level and \* significant at 10% level.*