Profitability and outreach of microfinance: Mission drift theory and evidence from Uganda

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Tuuli Ylinen

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PROFITABILITY AND OUTREACH OF MICROFINANCE:
MISSION DRIFT THEORY AND EVIDENCE FROM UGANDA

The microfinance movement has received enthusiasm as a poverty alleviation tool that has the potential to become a self-sustaining industry. Large-scale poverty reduction through financially sustainable institutions is the ultimate promise of microfinance. However, in the 1990s, a debate emerged regarding the possibilities of achieving this promise. Others argue that microfinance institutions should reduce their dependency from donors and governments by becoming financially self-sufficient, commercial institutions that can borrow from the commercial capital markets and that way grow to serve large numbers of poor people. Others, however, fear that a profit-seeking approach into microfinance will result in the poorest of the poor clients being discarded; a phenomenon called mission drift.

The debate on mission drift still remains unsettled, and there is a clear need for representative empirical studies that attempt to identify the patterns of profitability and outreach of microfinance. The aim of this thesis is to shed light on this ongoing debate by studying whether mission drift is a justified worry: is there evidence of a trade-off between the financial performance and depth of outreach of microfinance?

This thesis studies the research question both by reviewing the relevant literature and earlier empirical evidence from both sides of the debate, and by conducting an empirical analysis of profitability and outreach in a case country; Uganda. The empirical analysis employs the 2006 Census of Tier 4 Microfinance Institutions in Uganda, which offers a representative picture of the microfinance industry in the country. Profitability patterns are studied by comparing the performance of different groups of institutions. A regression analysis on the individual lenders of Uganda studies the trade-offs between profitability and outreach to determine whether these institutions are susceptible to mission drift.

The main finding of the thesis is that mission drift is a possible concern for certain institutions. Institutional forms and methods of operation have an important effect in determining the possibilities of profitability and outreach. The regression analysis on Ugandan individual lenders finds evidence that increased profitability tends to worsen outreach, though this finding is not conclusive. Further attention needs to be paid to this possibility of a trade-off, and lending practices ought to be designed adequately in order to prevent mission drift.

Keywords: Microfinance, mission drift, Uganda, financial self-sufficiency, outreach

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1. Introduction

1.1. Background and motivation

Microfinance has proved a powerful way to bring financial services to the poor, who would otherwise be excluded from them. The problems caused by informational asymmetries that are typical to credit markets are exacerbated in poor countries, because poor people lack collateral to secure their loans and the weak legal systems cannot secure enforcement if a client reneges on their loan. The poor are therefore typically unable to borrow from formal financial service providers. This lack of access can create persistent poverty traps and income inequality. (Beck, Demirgüc-Kunt and Levine 2007; World Bank 2008) Microfinance has therefore been greeted with enthusiasm, as its innovative loan contracts have made the extension of small loans to the poor possible, and loan repayment rates have in general been very high, even close to 100 % (Armendáriz de Aghion and Morduch 2005).

But high repayment rates have not yet been turned into profits. Most microfinance institutions (MFIs) still depend on donations to a great extent. The 'ultimate promise' of microfinance is, however, to offer financial services to the poor in a profitable way. (e.g. Morduch 1999b) A debate regarding the profitability of microfinance emerged in the 1990s and still remains unresolved. Others, mainly big international donor organizations and some microfinance networks, argue for self-sufficient microfinance institutions, meaning that they should be able to cover their costs by the revenue their services create. As microfinance institutions reach financial self-sufficiency, they would be able to borrow from the commercial market and cut their dependency from donations and subsidies. In other words, a more commercial approach to microfinance practices is called for. The proponents of this ideology argue that this is the way for microfinance to reach access to a larger asset base to finance their operations than by relying on donors, and thus to serve an absolutely greater number of poor people. (Morduch 2000; Bruck 2006; Ghosh and Van Tassel 2008)

The other side of the debate however fears that when microfinance institutions pursue profitability and turn into commercial institutions, they will end up serving wealthier clients who can absorb larger loans, and that these clients crowd out the poorest ones. They are

worried that as big donors push the ideology of profitability in the microfinance industry, the poorest clients will be excluded from credit, even though serving them was the original idea of microfinance. They do not feel that the increase in the number of relatively wealthier low-income clients served corresponds to the mission of poverty reduction in the same way as serving the poorest clients would. (Morduch 2000; Bruck 2006; Ghosh and Van Tassel 2008) This phenomenon of turning away from the poorest clients in the pursuit of profitability is called *mission drift*, which is the focus of this thesis.

There has been a clear lack of representative empirical studies that would address the issue of mission drift, which is most likely why the two sides of the debate have not been able to converge. Cull, Demirgüc-Kunt and Morduch (2007) performed the first analysis that explicitly studied the determinants of mission drift with a larger dataset (over 100 microfinance institutions). But even their study does not offer a representative picture of the microfinance industry, as they employ a special subsample of leading institutions. The study by Mersland and Strom (2010) improves on Cull et al.'s (ibid.) analysis by employing panel data, but it, too, suffers from the same lack of representativeness.

1.2. The research problem and methodology

The goal of this thesis is to enlighten the discussion regarding mission drift in microfinance. The debating parties have yet not been able to converge, mostly because of the lack of empirical analyses. There is therefore still no consensus whether mission drift is a justified worry or whether microfinance institutions are able to pursue higher profitability without crowding out the poorest borrowers. The research question this thesis aims to answer is therefore the following: *Does the pursuit of profitability tend to drive microfinance institutions away from the poorest borrowers?* In other words, the thesis studies whether there is evidence of a trade-off between the profitability and outreach of microfinance.

The question is answered by reviewing existing evidence and the arguments on both sides of the debate, and by performing an empirical analysis with a representative dataset of the microfinance industry of one country. The case country in question is Uganda, where a microfinance census performed in 2006 offers insight into the workings of the country's microfinance industry. The focus on one country is an improvement on the earlier studies

since the data represents the whole variety of microfinance institutions in the country, whereas the earlier multi-country studies focus on the leading institutions that are committed to achieve financial self-sufficiency and are able to provide extensive and high-quality information.

The empirical part studies the research question by analyzing both the profitability and outreach patterns in Uganda. Profitability is studied by comparing profitability levels between different groups of institutions. Outreach is studied with a static regression analysis, which makes it possible to determine whether the microfinance institutions of the case country are susceptible to mission drift: this would be indicated by profitability measures having a deteriorating effect on outreach measures. Both analyses are performed so that it is possible to test earlier findings regarding profitability and outreach.

1.3. Main findings

The literature review and empirical analysis of this thesis lead to the conclusion that mission drift *is* indeed a relevant worry for some microfinance institutions, but not necessarily for all. Though this statement sounds inconclusive, it is in fact important to understand that institutional factors may affect how well an institution is able to reach both the social and economic goals. Among these institutional factors are the lending methodology, cost structure and operating environment. A wider perspective into the development of the industry is therefore needed in order to avoid mission drift.

The empirical analysis confirms earlier findings regarding differences in profitability levels between different institutional types. In Uganda, non-governmental organizations (NGOs) are the least often profitable relative to other institutional forms, and similarly group lenders are distinctively less frequently profitable than are institutions using other kinds of loan contracts. Regarding outreach, the analysis yields conflicting results to those of the reference study (Cull et al. 2007) by implicating that individual lenders in Uganda experience a trade-off between their financial performance and outreach. The trade-off is indicated to be relatively small, meaning that at least at the studied moment Ugandan institutions do not tend make large shifts away from their poorest clients as their profitability is increased. However, this could be changed in time as the microfinance industry develops. Older institutions are also found to

perform worse on outreach than younger ones, but institution's size is not indicated to be a significant factor of mission drift. The statistical significance of the results is not conclusive, though, leaving room for further analyses. The results suggest that not all institutions are able to reach the two goals, and there is therefore demand for various types of institutions: those reaching out to the poorest borrowers, and those reaching out to a larger number of relatively better off poor borrowers. Further studies are needed in order to better understand how the various factors affect institutions' profitability and outreach. A better understanding of these factors could enable the designing of microfinance operations to make these two goals more compatible.

1.4. Central definitions

Microfinance refers to the provision of a variety of financial services to the poor in a way specifically designed to suit the needs of poor people and the challenging contexts of poor regions. These services include credit, savings facilities and insurance, though the focus in this thesis is on credit services.

Mission drift is a phenomenon whereby the microfinance institutions allegedly shift their focus away from the poorest borrowers towards relatively wealthier poor borrowers in the pursuit of profits. The term **'poorest'** here refers to the poorest people of the potential client spectrum. It does not refer to the poorest segments of the population, who have not been a target client group of microfinance. The destitute poor are considered to be in need of other forms of aid than credit. The **'relatively wealthier poor'** refers to microfinance clients who are still considered poor or low-income, but who have relatively higher incomes than the poorest clients.

The abbreviation **MFI** is used to refer to a microfinance institution.

1.5. Structure of the thesis

This thesis is structured as follows: Chapter 2 gives a brief introduction to microfinance; the reasons it is needed in the first place, and what makes it work despite the problems inherent to

credit markets in developing countries. This introduction is useful in shedding light on the difficulties that microfinance institutions might experience in achieving profitability and good outreach. A review of recent ideological changes in microfinance is also given. Chapters 3 and 4 study the issues of profitability and outreach of microfinance, respectively. The discussion on profit-making and poverty-focused microfinance is so intertwined that it is not always possible to discuss the two separately, but in order to help combining the two issues later on, the two are first studied in these separate Chapters. The prevalence of profitability and current outreach are studied, and the relevant terminology is explained. Chapter 5 then discusses the arguments and theories for and against mission drift, as well as earlier empirical evidence of trade-offs between profitability and outreach. Chapter 6 presents the country context of the case country, Uganda, as well as the empirical analysis and its results. Chapter 7 concludes.

2. Introduction to microfinance

2.1. Credit market problems and microfinance's solution

Financial sector efficiency is often included as a key factor for economic development. Access to credit is crucial for the economic and social development of poor rural economies in many ways. Credit is required to finance working capital and investment in fixed capital, to smooth consumption when incomes experience seasonal fluctuations, and to overcome sudden, surprising events such as illnesses. (e.g. Ghosh, Mookherjee and Ray 2000) Especially the poor stand to benefit from access to credit. Financial development affects both by boosting aggregate growth of the country and by changing income distribution in favor of the poorest quintile of the population. Lack of access to credit can instead create persistent income inequality or poverty traps. (Beck, Demirgüc-Kunt and Levine 2007; World Bank 2008)

Credit markets often work inefficiently in poor and rural regions: the only source of credit that poor individuals typically have is from informal sources such as friends, relatives, and local moneylenders. Moneylenders' interest rates may exceed 75 % per annum, and

sometimes credit is altogether not available. Therefore, such loans are typically not used for productive purposes but rather for coping with emergencies. (Hoff and Stiglitz 1990) The problems that formal financial providers face are due to informational asymmetries, which are further exacerbated in poor-country contexts.

Problems of asymmetric information with regard to lending arise from the lender's inability to completely observe the borrower's characteristics, the effort the borrower exerts in his project, or his eventual returns from the project. These informational problems are called adverse selection and moral hazard, or, in other terms, the screening, incentive and enforcement problems. Stiglitz and Weiss's 1981 article pioneered in modeling informational asymmetries that lead to credit rationing in equilibrium, and today a concise description of agency problems in credit markets and microfinance can be found in the book by Armendáriz de Aghion and Morduch (2005) as well as in several articles (e.g. Ghatak and Guinnane 1999).

When clients are poor and work in the informal sector, determining the riskiness of potential borrowers and monitoring the actions taken by borrowers is rendered particularly difficult (Morduch 2000). Typically, the potential clients' characteristics are difficult to observe, but especially in poor areas, when the lender comes from outside the community, he is unable to access local information (at least without significant cost), and it becomes practically impossible (Stiglitz 1990). Lack of collateral together with weak legal environments, which are characteristic features of poor countries, serve to exacerbate the problems even further (Armendáriz de Aghion and Morduch 2005).

Without collateral, the borrowers have limited liability, meaning that they cannot repay any more than their current income. By using collateral in loan contracts, the objectives of the borrower and the lender could be aligned, and collateral could be used both as a screening and incentive device. As collateral both reduces default risk and lender exposure in the event of default, lenders would be more willing to provide loans against collateral. But poor borrowers do not have physical or financial assets to pledge as collateral precisely because they are poor. In addition, in many developing countries, extensive land titling or clear property rights do not exist, further impairing the poor's ability to offer collateral. The lack of collateral means that the lender has no recourse in the case of a defaulting borrower. This is one of the main

reasons for credit market inefficiencies in poor countries. (Besley 1994; Ghatak and Guinnane 1999; Armendáriz de Aghion and Morduch 2005)

Weak legal environments serve to make this problem worse. The borrower may refuse to repay his loan even if his project succeeded, if he knows that the legal system does not work well enough to force him to repay. Besley and Coate (1995) suggest that if the sanctions the lender can apply are incomplete, i.e. it is not possible for it to enforce repayment or seize collateral, the borrower will always default on his loan when the project return is very low. In such a case, a willing borrower will never be able to access credit without collateral. According to Stiglitz (1990), inadequate legal systems to enforce contracts are a major impediment to the development of institutions in developing countries. The lack of wide-spread informational systems and of proper documentation also means that the borrowers have no means to prove their earlier credit histories, their identities or their collateral (Besley 1994).

In addition, the supply of financial services is affected by high transaction costs mainly due to poor infrastructure (Beck, Demirgüc-Kunt and Martinez Peria 2007) and smaller loan sizes (Morduch 2000; Ghatak and Guinnane 1999). Poor clients typically require smaller loans, which have relatively higher fixed costs. Another cause is the low educational level of the clients; many are not literate or numerate (Besley 1994).

Despite the severity of these problems, microfinance has thrived in developing countries around the world. It is noteworthy that microfinance mechanisms enable to lender to cope with the obstacles of poor information, legal environments, the lack of collateral and low education levels of clients, even though he does not receive any more information on the borrower, and the other problems remain unchanged as well.

There is by now a vast literature on microfinance and the solution it provides to the credit markets of poor countries. The group lending method is probably the most famous of the lending innovations that microfinance has provided, and its importance should not be understated. But there are several other mechanisms that successful microfinance institutions (MFIs) employ in their lending operations. Many institutions are turning to individual lending contracts instead of group lending, and these additional mechanisms are especially important there. Stiglitz (1990) wrote the pioneering work on peer monitoring in group lending, and

several authors have followed (e.g. Besley and Coate 1995; Conning 1999; Ghatak and Guinnane 1999; Armendáriz de Aghion and Gollier 2000; Laffont and Rey 2003). Armendáriz de Aghion and Morduch (2005) provide an excellent guide to the economic theory of microfinance, and they have also emphasized the importance of other microfinance mechanisms in addition to group lending.

In a typical group lending contract, individuals without collateral – neighbors, members of a community or people who otherwise know each other – form a group in order to obtain a loan. Each member of the group obtains their individual loan, but they agree to jointly guarantee each other's loans: in the case that one member of the group defaults on his loan, each of the other members pays an equal portion of it to the lender (only in the case they themselves do not default, naturally).

The joint liability in group loan contracts "affects group formation, induces group members to influence the way other members select their projects, helps the lender avoid costly audits, and […] encourages borrowers to repay their loans without the lender imposing costly sanctions" (Ghatak and Guinnane 1999, 199). The group members' liability functions as collateral, but even more important than collateral is the incentive the members have to monitor the other members (*peer monitoring*) and the threat of social sanctions the other members are able to exert on the defaulting member (Stiglitz 1990; Besley and Coate 1995).

The group lending method is not without its drawbacks, either: for example, the group might decide to collude against the borrower and together default on their loan, or an individual member can be tempted to declare default because the other members will then repay for his part (Besley and Coate 1995; Laffont and Rey 2003). For other analyses on shortcomings of group lending, see e.g. Rai and Sjöström (2004).

Besides joint liability, other repayment incentive mechanisms have been developed in order to fine-tune loan contracts to meet the specific needs of the area of operation (such as sparsely populated rural areas) or the clients (e.g. mature, wealthier clients). These mechanisms include dynamic incentives (the promise of future loans for diligent repayers), regular and public repayments, collateral substitutes (such as forced savings or pledging personally valuable items as collateral), and targeting women as clients. In addition, some microfinance institutions offer additional services such as direct food aid or educational services to the

clients in order to improve the abilities of the borrowers themselves, thus improving their repayment abilities as well. Armendáriz de Aghion and Morduch (2005, Chapter 5), have described extensively these kinds of loan contract innovations 'beyond group lending'.

Group lending has also proved unsuitable for wealthier borrowers, which has led renowned institutions such as Grameen Bank in Bangladesh and BancoSol in Bolivia to offer individual lending contracts for their better-off clients. ACCION International network programs have also started to turn towards individual lending. (Armendáriz de Aghion and Morduch 2000) Some borrowers might prefer not to be obligated to others, and prefer independence to the security provided by the group. Attending group meetings and monitoring other group members can also be costly to the members due to for example large distances. (Armendáriz de Aghion and Morduch 2005, Chapter 4) Madajewicz's (2004) analysis takes into account that when monitoring is costly to the group members, joint liability imposes risk on the borrowers (which already Stiglitz [1990] noted). When borrowers are very poor, the effect of monitoring dominates, and group loans are preferred. But above some level of wealth, the effect of risk imposed by joint liability dominates, and the borrowers prefer individual loans. Madajewicz (ibid.) concludes that the borrowers may be better off when the lender offers a variety of contracts – small group loans for the poorest borrowers and larger individual contracts for the wealthier ones.

As individual lending is short of the incentive effects of group lending, some individual lending contracts require the borrower to pledge collateral, but many use other, innovative mechanisms to ensure repayment. For example, staff members in some cases visit applicants' businesses and homes to acquire information instead of relying on business documents, and local knowledge can be exploited by requiring loan applicants to obtain a 'character reference' from a member of the local community. In addition, the promise of future loans provides an important repayment incentive for the individual contracts as well. Some programs, such the Association for Social Advancement (ASA) in Bangladesh, have abandoned the joint liability method altogether, but still meet with clients in public group meetings, this way taking advantage of the threat of social stigma. (Armendáriz de Aghion and Morduch 2005, Chapter 5)

2.2. The ultimate promise of microfinance

The problems in credit markets described above illustrate why the poor are often excluded from credit. And as credit services could have important income-raising effects for the poor, there is clearly a need for improvements in financial markets to suit the needs of poorer borrowers. In many instances, this has been read as a justification for market intervention by the state, and poverty alleviation through subsidized credit was a central development strategy in many developing countries from the early 1950s through the 1980s. These attempts resulted in loan repayment rates below 50 %, huge costs to the governments from the subsidies, and, in the end, credit was often diverted away from the intended recipients to politically powerful non-poor groups. (See e.g. Morduch 1999b) Stiglitz (1990, 362) suggests that "[a]lthough governments have recognized the problem, they have paid insufficient attention to its root causes. If informational problems are the barrier to the development of an effective capital market, then there is no reason to presume that governmental lending agencies will be in a superior position to address these problems." Microfinance, instead, has succeeded in this, and repayment rates of several renowned programs exceed 95 %.

Microfinance has provided a promising way to provide financial services to the otherwise excluded poor through a market-based solution. It improves significantly on the earlier subsidized credit schemes by coping better with imperfect information and is better suited to the conditions of poor people. It also improves on traditional public welfare programs, which are accused of creating dependency and disincentives, by financing activities that increase self-employment and empowerment. And, as a market-based solution it has the promise of becoming an independent market, free from donor and government subsidies, and even integrating into a part of the formal financial system. Large-scale poverty reduction through sustainable institutions is the 'ultimate promise' of microfinance (e.g. Morduch 1999b; Cull, Demirguc-Kunt and Morduch 2007).

But as the high repayment rates of microloans have not yet turned into profits, a significant part of microfinance institutions still relies on subsidies and donations. In the 1990s, a debate emerged regarding the abilities of microfinance to actually reduce poverty on a large scale with such dependence on donations. Both sides of the still-ongoing debate wish to make an impact on poverty by offering financial services to the poor, but the other side of the debate argues that this is best done through financially self-sustainable institutions that access

commercial funding and mobilize savings from low-income clients. The opposing side fears that such a commercial approach would be disastrous to the poverty-reducing goals of microfinance, and would rather see continued support from governments and donors. (Morduch 2000; Robinson 2001)

An important change reflecting these differences has been the turn from 'microcredit' to 'microfinance', which covers more than just small loans: for example savings mobilization and microinsurance. This change in terminology reflects, besides the realization that the poor need and benefit from other financial services in addition to credit (see e.g. Chapter 6 in Armendáriz de Aghion and Morduch 2005), an ideological change. 'Microcredit' initially referred to socially-minded institutions with the intention of alleviating poverty by providing small loans to the poorest individuals. 'Microfinance', instead, reflects a more general movement towards 'better off' poor and the establishment of commercial, regulated microfinance institutions[1]. (Armendáriz de Aghion and Morduch 2005, Chapter 1; Robinson 2001)

The proponents of the commercialization ideology assert that by reaching high enough profitability levels by charging higher interest rates, the microfinance institutions can access commercial finance and reduce their dependency on donor funds, and regulation opens up the possibility of savings mobilization. However, the drive for the commercialization of microfinance has raised many worries among the socially-minded practitioners. Most importantly they fear that the poorest clients will be abandoned in the pursuit of higher profitability through higher interest rates and bigger loans, an event called *mission drift*.

An additional note regarding the terminology for poverty levels is in place. The use of words such as 'the poorest' can be misleading. This thesis acknowledges that microfinance programs, even the most socially-minded ones, do not typically serve the poorest segments of a country since they are considered to require other forms of help than credit (this is further discussed in Section 4.1). In this thesis, the term 'the poorest' is used to refer to *the poorest part of the potential client spectrum*, i.e. the poorest ones of those considered as suitable for microfinance programs. The discussion on mission drift in this thesis thus means turning

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[1] Note that in this thesis the term 'microfinance' is used without any such connotations, but rather as an umbrella term for all activities concerning the offering of financial services to low-income people. The term 'microfinance' has become prevalent in the public and in academic literature, without reference to this schism.

away from the poorest clients, not from the even poorer individuals – the destitute poor – that have never been a target group of microcredit programs.

The tension between the financial and social objectives of microfinance is the focus of this thesis. The following Chapters investigate microfinance from the viewpoints of both profitability and reaching out to the poor, as well as the possibilities of combining the two objectives in the way the 'ultimate promise' suggests.

3. Financial sustainability and subsidies

3.1. An increasing interest in financial performance

Already the earliest microfinance initiatives in the 1970s were highly successful in ensuring repayments. By the end of the 1980s, microfinance had already proved its potential of reaching significant numbers of poor clients, who were able and willing to repay the loans and the costs of credit. According to Christen (1997), this led to a significant increase in donor resources directed at the microfinance industry. Even though microfinance has been able to present a market-based solution to overcome the dearth of finance to the poor, and the poor proving themselves creditworthy as repayment rates climb over 95 %, microfinance institutions (MFIs) are still typically unable to reap profits from their operations and therefore rely heavily on subsidies.

Financial sustainability of the credit programs did not receive much attention in the beginning of the movement. But in the 1980s and 1990s, when the industry began to grow, there was a significant change in line of thought as policymakers and donors started calling for profitability from the microfinance institutions (Cull, Demirguc-Kunt and Morduch 2009). An important factor was the increasing criticism for failed subsidized credit programs. Especially the Rural Finance Program at the Ohio State University argued fiercely that the building of lasting, permanent financial institutions requires that they become financially sustainable. (Armendáriz de Aghion and Morduch 2005; Zeller and Johannsen 2006) Big, international donor organizations and microfinance networks absorbed this argument and became the voice

of the sustainability ideology. For example ACCION International, a microfinance network in Latin America, concluded that commercialization was the only way microfinance could ever serve large numbers of people, because commercial enterprises could tap into the capital markets that provided a larger asset base they needed in order to grow. BancoSol, a Bolivian MFI and an affiliate of ACCION, was the first nonprofit organization to transform itself into a private, commercial microfinance bank, and several other institutions have followed. (Bruck 2006)

The change in line of thought was also likely to be due to a change in the services portfolio: in the 1970s, microfinance programs were typically an integrated package of credit and training – more typical welfare projects that require subsidies – whereas in the 1980s the focus switched towards only financial services (Ledgerwood 2001). In addition, some leading programs feared that the flow of donations might not last forever, as donor priorities are alleged to change periodically (though this assertion has been contested as well, see e.g. Morduch 2000). To reduce the risk of such 'donor fatigue', they started pursuing for commercial financing and mobilizing resources from local savings. (Christen 1997, Ledgerwood 2001) And, in order to access commercial funds, the institutions needed to be financially sustainable. This recognition has led to what is called the 'financial systems' approach to microfinance, which suggests for example that poor people are able to pay high interest rates that cover the lender's transaction costs, and emphasizes institutional self-sufficiency (e.g. Ledgerwood 2001, Robinson 2001, see also the win-win proposition reviewed in Morduch 2000). By the mid-1990s, some leading programs had proven that commercial funding could be mobilized to serve poor customers (Christen 1997).

3.2. Measures and definitions

The sustainability of a microfinance institution can be defined in several ways, which all are, in essence, measures on the institution's ability to cover its costs. The change in the focus of these measures reflects the maturing of the industry (Ledgerwood 2001). Originally, the sustainability of a microfinance institution was considered as its ability to cover its operating costs by its income, regardless of its source. This meant that an institution was considered financially viable if it could attract enough donations to cover its expenses. Later, the idea of *self-sufficiency* was added to the concept of viability: a microfinance institution should be

able to generate enough income from the services it offers its clients to cover its expenses. In other words, the MFI should be maintained by its clients, not by donors. This level of sustainability, called operational self-sufficiency, still leaves all non-cash expenses (such as depreciation of fixed assets) out of the question, meaning that at this level capital holdings are still depleted over time. (Christen 1997; Morduch 1999b) A microfinance institution achieving operational self-sufficiency is not charging high enough interest rates to cover for inflation costs and commercial costs of capital. It could go on with its operations for some time without further donations, but not forever. Also, it could only attract a limited amount of commercial funding. (Christen 1997)

The next level of self-sufficiency is achieved when the institution is also able to cover the costs of inflation and other non-cash expenses, as well as to operate entirely without subsidized inputs (concessionary loans or grants). This level is called financial self-sufficiency. If the institution is not financially self-sufficient, it cannot survive without subsidies as it wouldn't be able to cover its costs of capital at market rates. (Christen 1997; Morduch 1999b)

There are specific measures with which to calculate an institution's self-sufficiency. Today, the **Financial Self-Sufficiency** ratio (FSS)[2] is perhaps the most used indicator. It measures the operating and financing costs of the MFI against the income generated from its operations. **Operational Self-Sufficiency** (OSS)[3] is a similar ratio, but as described above, it does not take capital costs into account. The **Subsidy Dependence Index** (SDI)[4], developed by Yaron (see e.g. Yaron 1992), is an alternative measure, suggested to complement the concept of FSS. The SDI measures the required percentage increase in a subsidized institution's on-lending interest rate in order to make it subsidy-independent. A recent article (Gaul 2009) reviews the relative benefits and pitfalls of both. The differences boil down to different points of view: the FSS can be considered more appropriate for internal analyses by the MFI,

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2 FSS = adjusted financial revenue / (adjusted financial expenses + adjusted loan loss provisions + adjusted operating expenses). Definition from MicroBanking Bulletin (2009, 43).

3 OSS = operating income / (operating expenses + loan loss provisions). Definition from Ledgerwood (2001, 217). The definitions of OSS and FSS sometimes vary in the literature (Ledgerwood 2001). For example, the MicroBanking Bulletin (2009, 43) uses the definition OSS = financial revenue / (financial expenses + net loan loss provision expenses + operating expenses); which Cull et al. (2007) also employ.

4 The calculation of the SDI is a bit more space consuming and is therefore left out. For the definition, see Yaron 1992.

whereas the SDI measures the costs to society, and is therefore more useful to policymakers and donors. However, as the SDI requires estimating the alternative, commercial, cost of capital, it can often be difficult to calculate. In addition, the fact that the SDI worsens as the institution takes on more subsidies can be confusing, as any institution would probably accept any additional funds made available to them. Another drawback is that the index measures, ceteris paribus, by how much the MFI would have to increase its revenue from its operations if it didn't have access to subsidized funds. An institution that doesn't have access to donor resources, would however most likely adapt its business practices to meet such conditions – overriding the ceteris paribus conjecture. (Armendáriz de Aghion and Morduch 2005, Chapter 9)

In addition, **Return on Assets** (ROA)[5], which relates profits to the size of the institution, is also a typical measure in the literature concerning the profitability of microfinance. Whereas the cost-recovery measures described above are based on a donor mentality (indicating whether the target MFI is in need of more subsidies or not) with ROA it is possible to compare the profitability of microfinance as an investment with that of other possible investments. Return on equity (ROE), which is a typical measure in the banking sector, is not suitable for the microfinance industry, however, as it assumes that institutions among a peer group are fundamentally similar: "[T]he peculiarities of the microfinance world limit significantly the model's application in the short run." (Christen 1997, 89) ROA on the other hand makes it possible to compare MFI profitability with that of other commercial banks and projects, which typically do not use self-sufficiency measures for profitability analysis.

In this thesis, the terms 'profitability', 'sustainability' and 'self-sufficiency' are used interchangeably to refer to an institution's financial self-sufficiency, i.e. its ability to operate without subsidies.

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5 ROA = (Adjusted net operating income - Taxes) / Adjusted average total assets. Definition from MicroBanking Bulletin (2009, 43).

3.3. How widespread is financial self-sufficiency in microfinance?

As was already mentioned, a significant number of microfinance institutions are still highly dependent on subsidies, either directly in the form of grants or indirectly in the form of concessional loans (e.g. Armendáriz de Aghion and Morduch 2005). Even though this assertion is made in many articles and books, representative studies on the prevalence of profitability are few, as most studies are based on few case institutions or special subsamples of the industry. This is of course natural as there are thousands of microfinance providers around the world but extensive datasets are scarce.

One such compiled dataset is provided by the Microfinance Information eXchange, Inc. (MIX), a non-profit company dedicated to improving the information infrastructure of the microfinance industry by promoting reporting standards and providing data. These datasets have been published in the company's semi-annual publication, MicroBanking Bulletin, along with several studies on the profitability and other aspects of the microfinance institutions. The dataset consists of those institutions that have chosen to report to the MIX organization, and is thus a very special sub-sample of the whole industry: they all share a commitment to achieving financial sustainability, and are also willing to open their accounts for the studies.

Figure 1: Number of financially self-sufficient and not self-sufficient MFIs, 2005-2007. (N=487)
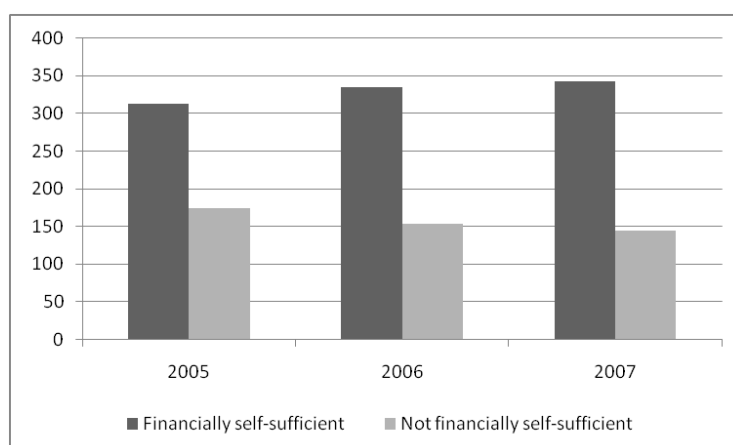
Source: MicroBanking Bulletin 2009.

The most recent analysis in the Bulletin (MicroBanking Bulletin 2009) studies 487 MFIs from 78 countries, which represent approximately 75 % of all borrowers at the end of 2007, according to the Bulletin. The prevalence of financial self-sufficiency among these institutions is illustrated in Figure 1: the number of self-sufficient institutions has grown, and

the number of those who do not reach self-sufficiency has diminished among these leading MFIs. During 2003-2005, with only 200 MFIs in the dataset, the trend was similar (MicroBanking Bulletin 2007). Over ten years ago, the portion of financially sustainable institutions was less than 50 % (MicroBanking Bulletin 1998).

Quite expectedly, those that did not reach financial self-sufficiency during the sample period 2005-2007 did, on average, reach operational self-sufficiency but still showed negative levels on return on assets, as Table 1 illustrates. Similarly, the financially self-sufficient group was able to reach a higher leverage on commercial capital, even though the commercial funding liabilities ratio was over 50 % and on the rise for the not self-sufficient group as well. It is noticeable, however, that even the self-sufficient ones that would be able to cover their expenses by the revenue they generate, still use non-commercial funding (i.e. soft loans and grants) as well.

Table 1: Selected statistics on the financial situation of the MFIs. Group medians for financially self-sufficient and not financially self-sufficient MFIs. (N=487)

	Return on Assets			Operational self-sufficiency			Commercial Funding Liabilities Ratio			Number of MFIs in the category		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
Financially self-sufficient	2,9 %	3,4 %	2,9 %	1,26	1,26	1,25	64 %	71 %	80 %	313	334	343
Not financially self-sufficient	-5,4 %	-3,7 %	-3,5 %	1,01	0,99	1,00	52 %	57 %	59 %	174	153	144

Source: MicroBanking Bulletin 2009.

Note: Commercial funding liabilities ratio = (Voluntary and time deposits + Borrowings at commercial interest rates) / Adjusted average gross loan portfolio. Other terms as defined in Section 3.2.

In their 2009 article, Cull et al. analyze MIX datasets and find that a MFI does not have to be a for-profit company to achieve profitability: even the non-profit organizations are able to reach financial self-sufficiency and reduce their dependency on donations (illustrated by several white dots in the upper left quadrant in Figure 2). The for-profits tend to cluster in the upper left corner of the graph (being profitable and using little subsidies), whereas non-profits are spread evenly, and most of them cross the profitability threshold. According to the authors, these notions are robust to age, location and financial structure of the institutions.

Figure 2: The relationship between profitability and dependency on donations.
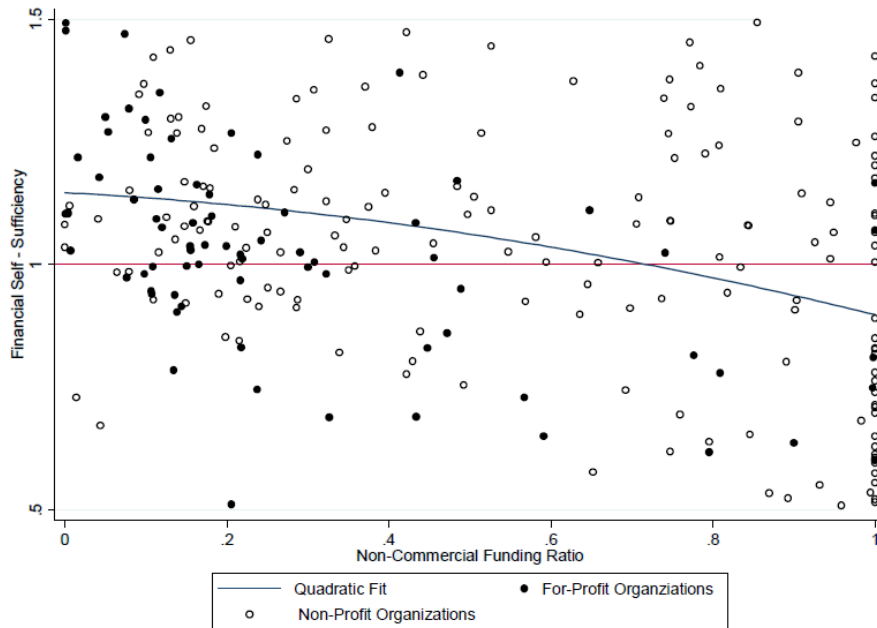
Source: Cull et al. 2009, Figure 1.

The 2009 paper of Cull et al. is one of the few empirical studies that employ large datasets. But even though the institutions in these data represent a large part of the microfinance industry measured as amount of loans and borrowers, they are still not representative of the entire industry. The commitment to financial sustainability and the quality and extent of their data makes the institutions in Bulletin datasets a very special subsample. It is highly probable that other institutions with less commitment on profitability fare even worse on sustainability measures. It has also been estimated that no more than 1 percent of microfinance programs provided by non-governmental organizations (NGOs) world-wide were financially sustainable in the end of the 1990s, and perhaps another 5 percent of them will ever achieve sustainability – the continuation of the rest of the institutions remaining dependent on donations (Morduch 1999b).

Case studies that study the profitability of only a few microfinance institutions are excluded from this Section as they do not offer a representative description of the industry as a whole. There is clearly a lack of wider, more representative analyses due to the need of better data. The data reviewed above, however, provides some indication of the prevalence of profitability in the industry and its increasing trend.

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4. Outreach

4.1. Who can benefit from microfinance?

The original aim of microfinance, beginning with Muhammad Yunus's experiments in Bangladesh in the 1970s, was to offer banking services to those who are excluded from them because of their poverty – serving the poor, in short. The early advocates noticed that the poor can benefit tremendously from access to loans by starting up small businesses or expanding them, thus increasing their incomes and reducing their vulnerability. Regardless of this, there is some controversy about whom should microfinance serve, and what kind of poor people can, in the end, benefit from it.

There are many levels of poverty. Someone's income level may be close to the poverty line, others live below the minimum subsistence level. Others have some employment, others none, and some have their own microenterprises. It has been asserted that the destitute poor have little to benefit from microfinance and would be better served by other kinds of direct welfare programs such as food aid rather than credit (e.g. Robinson 2001). Hulme and Mosley (1996, Chapter 5) study this empirically with their case institutions and find that the impact a loan can have on the borrower's income level is directly and positively related to the borrower's original level of income. This is because the relatively wealthier poor have, for example, more information about market conditions and can accept more risk than the poorest individuals without threatening their minimum needs for survival. The better off poor are typically better equipped with non-financial characteristics, rendering their investments more profitable than those of the poorer individuals. However, the poor are often considered as able to engage in profitable activities and to pay interest for their loans. (e.g. Morduch 2000)

Many writers suggest that the main benefit the very poor can realize from microfinance is, actually, consumption smoothing (e.g. Morduch 1998, Zeller and Johannsen 2006). Those just above or just below the poverty line may be able to use loans more effectively for productive purposes, meaning that increasing their income is more feasible than that of the poorest. "Thus, expanding financial services may improve the welfare of the very poor, but not necessarily lift them out of poverty because of their lack of access to markets, technology,

knowledge, and other factors that expand the production frontier." (Zeller and Johannsen 2006, 4) Morduch's (1998) empirical evidence supports this notion.

From this correlation between impact and poverty, Hulme and Mosley (1996, Chapter 8) draw a theory of an impact-possibility frontier (Figure 3). The borrowers' initial income limits the extent to which it is possible to increase the total income-increase impact and reach the very poor at the same time. The upward-sloping frontier in the Figure describes the direct relationship between the clients' poverty levels and the in change their income levels as a result of loans. Similarly, a downward-sloping loan impact relationship can be determined between the share of poor borrowers in the client portfolio and the achieved total impact: an institution with many very poor clients is alleged to achieve little poverty impact overall.

Figure 3: Impact-possibility frontiers of 5 case MFIs.
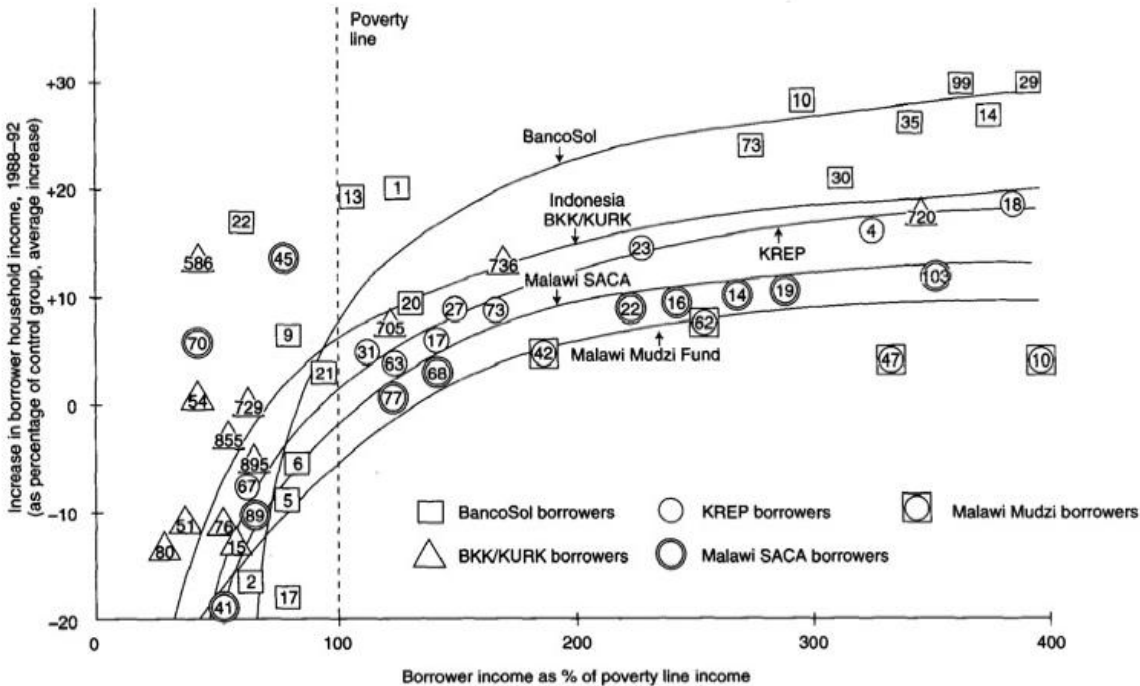
Source: Hulme and Mosley (1996), Figure 8.1a.

The specific impact of microfinance is difficult to measure. Lenders do not randomly pick their clients; they rather choose carefully where to work and with whom. Inclusion in a credit program may be due to applicants' unmeasurable attributes such as entrepreneurial ability. This is illustrated in Figure 4: participants often have higher income and better entrepreneurial

ability (or other such attributes) already before their first loan. Their entrepreneurial ability can affect both their initial income and their potential for income growth. In such a case, the benefits the borrower is able to accrue from his loan might be due to these other attributes and not just access to credit. (Armendáriz de Aghion and Morduch 2005, Chapter 8) It is possible that these economically active and able poor might have been able to improve their well-being even without the presence of microcredit. (World Bank 2008) Accurate impact studies that are able to isolate the sole impact of being part of a microfinance program are still few.[6] Their findings do not attest the income-generating effect of microfinance without controversy.

Figure 4: Participants and non-participants of a microfinance program in a given village, in relation to their hypothetical entrepreneurial ability.
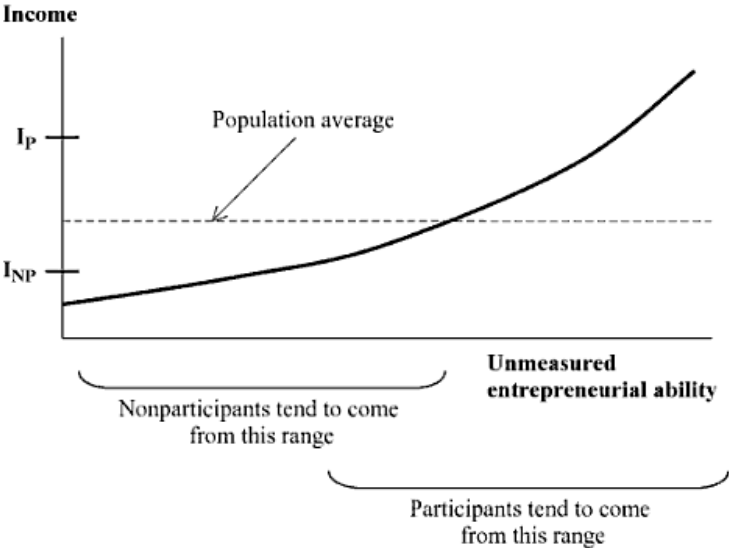
Source: Armendáriz de Aghion and Morduch 2005, Figure 8.2.

Raising the incomes of the poor is not, however, the only measure with which to determine microfinance programs' success or failure. Consumption smoothing is already an important benefit, and other reported outcomes are as various as improvements in nutrition and education, the social empowerment of otherwise repressed individuals, diversified income sources and risk reduction. Besides access to credit, these impacts can be brought by the simple inclusion in credit programs, which increases the participants' social capital. The poorer borrower's income-raising abilities can also be enhanced by offering them other services besides credit, such as food aid or education and business training (Armendáriz de Aghion and Morduch 2005, Chapter 8; Montgomery and Weiss 2005). Besides, anecdotal

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[6] For a review, see e.g. Armendáriz de Aghion and Morduch 2005, Chapter 8, and World Bank 2008, Chapter 3.

evidence abounds regarding the successes that very poor individuals have had when given access to credit (see e.g. Bruck 2006).

Even though the better off poor can sometimes be able to raise their incomes more than the poorer borrowers, extending credit to the poorest individuals can have important welfare-enhancing results as well. This thesis will not go further into impact studies, since the aim is to discuss whether it is possible for microfinance institutions to benefit the poorest clients and still remain profitable. But this brief review also illustrates the controversies of the goal of reaching out to the poorest, and shows that the inclusion of relatively wealthier borrowers is not an entirely negative trend.

4.2. What is outreach? Definitions and measures.

The two most usual aspects of outreach – of reaching out to the poor –in the literature are its depth and breadth. *Depth* of outreach refers to the poverty level of clients served, whereas *breadth* of outreach refers to the scale of operations of a MFI. There is some disagreement in the literature with regard to the relative benefits of depth and breadth of outreach. The pro-poor microfinance approach would rather reach out to the poorest individuals of the society, advocating thus that depth of outreach is more important for achieving the social objective of microfinance, whereas the proponents of sustainable microfinance are more interested in opening access to a wide range of unserved or underserved clients (Rhyne 1998).

Regarding the importance of scale of microfinance operations Navajas et al. (2000, 336) put it simply: "Breadth matters since the poor are many but the aid dollars are few." According to the breadth logic, the microfinance industry should have large-scale outreach in order to make a difference in the world's poverty levels. Some argue that shallow depth can be compensated by the breadth of outreach or that it is even more important than depth (e.g. Navajas et al. 2000, Robinson 2001). The objective functions of microfinance institutions might thus differ in the weight they assign to different aspects of outreach.

In addition to considering outreach with respect to poverty, a microfinance program might decide to target a specific client group that is considered restricted from access to financial services either because of their characteristics or because of physical constraints. Such target

groups include women, people in rural areas (as opposed to urban ones, rural areas are typically sparsely populated and have poorer infrastructure), ethnic minorities, illiterate people, and so on. In addition to those reaching the very poor, those serving hard-to reach clients can also be said to have deep outreach.

In fact, women are a typical target group of microfinance programs. Women are more often credit-constrained than men in developing countries, because men typically work in larger businesses in the formal sector, while women remain self-employed in the informal sector. Because they cannot access credit from formal financial institutions, women are more likely to accept the peer pressure and the time-consuming methods that group lending entails. Moreover, the lender might have a financial incentive to provide loans to women, as they are typically more prudent in their use of money and have been proved to demonstrate higher repayment rates. (Armendáriz de Aghion and Morduch 2005, Chapter 7)

Even if microfinance might be unable to reach the poorest population segments as discussed in the preceding Section, those excluded from credit because of their poverty might be able to indirectly benefit from the relatively wealthier people's access to credit. Spillover effects are possible from e.g. increased employment possibilities for non-participants. (Morduch 1999a; Montgomery and Weiss 2005; Zeller and Johannsen 2006)

Although the actual poverty level of microfinance institutions' clients can be impossible to measure for a researcher external to the MFI, there are several simple variables that can be used as proxies for outreach. The most common indicator for depth of outreach is the **size of disbursed loans**[7]. The loan size approach assumes that only the poorest individuals are willing to take the smallest loans, and that wealthier individuals require larger ones (Christen, Rhyne and Vogel 1995; Morduch 1999b). "People with small incomes have sufficient cash flow to make only very small debt service payments. Therefore, […] small loans will be closely tied to low incomes." (Christen et al., 8) It is often useful to relate the loan size to national income levels, as a certain number of dollars can have varying meanings in different countries. Armendáriz de Aghion and Morduch (2005) suggest a loan size less than 20 % of GDP per capita of that country as a poverty threshold. As countries' income distributions can

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[7] Average loan size = value of loans disbursed / number of loans disbursed. Average outstanding balance is a similar measure, focusing on the size of loans outstanding at the end of the year.

also vary significantly, relating the loan size to the income of the poorest (e.g. the poorest the quintile as in Cull et al. 2007) can be even more helpful when making international outreach comparisons. The **share of women borrowers**[8] is also often used as an outreach indicator, and, similarly, the share of rural clients or ethnic minorities could be used as one when outreach to specific discriminated groups is of concern.

The use of such simple measures as average loan size and share of women borrowers as indicators of an institution's outreach has received criticism as well (e.g. Hatch and Frederick 1998; Schreiner 2001). The loan size proxy has been accused of being an exceedingly rough and inaccurate measure that fails to take into account other important aspects of the MFI's business practices. For example, a MFI might choose to always disburse loans of the same size to first-time borrowers. Therefore, additional information should preferably be used along with loan sizes. But as extensive and quality data are often hard to find, these simple and rough measures are still very common and useful, and are furthermore readily available and comparable across institutions.

4.3. Current outreach of the microfinance industry

Microfinance has grown immensely since its inception in the end of the 1970s. According to the Microcredit Summit State of the Campaign Report (Daley-Harris 2009), in 2007 microfinance programs already reached 100 million of the world's poorest families, and served over 150 million clients altogether. "While more than 100 million people received a microloan in 2005, it was not until 2007 that the 100 million *poorest* marker was reached." (Ibid, 1; original emphasis)[9] In addition, 83 % of the poorest clients reached were women. This outreach figure consists of 3 552 microcredit organizations reporting to the Microcredit Summit organization, which is a significant sample of the world's microfinance industry. Part of the growth of microfinance as reported by the Microcredit Summit organization and illustrated in Figure 5, is the result of new institutions reporting for the first time to the

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[8] Share of women borrowers = Number of women borrowers / Total number of borrowers. The share can be measured both at the end of the year (borrowers with outstanding loans) or during the year (all loans disbursed during the year).

[9] The Microcredit Summit's definition of the 'poorest' is a measure of people living below the threshold of 1 US dollar a day defined by the World Bank.

Summit. Nevertheless, we can conclude from the figure that today, microfinance reaches a significant number of people, and especially poor people. To give an idea of the scale of outreach, according to the World Bank, there were 876 million people living under the poverty line of 1 US dollar a day in 2005 (Chen and Ravallion 2008).

Figure 5 also displays the evolution of the depth of outreach. The share of poor clients has risen from 56 % in 1997 to 69 % ten years later. But the share was the highest in 2005 (72 %), after which it has declined a little. Whether this can be interpreted as normal annual fluctuation or as an indication of some microfinance institutions moving towards the upper segments of the client spectrum cannot yet be determined. Table 2 presents regional outreach figures for 2006 and 2007. Breadth of outreach is clearly greatest in Asia and the Pacific, which has also the deepest outreach together with Sub-Saharan Africa. The lowest depth of outreach in Latin America and the Caribbean is most likely a result of having lower poverty levels than other regions (Armendáriz and Szafarz 2009) and of a different – more commercial – approach to microfinance that is characteristic of the area (Christen 2001).

Figure 5: Numbers of clients reached, 1997-2007.
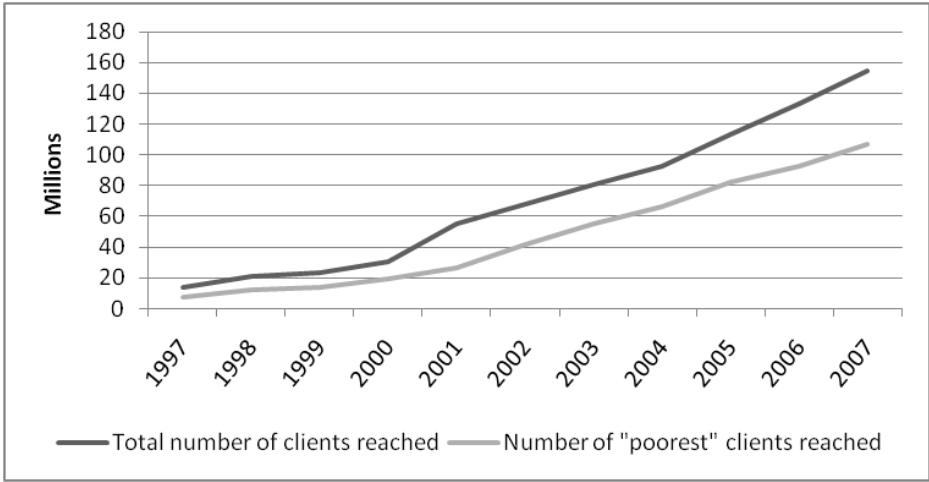
Source: Daley-Harris 2009, Table 5.
Note: 'Poorest' refers to people living below the $1 per day poverty line.

In addition to regional differences, the legal format of the MFI and lending methods employed can affect its outreach. For example, Zeller and Johannsen (2006) find that in Bangladesh, governmental institutions such as commercial banks have broader but NGOs deeper outreach both in terms of poverty levels and share of women clients. NGOs, microbanks with NGO-origins and cooperatives are the best performers with respect to

poverty outreach. In Peru they find less such differences related to operational type, and in general new clients in Peru seem to be in large part better off compared to Bangladesh (this difference is also reflected between the corresponding continents in Table 2). Their results do not provide conclusive evidence as to whether the type of institution really matters for outreach, but instead the mission of the institution could be a determining factor, and the mission is likely to be correlated with institution type, since especially NGOs are known to have a pro-poor attitude. Cull et al. (2009) also find these kinds of differences between NGOs, other non-bank financial institutions and banks: the average loan size relative to the income of the poorest quintile for these groups is 48 %, 160 %, and 224 %, respectively. A similar pattern emerges regarding the share of women borrowers in their portfolios.

Table 2: Regional breakdown of outreach, 2006 and 2007.

Region	Number of total clients in 2006	Number of poorest clients in 2006	Share of poorest clients 2006	Number of total clients in 2007	Number of poorest clients in 2007	Share of poorest clients 2007
Sub-Saharan Africa	8,4	6,2	74 %	9,2	6,4	69 %
Asia and the Pacific	112,7	83,8	74 %	129,4	96,5	75 %
Latin America & Caribbean	6,8	2,0	29 %	7,8	2,2	28 %
Middle East & North Africa	1,7	0,8	44 %	3,3	1,1	34 %
Developing World Totals	129,6	92,7	72 %	149,7	106,2	71 %

Source: Daley-Harris 2009, Table 7.

Note: 'Poorest' refers to people living below the $1 per day poverty line.

5. Trade-offs between financial self-sufficiency and depth of outreach: is mission drift a real worry?

5.1. A win-win outcome or mission drift?

With the emerged paradigm shift regarding commercialization, and with many NGO-led microfinance institutions transforming themselves into commercial banks, some pro-poor microfinance advocates have raised the worry that the original mission of these NGOs, poverty reduction, will lose out on profit-seeking activities. This has raised a debate on whether there are trade-offs between profitability and outreach, which could lead to *mission drift*.

The term 'mission drift' has been mentioned already a couple of times, but a more precise definition is in order at this point. The definition put forth by Cull et al. (2007) has been adopted by other authors as well and is therefore adopted in this thesis as well. They define mission drift as "a shift in the composition of new clients, or a re-orientation from poorer to wealthier clients among existing clients" (ibid, 126) related to the pursuit of financial sustainability. It should also be noted that mission drift ought not to be confused with other similar phenomena. Microfinance institutions might experience a natural rise in loan sizes for two reasons: clients who have shown prudent repayment performance are able to reach larger loans because of progressive lending practices; and in successful microfinance programs the clients might have been able to develop and expand their businesses with earlier loans, which leads to increased income and also a need for larger loans (Cull et al. 2007; Armendáriz and Szafarz 2009). These changes in the *existing* client base might drive the MFI to change its lending practices, as group lending, for example, is not necessarily suitable for individuals requiring larger loans (see discussion in Section 2.1), but this behavior is not what is meant by mission drift. However, these similar occurrences can make it difficult to identify actual mission drift, and also accentuate the need to examine outreach more accurately than by using mere loan sizes.

It is also relevant to ask whether mission drift is a justified concern since, as was discussed in Section 4, the poorest population has never been a target client group of microfinance, and they are considered less able to benefit from financial services as well. However, mission drift

concerns a turn away from the poorest part of the potential clientele (i.e. those that were already considered suitable for microfinance) and towards the more affluent. In such a case the original mission of reaching out the poorest is abandoned, and there would be people in the market who could benefit from financial services but who are denied access to them because they cannot be served profitably.

The 'sustainability camp' proposes that microfinance institutions that follow the principles of good banking will also be those that alleviate the most poverty. This win-win proposition focuses on the importance of breadth of outreach rather than its depth. The sustainability ideology has been advocated especially by certain microfinance networks and big, influential donors (such as ACCION International, the Consultative Group to Assist the Poor [CGAP], the US Agency for International Development [USAID] and the United Nations Development Programme [UNDP]). They have advocated for subsidies to be limited to the start-up phase of microfinance institutions and pushing for a more commercial orientation once operational. The other side of the debate – the 'poverty camp' – fears that along with the drive towards profitability, the poorest clients will not qualify for loans anymore. Muhammad Yunus, the founder of Grameen Bank in Bangladesh, has been one of the firmest advocates of the notion that wealthier clients will crowd out poorer clients. This poverty camp worries that this will lead to a major shift from the original mission of microfinance. (Morduch 2000; Bruck 2006; Ghosh and Van Tassel 2008)

The win-win argument is not reviewed here in its entirety, as the focus of this thesis is on discussing the possible trade-offs between profitability and outreach. For an elaboration on the argument, see Morduch (2000). He breaks down the 'win-win' argument piece by piece and shows why it does not always hold. Armendáriz de Aghion and Morduch (2005, 244) summarize the differences between the win-win and poverty camps concisely:

> "Those who oppose subsidization tend to assume a relatively flat distribution of social weights, low sensitivity of credit demand to interest rates, positive impacts of interest rates on returns, very low returns to investments by poorer households, and negative externalities of subsidized credit programs on other lenders. Those who are open to strategic subsidization, on the other hand, tend to put greater social weight on consumption by the poor, assume highly sensitive credit demand to interest rates, low impacts (or perhaps negative impacts) of interest rates on returns, moderately high (but not extremely high) returns to investments by poor households and small or beneficial spillovers onto other lenders."

However, the two opposing sides have also something in common. They both wish to have an impact on poverty by offering financial services to poor people who are otherwise excluded from them. Most microfinance institutions, including those in the sustainability camp, do have a social objective in addition to the economic. "[…] there is in fact only one objective – outreach. Sustainability is but the means to achieve it." (Rhyne 1998, 7) It is the perceptions on the means to deliver that goal that are different. "Thousands of clients can be served through either method [sustainability or poverty-focused]. But serving *millions* of clients on a long-term basis in multiple, competing institutions requires a financial systems approach." (Robinson 2001, 23; emphasis added) Poverty advocates fear that a commercial approach will compromise the programs' objectives (Bruck 2006). These socially-minded practitioners argue that microfinance should reach out to the 'core' poor, i.e. those between destitute and the wealthier poor, and assert that these core poor can "potentially benefit from microfinance services, even if average loan sizes are too small to allow the kinds of economies of scale that have delivered financial sustainability for well-known programs […]." (Morduch 2000, 618)

5.2. Why it can be difficult to cover costs: the problem with interest rates

Achieving self-sufficiency is not that easy, however, as the high prevalence of subsidies in the industry already shows. The high dependency on subsidies is no wonder, since even with innovations regarding lending methods and achievements in narrowing down organizational forms, it remains a fact that it is far more costly to lend small amounts of money to many people than to lend large amounts to a few. Microfinance also characteristically extends credit to rural and poor areas, which is another factor that increases operating costs. (Christen 1997; Morduch 1999b) However, in order to increase the financial self-sufficiency ratio of an institution, a MFI has two possibilities: to increase its income (portfolio yield), or to reduce its operational expenses or loan losses.[10]

Operational costs and loan losses can be cut with more efficient operations. Christen (1997) notes that some of the high profits in the industry have been built on significant sunk costs

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[10] Capital costs are also a factor in the FSS ratio, but they are not considered here since it is presumable that organizations that have not reached self-sufficiency already use the cheapest possible capital; grants and soft loans.

and operating losses of prior years. After these start-up costs or 'learning costs' are incurred, and the institutions mature, they are able to streamline their operations, e.g. their loan appraisal techniques, and to secure high repayment rates. An example of successful streamlining is ASA in Bangladesh, which has slimmed down its administration and developed simpler ways to manage loan contracts, so that less educated workers are needed, reducing labor costs significantly (Morduch 1999b). With their sample of 124 top MFIs, Cull et al. (2007) find out by using a regression analysis approach that cost containment has an important role in determining the sustainability of the MFI, regardless of its lending methodology (individual or group contracts, or village banking).

In addition to containing costs, financial sustainability is about generating enough income from the services the MFI offers, and the most obvious source of income is the interest rate charged for loans. Because of the poverty-reducing premise of microfinance, the view that the costs of borrowing must be subsidized because microborrowers are too poor to pay the full cost has prevailed (Christen 1997). The claim that interest rates should simply be raised to levels compatible with financial self-sufficiency, and that this would not reduce demand, is a central claim in the 'win-win' proposition put forth especially by researchers with donor-agency background (e.g. Rosenberg 2002, Rhyne 1998). By raising interest rates MFIs could reduce their dependency on donations, and higher profitability would allow them to access commercial lending. The study by Christen et al. (1995) on 11 leading MFIs found that the most financially viable programs differed from the less viable ones in their willingness to set interest rates at levels that would fully recover costs. "These programs chose to be financially viable, while other programs that held interest rates down chose to remain subsidy dependent. Although they may not have admitted it, these programs were subsidizing interest rates to clients." (Rhyne 1998, 6-7)

The argument for higher interest rates is based on a supporting claim that the poor are able to pay high interest rates, so that higher interest rates would not curb demand: "[…] *access* to finance tends to be a much more important issue than the *cost* of that finance" (Rosenberg 2002, 11, original emphasis). This claim is based on the empirical observation that poor people do pay exceedingly high rates to moneylenders (and also to some MFIs), and that profitable MFIs with higher rates also serve some poor clients. The proponents of this claim refer to the theory of diminishing marginal returns to capital, which asserts that with limited capital to invest in projects, the first investment of an individual goes to the best project, the

subsequent investment to a project with relatively lower returns, and so on. By this logic, the cash-constrained, poor individuals' projects should yield higher returns than richer individuals' projects (or even big companies such as General Motors, as asserted in Rosenberg 2002, 11), which would support charging higher interest rates from poor clients and lower rates from wealthier clients. The assertion on raising interest rates has, however, received a lot of criticism.

First, it should be acknowledged that even though some poor individuals are indeed willing and able to pay high interest rates, certainly not all of them are. Morduch (2000), for example, notes that there is a wide pool of clients who are not able to pay interest rates above 50 % who tend to be poorer and harder to reach with traditional programs. It seems that both sides of this argument are unable to support their claims with more than anecdotal evidence. Nevertheless, one should not resort to generalization: even if some poor individuals can pay high interest rates, it does not mean that all poor people can (and vice versa).

Some poor are indeed able to pay high rates: de Mel, McKenzie and Woodruff (2007) and McKenzie and Woodruff (2008) use randomized experiments to find out that cash-starved microenterprises are able to reap significantly higher returns to capital than market interest rates. But even though diminishing marginal returns might apply to a single individual or firm, holding all else constant, it does not apply *across* individuals or firms. Morduch (2000, 621) reminds that running a microenterprise requires more than just capital: "It requires skills, other materials, information, connections, transportation, etc. Since richer households tend to have more of these inputs, marginal returns to capital are often far higher for them than for poorer households." Another reason is that, even when assuming equal characteristics for rich and poor individuals, production technologies can exhibit increasing returns to scale over a relevant range. In such a case, the poor person might never be able to reach the scale required to compete with wealthier individuals. (Armendáriz de Aghion and Morduch 2005) These arguments suggest that it is the richer individuals that are willing and able to pay the highest interest rates, rather than the poorest.

In addition to the arguments just reviewed, there is one more point of view that goes against raising interest rates too high. According to the theory of asymmetric information, raising interest rates can exacerbate adverse selection and moral hazard problems, screening out the most reliable borrowers and undermining loan repayment rates (Stiglitz and Weiss 1981). The

empirical work of Cull et al. (2007) is able to confirm these predictions. They find that, for the individual lenders, raising interest rates is related with increased financial self-sufficiency, but only up to a point. After a critical threshold (in their sample 60 %), higher interest rates decrease financial self-sufficiency. The same result is found also by studying portfolio at risk: the relationship between loan delinquency rates and portfolio yield is also increasing up to a point, after which it is decreasing.

As to the argument that the poor are relatively interest-insensitive, empirical evidence counters that assertion as well. Dehejia, Montgomery and Morduch (2005) analyze a natural experiment at a moment when two operational branches of a credit cooperative in Dhaka, Bangladesh, unanticipatedly changed their credit contract terms but one did not. Contrary to the argument presented above, they find that interest elasticities are negative, and that poorer clients are more sensitive to the interest rate than wealthier ones. By raising interest rates to cost-covering levels, the bank was able to improve its financial condition, but at the same time it shifted away from the poorest borrowers. Similarly, Karlan and Zinman (2007) who perform a test with a consumer lender in South Africa, find that raising the interest rate in the loan offer has a negative effect on loan demand. In their study, the take-up elasticity to the interest rate offered is -0,28. When interest rates are already at higher levels than standard rates, an increase in the rate offered decreased loan take-up by six times more than at standard rates.

Perhaps acknowledging these problems, some microfinance institutions have tried to cover the costs of small loans to the poorest clients by extending services to better-off clients as well. By making a profit in the high-end services, the MFI can cross-subsidize between the poorer and wealthier clients. For example the Grameen Bank has resorted in this kind of cross-subsidization (Morduch 1999a). Cross-subsidization can, however, end up being only a short-term solution, as profitable sectors are typically prone to competition, which can drain profits in time. In addition, McIntosh and Wydick (2005) claim that competition can lead to difficulties in cross-subsidizing for the poorest clients, which evidently leads to them being dropped out of the client portfolio.

5.3. Cost differentials between customers

The trade-offs between profitability and outreach and ensuing mission drift is often explained by cost differentials between poorer and relatively wealthier (but still poor) clients. These cost differentials can arise from the relatively worse position of the poor in the society: very poor borrowers may not repay as often as the less poor, they are less educated and maybe even illiterate and require more help from credit agents when preparing and signing loan contracts, and so on. Aubert, de Janvry and Sadoulet (2009) even assert that these reasons are the biggest reason for institutions to serve wealthier clients – it is simply easier and cheaper to serve them. Conning (1999) argues that the poorer the customer, the more monitoring effort is needed because of their lack of collateral, which increases their relative cost. Another reason often cited is the costliness of issuing small loans relative to larger ones. This Section reviews how these cost differentials influence the lender's portfolio choices, and whether they can be considered as a cause of mission drift.

The idea of cost differentials between client types receives support from the empirical findings reviewed earlier. Cull et al. (2007) found that larger loans are associated with lower average costs for individual lenders until up to a point, indicating a U-shaped relationship. Group lenders also seem less able to exploit scale economies than individual lenders. These cost dynamics could mean that those serving the poorest people (who require the smallest loans) could have more problems with cost management and sustainability than those focused on the upper end of the client spectrum.

This hypothesis wins support from their 2009 article, where they find patterns regarding institutional types and lending methodologies. The findings suggest that there may be important differences in the institutions' outreach and profitability posed by their institutional characteristics such as choice of lending methodology and institutional form (e.g. NGO versus microbank). Zeller and Johannsen (2006) and Cull et al. (2009) found out that loan sizes and focus on women, as well as profitability levels, correlate with these factors.

An explanation to the differing outreach levels is that the chosen institutional design correlates with the institution's social missions. "The village banks generally aim to reach the most costly-to-reach and poorest customers; the solidarity group lenders also pursue poorer households, and the individual lending approach is better-suited to going 'up market' and

making larger loans." (Cull et al. 2009, 179) Profitability levels might be affected through different cost structures of the institutions. Cull et al. (ibid.) show that it is the NGOs (who typically employ group lending contracts) rather than microbanks that charge higher interest rates. They suggest this is because of smaller loan sizes in NGOs' group lending schemes that increase fixed costs per dollar lent, even though they are able to keep their total operational costs down. In this sense, the social mission of reaching the poorest with small loans can be in contradiction with the pursuit of profitability, and vice versa.

Armendáriz and Szafarz (2009) study the issue of client cost differentials in a theoretical model. Their model shows that "mission drift is the result of an optimization process by an outreach-maximizing MFI facing different costs while serving a heterogeneous clientele of poor and wealthier borrowers" (Ibid, 11).

Their model consider two types of clients, type 1 and type 2 for poorer and relatively wealthier unbanked borrowers, who require loans of different sizes ($s_1 \geq 0$ for type 1 clients and $s_2 \geq \underline{s}$ for type 2). The authors employ the notion that a MFI might put a higher weight on serving the poorest clients rather than the better-off ones, i.e. its mission is to focus on the depth of outreach. The objective function of the MFI becomes: *max ($N_1 + \delta N_2$)*, where $0 \leq \delta \leq 1$ and δ describes the "degree of concern that the MFI has as it deviates from its mission via the inclusion of wealthier clients" (ibid, 17; emphasis removed). When $\delta = 0$, the MFI wishes to serve the poorest clients only, and when $\delta = 1$, the two groups are considered equally important in the objective function. Now, the authors argue that the MFI might end up with a mixed portfolio of poor and wealthier clients for two reasons: when it is more costly to serve poorer than wealthier clients, the MFI might end up cross-subsidizing for the poor, and the wealthier clients thus have a positive externality on the poor; or the MFI might not worry that much about its deviation from its depth-of-outreach mission (δ is high), and it ends up drifting away from the poor clients.

Figure 6 illustrates the different outcomes of the model. When $\delta = 0$, the MFI serves poor clients only. When $\delta = 1$, the MFI does not worry about deviating from the poorer to the wealthier, and the result is mission drift. When $\delta = 0$, the MFI will never abandon its mission, but might cross-subsidize between client groups and therefore include wealthier clients in its portfolio as well. The interplay between the mission drift 'proneness' described by δ and the cost differentials determine whether a MFI will end up including wealthier clients in its

portfolio. The model describes well the interplay between cost differentials and social mission – neither social weights (δ) or cost differentials purely determine whether the MFI will drift away from the poorer clients, but the more costly it is to serve the poorer clients relative to better-off ones, the more likely it is that the MFI is forced to serve less of them.

Figure 6: Possible outcomes of the theoretical mission drift model of Armendáriz and Szafarz (2009).
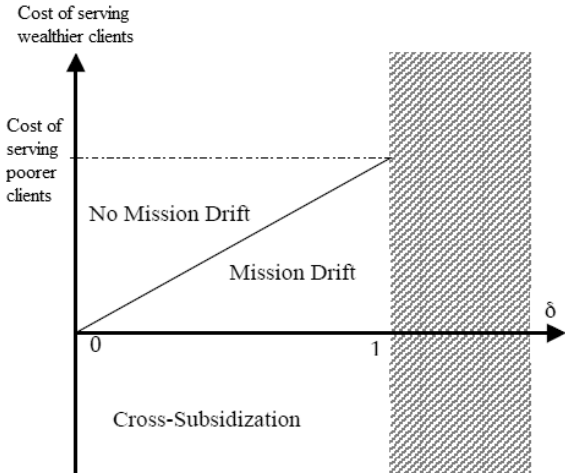
Source: Armendáriz and Szafarz (2009), Figure 1.

Note: Negative values on the vertical axis represent 'profits' the MFI can extract from the wealthy clients. The axis labels have been edited.

An important addition is also the notion of region-specific parameters: the number of very poor clients varies between rural and urban areas and between countries, causing different limits for the MFI's outreach. For example, the number of very poor people is very different in South Asian countries than in Latin America, as the authors point out. This affects how costly it can be to reach out to large numbers of poor, and also how the institutions look like from the outside. An institution serving large numbers of relatively better off poor people is not necessarily drifting away from its mission.

5.4. The role of donors

Another often repeated assertion regarding mission drift is that large donor agencies have an important role in promoting it. "The crux of the mission drift problem is that in recent years the microfinance landscape has witnessed the entry of large commercial donor/investors whose objectives cannot be described as simple poverty minimization. These donors tend to

be international, arm's length investors that are focused on the profitability of lending to the poor." (Ghosh and Van Tassel 2008, 12) The argument is that by favoring MFIs that are committed to covering their costs, they are changing the preferences of MFIs as they compete for donor funds. Ghosh and Van Tassel (ibid.) build a theoretical model to study how the entry of such donors affects the traditional poverty reduction mission of MFIs.

Here, the MFI's objective is to reduce poverty, and the authors formulate this by setting a weighted poverty gap as the MFI's objective function: y_i denotes a client i 's expected net worth at the end of the period, and poverty is measured by an expected poverty gap, $\Sigma(y-y_i)^{\alpha}$, where y is the poverty line and $\alpha \geq 1$ is the weight assigned to the poverty gap. This allows taking into account the relative poverty level of the clients, instead of just taking all 'poor' clients as equally poor.

In the starting point of their one-period game, the result is loan specialization, i.e. the MFI disburses exclusively either small or large loans, depending on its α. When the weight is high, the MFI distributes small loans to the poorest of the poor. When the weight is low, transaction costs drive the MFI to optimally target the less poor and exclusively disburse larger loans[11]. An important note is that portfolio return depends on the probability of the borrowers' success, and since a successful project is more likely to increase the borrower's income than an unsuccessful one, the MFI with a higher portfolio return is also the one that will have a greater impact on poverty.[12]

Next, the authors introduce donors in the model and show how donor's objectives have a difference in the MFIs' behavior. With poverty minimizing donors, who allocate funds to MFIs with the same objective of poverty reduction, the funding is directed to MFIs with the highest portfolio quality and who thus make the greatest dent in poverty (it is assumed that the donor can observe portfolio quality). To study the effect of the mentioned profit-oriented donors, a second type of donors is introduced who wish to maximize the return of dollars lent. In their model, the MFIs compete for the donor's funds by their portfolio returns.

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[11] Compare the situation when $\alpha=1$, to $\delta=1$ in Armendáriz and Szafarz (2009).

[12] Similarly, Hulme and Mosley (1996) postulated that the impact-possibilities frontier (see Figure 3 in this thesis) can be shifted upwards by implementing features that the authors associated with higher financial performance, such as high interest rates and intensive loan collection procedures.

Assuming that the MFIs are poverty oriented (high α), they specialize in small loans and receive funding from the poverty reduction oriented donor (budget B_j for MFI j). The new profit-oriented donor offers the possibility of additional funding F. This funding goes to the 'more capable' MFI that has a higher portfolio return. This gives the other, less capable MFI the incentive to alter its portfolio choice to include some larger loans as well, in order to increase its returns and thus win the additional funds. Ghosh and van Tassel argue that this can be an optimal strategy for a poverty-oriented MFI, since even though the poverty reduction *per dollar lent* is reduced, the larger budget that comes with additional funding F enables a greater *total* reduction in poverty (the budget is now $B_j + F$). This diversion away from the poorest borrowers is thus in line with the poverty reduction objective of the MFI. The reactive equilibrium of the game is that the more capable MFI will issue both small and large loans and win the profit oriented donor's funding, and the less capable will specialize in small loans and have only the funding from the poverty oriented donor.

In this equilibrium, the *total* reduction of poverty is higher than without the profit-oriented donor due to increased budgets of the MFIs. The situation differs from simple cross-subsidization in the earlier Section in the sense that, overall, more clients can be reached because of the additional funds introduced by the new donor. However, whether the change in the client portfolio of the more capable MFI should be interpreted as mission drift is a question of how 'mission' is determined – i.e. whether depth or scale of outreach is emphasized. The poorest of the poor receive fewer loans when the profit-oriented donor is introduced, but the total number of poor clients is increased. This, again, requires that the weight $α$ is sufficiently low for the more capable MFI to want to aspire for the larger budget, and that F is large enough for the increase in scale to compensate for the decrease in poverty-reduction efficiency.

In essence, the model of Ghosh and van Tassel is a good representation of how profit-driven donors (or private investors) can lead to mission drift as it is defined: the poorest clients are crowded out from the client portfolios. But this doesn't have to mean that the social goal is altogether forgotten. The result that the more capable MFI receives the funding in the model, and the less capable specializes in catering small loans to the poor also illustrates that there can be different roles for MFIs with different capabilities. As in Armendáriz and Szafarz's model, serving the better off clients does not have to mean that the MFI does not wish to

reduce poverty, and also succeed in it. It should be remembered that offering financial services to the better-off poor who have previously been unserved is also important.

5.1. Empirical evidence of trade-offs

There is still a limited number of empirical studies regarding mission drift (or the win-win outcome), and they also often seem to be somewhat unconnected to the theoretical analyses, which is likely to be a major reason why the two sides of the debate have not been able to converge. The lack of large datasets is the most probable reason to this dearth of empirical evidence. Cull, Demirguc-Kunt and Morduch (2007) make an important exception by using a large, static dataset to study mission drift. Mersland and Strom (2010) provide another analysis of the impacts of profits on outreach with a larger, panel dataset. Other studies tend to use specifically selected case microfinance institutions for analysis, which makes the generalization of results difficult.

Cull et al. (2007) use a dataset of 124 leading microbanks in 49 countries from the MIX organization. As positive news, they find that some institutions in the sample have achieved both satisfactory outreach as well as profitability, and that simple correlations for the whole sample do not provide evidence of mission drift (correlation between average loan size and profitability measures is not statistically significant). However, they are able to reveal trade-offs between the two objectives by disaggregating by lending type. These are illustrated in Table 3. Financial self-sufficiency, i.e. the institution's ability to generate sufficient revenue to cover their costs, and return on assets are the highest for individual lenders and lowest for village banks[13], whereas village banks perform best in outreach measures and individual lenders perform the worst. Group lenders rank in the middle in all these measures.

In the profitability regression, once the effects of real portfolio yield and costs are allowed to vary by lending type, the lending method itself produces no significant effect on profitability. In a regression studying costs dynamics, they find that individual-based lenders, and to some extent also group lenders, find it cost-effective to increase their average loan size. In pursuing

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[13] Village banking is based on similar joint liability lending as in group lending, but with larger groups. (Cull et al. 2007).

profitability, therefore, MFIs might have the incentive to shift their focus towards wealthier borrowers who can absorb larger loans, even though that would mean sacrificing outreach to the poorest clients. This suggestion is further studied in a separate set of regressions focusing on outreach determinants.

Table 3: Summary statistics by lending type for leading microbanks.

	Individual lenders		Solidarity lenders		Village bank lenders	
	Mean	Stndrd. Dev.	Mean	Stndrd. Dev.	Mean	Stndrd. Dev.
Financial self-suffiency	1.11	0.29	0.98	0.32	0.95	0.47
Operational self-suffiency	1.23	0.28	1.12	0.35	1.09	0.75
Return on assets adjusted	0.01	0.08	−0.05	0.24	−0.08	0.22
Average loan size to GNP per capita	1.01	1.10	0.54	0.52	0.20	0.17
Age	11.12	8.67	8.60	5.85	6.95	3.71
Size of MFI indicator	2.23	0.67	2.00	0.72	1.60	0.60
For-profit status	0.29	0.46	0.26	0.44	0.00	0.00
Real gross portfolio yield	0.31	0.16	0.33	0.14	0.54	0.31
Capital costs to Assets	0.07	0.06	0.08	0.07	0.17	0.16
Labor costs to Assets	0.07	0.05	0.12	0.12	0.15	0.11
Loans to Assets	0.70	0.17	0.71	0.20	0.60	0.17
Donations to Loan portfolio	0.02	0.06	0.17	0.43	0.30	0.47
Average loan size to GNP per capita of the poorest 20%	4.80	4.92	1.63	1.97	0.63	0.39
Average loan size (USD)	1220.23	1184.51	430.98	499.56	148.69	126.61
Women borrowers	0.46	0.16	0.75	0.24	0.88	0.21

Source: Cull et al. 2007, Table 4.

In the mission drift regression they measure outreach by average loan size (in proportion to national income levels because they have multi-country data) and share of women borrowers. This approach reveals countervailing relationships between financial self-sufficiency and outreach, which are summarized in Table 4. Trade-offs between profitability and outreach seem to exist only in special cases. The regression coefficient for financial self-sufficiency for individual lenders is significant and negative for the average loan size and share of women variables, which suggest that individual lenders that have reached self-sufficiency tend to be more focused on the poor and women. For group lenders or village banks, self-sufficiency is not significantly linked with outreach. Contradictory to this, their results also indicate that larger and older individual-based lenders and group lenders tend to fare less well on outreach measures, disbursing larger loans and lending less to women. In the profitability regression specification, loan size did not come out as a determining factor for any of their financial performance indicators.

Table 4: Summary of Cull et al.'s (2007) mission drift regression results.

	Association with Size of Loans (significance)	Association with Proportion of Loans to Women (significance)
Individual-Based Lenders		
Increases in:		
Age of firm	Larger (5%)	No significant relation
Size of firm	Larger (10%)	Lower (5%)
Financial Self-Sufficiency	Smaller (5%)	Higher (5%)
Solidarity Group Lenders		
Increases in:		
Age of firm	No significant relation	No significant relation
Size of firm	Larger (1%)	Lower (1%)
Financial Self-Sufficiency	No significant relation	Higher (5%)
Village Banks		
Increases in:		
Age of firm	No significant relation	No significant relation
Size of firm	No significant relation	No significant relation
Financial Self-Sufficiency	No significant relation	No significant relation

Source: Cull et al. 2007, Table 12.

In sum, Cull et al. find that "[t]he patterns of profitability and the nature of customers vary considerably with the design of the institutions and their contracts" (ibid., 108). For individual lenders, size and to some extent also age are associated with less outreach, while profitability is associated with more: "[A]s they grow larger, individual-based lenders are more susceptible to mission drift than village banks." (Ibid., 130) As they do not find almost any significant results for village banks or group lenders regarding age, size, or financial self-sufficiency, they suggest that mission drift would appear to be a less severe concern for them. The fact that larger group lenders tend to have larger loan sizes than smaller ones may be the result of a number of things, for example cross-subsidization between wealthier and poorer borrowers (the larger loans for wealthier clients lifting the average).

Curiously, their results do not indicate region-specific variance in the drivers of mission drift. With Latin America and the Caribbean the omitted category for their region dummy, a significant difference arises only with respect to Sub-Saharan Africa in the average loan size relative to the GNP per capita specification. Having already mentioned the differences in poverty levels and commercial approaches between Latin America and Asia (Armendáriz and Szafarz 2009), this is a surprising and notable result. It indicates that the commercial approach prevalent in Latin America does not necessarily induce mission drift as measured by loan sizes and focus on women.

In their later research paper, Cull et al. (2009) study a larger set of institutions; 346 institutions across the world. With regard to lending methods, here, too, village banks and group lenders are less frequently profitable (43 % and 55 %, respectively) than individual

lenders (68 %), but this paper's focus is more on comparing non-profit organizations and commercial microfinance banks than lending methods. The authors find that using subsidies does not undermine the possibility of profit-making, but microfinance banks are less likely to depend on subsidies than are NGOs, and they also are more frequently profitable (73 %) than NGOs (54 %). Furthermore, they find that the median NGO disburses loans that are 48 % of the income of the poorest 20 %, whereas for microfinance banks this number is 224 %. Even though this latter finding is intriguing regarding the debate on mission drift, as they study only sample averages, similar causalities cannot be inferred as in their 2007 article.

The data tables provided by the MIX organization in its MicroBanking Bulletin were already mentioned in Section 3.3. Using the same source, Table 5 illustrates some revealing characteristics of leading microfinance institutions regarding the trade-offs in question. Financial self-sufficiency and returns on assets are higher for those targeting a better-off clientele. Furthermore, institutions that had not reached financial self-sufficiency disbursed smaller loans and had more women as clients than the financially self-sufficient institutions. With access to only the tables in the Bulletin, further inferences on these aspects cannot be made, nor is it possible to perform means tests. Nevertheless, already such simple group comparisons reveal interesting trends regarding the trade-offs in question.

Table 5: Selected statistics on 487 microfinance institutions from 78 countries in 2007.

	Number of MFIs in the category	Outreach			Financial performance		
		Percent of Women borrowers (%)	Average loan balance per borrower / GNI per capita (%)	Number of active borrowers	Return on assets (%)	Financial self-sufficiency ratio	Commercial funding liabilities ratio (%)
Financial self-sufficiency							
FSS	343	62,8	43,9	22 775	2,9	1,16	79,8
Non FSS	144	65,7	35,7	13 375	-3,5	0,86	59,2
Target client group							
Low end	162	88,1	13,2	25 091	0,7	1,05	62,0
Broad	267	53,9	53,7	14 667	1,8	1,11	81,1
High end	34	45,3	187,0	23 934	1,5	1,10	98,2
Small Business	24	42,7	347,2	18 711	1,9	1,12	112,5

Source: MicroBanking Bulletin (2009).

Note: FSS = Institutions with financial self-sufficiency > 100 %; Non FSS = Institutions with financial self-sufficiency < 100%. Target market is measured by average loan balances as a portion of GNI per capita (LB): Low end: LB < 20%; Broad: 20% < LB < 149 %; High end: 150 % < LB < 250 %; Small Business: LB > 250 %. Values in the tables are median values.

It is illustrative to review a case study in addition to these large-dataset analyses as well. Christen et al. (1995) analyzed 11 leading microfinance institutions, of which 5 institutions

had reached financial sustainability and produced positive returns on assets, 5 had negative return on assets and 1 just broke even. As the average loan sizes of these institutions were dispersed to a spectrum from 6 % to 136 % relative to GNP per capita, without a visible pattern (see Figure 7), they concluded that loan size was not a determining factor for the financial viability of the sample institutions. Rather, the clearest determinant of sustainability was the level of interest rates, reflecting the commitment to achieve the goal of financial self-sufficiency. The conclusion the authors make reflects their position in the mission drift debate: "These results show no evidence of a direct trade-off between outreach, either deep or extensive, and financial viability. The two goals are clearly not in opposition." (Ibid, 27)

Figure 7: Outreach and profitability of 11 case MFIs.
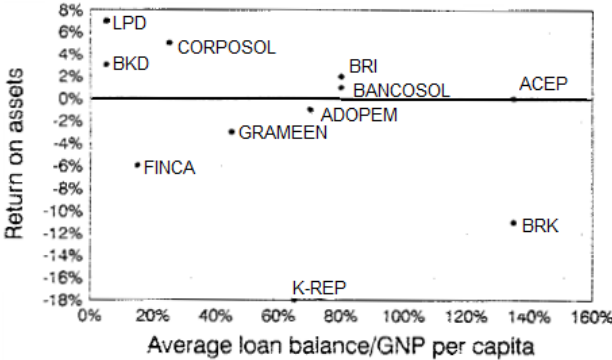
Source: Christen et al (1995), Figure 2.

However, it is important to notice that all the studies cited above focus on very special samples of the microfinance industry. The 487 institutions reporting to the MIX organization represent 75 % of all the borrowers in the microfinance industry (MicroBanking Bulletin 2009), but they are clearly the top institutions of the industry: they are unified by their pursuit towards sustainability, and are also able and willing to provide high quality information regarding their accounts and clients. Cull et al. use MIX datasets in both their studies (2007 and 2009). Even though these studies are important in making a first approach to studying outreach patterns in larger datasets, they hardly represent the dynamics of the entire microfinance industry. In the study of Christen et al. (1995), the case MFIs were explicitly chosen based on their performance on both outreach and financial performance. It is rather questionable to draw any strong conclusions from a dataset of only 11 institutions that are in addition a very biased sample. The inability to find a clear pattern regarding outreach and profitability in such a study can simply be due to the limited number of case institutions studied, rather than the lack of mission drift. A problem with case studies is also that it is

difficult to draw lessons for other microfinance institutions from the experiences of such a limited number of institutions.

The reviewed analyses are all static, and therefore miss out on an important factor of mission drift: it is by definition a change that takes place during a longer time period. Even though the static analysis of Cull et al. (2007) is an important first step in mission drift analyses and is able to pin down relationships between profitability and outreach, actual inferences about whether mission drift has occurred or not cannot be made. Mersland and Strom (2010) are able to address this problem by using a panel dataset of 379 MFIs from 74 countries, obtained from MFI ratings performed by third parties. The data covers years 2001 through 2006.

Unlike Cull et al. (2007), Mersland and Strom do not disaggregate their analysis by lending methodology. They find that on an aggregate level, average loan sizes do not increase as the MFIs become older. This result is visible in Figure 8, where the pattern is rather downwards than upwards, and is also obtained in their panel regression. However, they are able to pin down important profit and cost dynamics for several outreach measures. They use average profits and average costs per credit client as regressors, and find that cost efficiency is important in determining outreach. With respect to average loan size, average profits are also significant, but the authors determine that average costs' effect is more important.

Figure 8: The development of average loan size of microfinance institutions with respect to their age.
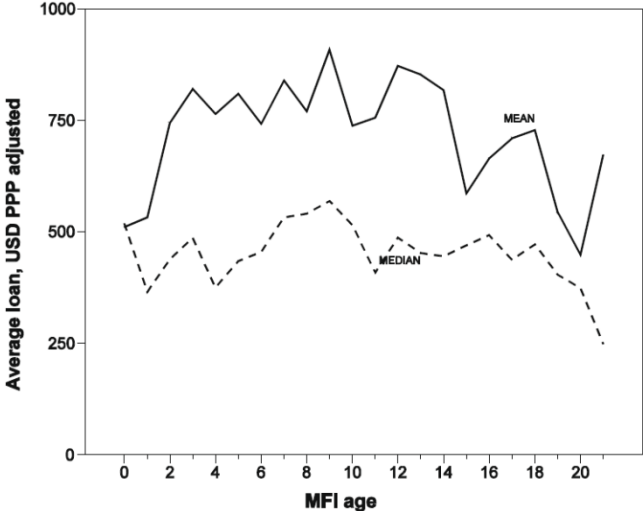
Source: Mersland and Strom (2010), Figure 1.

The authors study other outreach measures as well, namely lending methodology, a focus on rural areas and a focus on women. These are studied in separate regressions, where the

authors find that higher average costs are likely to cause the MFI to take on individual lending rather than group lending and turn away from rural areas towards urban areas, as well as away from female clients. In sum, they suggest that mission drift is not a relevant concern for the microfinance industry, but that better cost efficiency may help microfinance providers to deepen their outreach. It should be noted, that even though the employment of panel data is a significant improvement in mission drift analyses, the data used in this study still suffers from the same 'best institutions' bias as the previous studies. MFIs that have submitted to rating procedures for several years are likely to represent a share of top institutions that wish to increase their access to commercial capital by these third-party ratings.

Thus, even though some important steps have been taken in the field of mission drift studies, there is still a clear lack of studies representative of the industry, instead of a special sub-sample of it. This thesis intends to do its part to fill this need by analyzing profitability and mission drift within a sample country (see next Chapter).

5.2. Discussion

Having reviewed the theoretical and empirical evidence, it is clear that the debate on whether the pursuit of financial self-sufficiency will result in mission drift, or is it a win-win logic, cannot be easily resolved to the benefit of either side. The evidence rather shows how neither argument holds universally. There are institutions that can achieve both their social and economic missions, suggesting that the two missions are not always contradictory. But some institutions do, for various reasons, experience a trade-off between them. For these latter institutions, the outcome may be mission drift, cross-subsidization between clients, or specialization to serving fewer, poorer clients, dependent on the support of socially-minded donors. The factors that create these trade-offs are, among others, the institution's chosen lending practices, target groups and their relative costliness, the nature of the operating environment, and the demands of the institution's sponsors.

It has been hypothesized that institutions with a high weight on the poorest individuals typically choose certain operating forms that are more suitable to the poorest clients (such as group loan schemes, operating in remote rural areas etc.), but these practices can at the same time be relatively more costly than practices for serving wealthier clients. This is why there

will always be a need for donor funds in microfinance. Armendáriz and Szafarz's (2009) model illustrates how it might be impossible for a MFI to reach out to large numbers of the poorest clients in a sustainable way, when serving them is too costly. In such a situation, the use of donations and subsidies can be defended. The sustainability camp fears that such donations will at some point dry up as donors find new targets to be funded, withering these dependent institutions, but there is no clear reason for such a realization as long as the microfinance programs have positive welfare effects on the borrowers.

The sustainability camp promotes the idea that interest rates should be raised to cost-covering levels, but there are reasons provided by economic theory why they shouldn't be raised too high. In addition, even though some poor people have proved able to pay high interest rates, that is not to say that they all can: the non-financial abilities of the poor vary greatly. The inability to pay higher interest rates should not be interpreted as being altogether uncreditworthy, or unable to benefit from borrowing: experience has proved otherwise. Interest rates should perhaps be raised only once a client has reached a higher level of welfare, has acquired non-financial skills along with his first loans and has become able to absorb larger loans. This way the objectives of the sustainability and poverty camps could be aligned: the poorest would be helped to increase their well-being, and in time the MFI's revenue could be raised.

Across-the-floor interest rate rises or subsidies are not solutions that fit all circumstances. Similarly, donor organizations and networks promoting financial sustainability and commercialization of microfinance should be aware that the same mode of operation does not suit all institutions. These organizations can indeed have a great effect on the institutions' behavior if funds are allocated on the grounds of portfolio returns. However, it should be remembered that the presence of profit-oriented donors is not necessarily a bad thing: by bringing more funds to the industry they are actually enabling outreach to a larger number of poor clients. Serving less poor clients is an important matter in itself: there is a large number of people excluded from the credit markets who could benefit from the access to finance, and they should not be thought less important because they are relatively better off already before accessing microloans. Efficient, commercial lending approaches might not always be a negative thing either. If a previously donor-dependent institution is able to become self-sufficient by enhancing its operations, then the donor could direct its funds to new targets. This pattern would enable the inclusion of more and more clients into microfinance, possibly

without the poorest clients suffering. Awareness on the potential mission drift effect away from the poorest clients is nevertheless needed.

In sum, there is clearly room and demand for a variety of institutions in the microfinance field: those focusing on the poorest and perhaps therefore depending on donations; as well as those moving up-market and serving a better-off clientele of previously unserved people with the support of commercial funds. The fact that the latter ones are able to serve large numbers of people should rather be embraced than shunned at.

There is no telling which is the 'right' focus, the depth or the breadth of outreach. This thesis argues that as long as otherwise unserved poor people are given access to loans and other financial services that suit their specific needs, microfinance is on the right track. But microfinance institutions, donors and commercial financiers ought to be aware of the interplay of the various institutional factors and not assume that one mode of operation suits all.

6. Empirical analysis: Studying the patterns of profitability and mission drift in Uganda

6.1. The hypotheses

This thesis uses Uganda as a sample country to study the potential patterns of profitability and mission drift. The aim is to test whether the patterns within the microfinance sector of a single country are similar to those found in earlier multi-country analyses. Additional insight into the analysis is drawn from the reviewed theories.

The main hypothesis is that for some Ugandan institutions, higher levels of profitability tend to be related with larger average loan sizes, indicating that institutions experience a trade-off between the two variables and are therefore suspect to mission drift. Additionally, mission drift is also considered to occur as institutions mature, and therefore older and larger institutions should also demonstrate higher average loan sizes. The analysis tests for similar

patterns relative to the share of women borrowers as well, but because of the country context the hypothesis is that in Uganda, mission drift ought not to be visible as diminishing shares of women in the client portfolios.

The discussion in the previous Chapter noted that institutional design could reflect the institution's mission (the weight it puts on the depth of outreach relative to its breadth), and that region-specific characteristics such as poverty levels could have an effect on the institution's overall possibilities to reach out to the poorest customers. These are therefore important control variables.

Regarding profitability, the analysis tries to find patterns related to the institutional design and operating environment of the institutions. The hypothesis is that group lenders have a harder time reaching self-sufficiency than individual lenders, and similarly NGOs demonstrate lower levels than companies, with SACCOs situating in between them; this would reflect their different attitudes towards the pursuit of profitability. Additionally, poorer regions ought to experience lower profitability levels since poorer people are considered unable to pay exceedingly high interest rates, and since institutions operating in poorer places are likely to be more poverty-oriented and less profit-oriented than those working in wealthier areas.

6.2. Introduction to Uganda

Before turning to the analysis, it is useful to present some basic facts about the poverty situation and the financial sector of Uganda in order to put the ensuing analysis into context. Because of the focus of this thesis, credit services are mostly of interest when presenting the financial and microfinance sector. The regulatory framework for microfinance in Uganda is also described.

Uganda is a suitable sample country for the purposes of this study as it has a relatively diverse financial sector considering its low overall level of development (Heikkilä, Kalmi and Ruuskanen 2009). Despite some effective poverty eradication programs, the country is still one of the poorest in the world (Braun and Hannig 2006). According to databases of the International Monetary Fund (IMF), GDP per capita has risen from USD 260 in 1990 to USD 390 in 2007. Figure 9 also depicts the evolution of GDP per capita related to purchasing

power parity. The share of Ugandans living below the national poverty line has decreased from 56 % in 1992-1993 to 38 % in 2002-2003 (Braun and Hannig 2006).

Figure 9: The evolution of GDP per capita of Uganda.
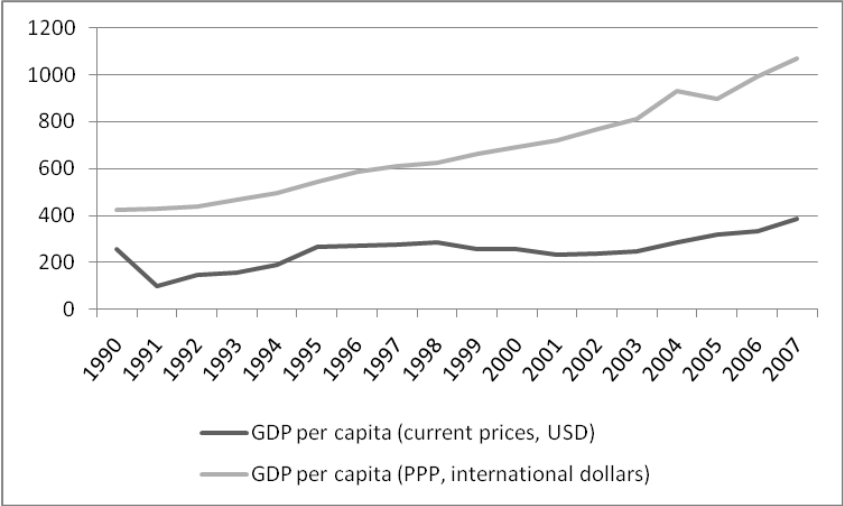
Even though poverty is spread around the country, there are notable regional differences in income levels, the Eastern and Northern areas being the poorest. According to a poverty distribution study, in 2002 the share of people living below the poverty line is 27,1 % in the Central region, where the capital and biggest city of the country, Kampala, is situated; 46,8 % in the Eastern region; 34,4 % in the Western region; and 66 % in the Northern region. The difference between rural and urban areas is also significant: 43 % of the rural population and 14 % of the urban population were categorized as poor in 2002. Kampala alone has only a 5 % poverty rate. (Uganda Bureau of Statistics 2007) A significant majority of the working population are self-employed, and nearly 90 percent of the non-farming active population are employed in micro- and small enterprises, representing a significant market for microfinance (Goodwin-Groen, Bruett and Latortue 2004).

The civil war has of course left its marks in the country, most especially in the Northern region which the Lord's Resistance Army has terrorized for two decades (BBC Uganda country profile). Otherwise, the incumbent president Yoweri Museveni (in power since 1986) has been able to secure economic and political stability since the mid-1990s. He has also put tremendous effort into enhancing the financial sector, and the microfinance sector in particular. (Goodwin-Groen et al. 2004) The financial sector has undergone important structural changes in the 1990s and 2000s due to several sectoral reforms including financial

liberalization and bank privatizations. Even though these reforms have improved the condition of the banking sector significantly, it remains relatively small, concentrated and lacks financial depth. For example, private credit to GDP ratio was only 5 % in 2004, leaving Uganda below the average of low-income countries and Sub-Saharan African countries with regard to resource mobilization. In addition, a low loan-deposit ratio indicates limited intermediation of deposits into private sector loans. The low contractual and informational frameworks also result in low competitiveness of the sector. (Beck and Hesse 2009; Braun and Hannig 2006)

The banking sector of Uganda consists of formal financial institutions, regulated by the Bank of Uganda, semi-formal institutions which are licensed or registered under an Act of Parliament but not supervised by the Bank of Uganda, and several different kinds of informal financial groups and organizations that are not registered or supervised, but are rather different voluntary groups of people in the same location that meet regularly. (Heikkilä et al. 2009) Figure 10 illustrates the different levels of financial institutions. The financial sector is divided into 4 tiers, reflecting the different levels of regulation they face. The formal institutions, commercial banks, credit institutions, and microfinance deposit-taking institutions fall into Tiers 1, 2 and 3, respectively. The semi-formal institutions, which are the focus of the ensuing empirical analysis, are credit-only microfinance institutions and Savings and Credit Cooperatives (SACCOs)[14], and they form the Tier 4. The introduction of microfinance deposit-taking institutions (MDIs) into the formal sector with the Micro Finance Deposit-Taking Institutions Act in 2003 is a good example of the Ugandan government's efforts to promote microfinance. The MDI Act created a regulatory framework for Ugandan microfinance institutions to turn into regulated, deposit-taking institutions, to onlend the deposited funds and that way finance their growth with local capital. (Braun and Hannig 2006)

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[14] Member-owned credit cooperatives are typically called SACCOs in Africa (World Council of Credit Unions, www.woccu.org)

Figure 10: Structure of the financial sector of Uganda.

Formal institutions		Semi-formal institutions		Informal groups / organisations	
Commercial banks, credit institutions	Microfinance deposit-taking institutions (MDI)	Credit-only microfinance institutions (MFIs)	Savings and credit co-operatives (SACCOs)	Groups e.g. ROSCAs, ASCAs, savings clubs	Loans taken from friends, relatives, employer, shops, moneylenders etc.
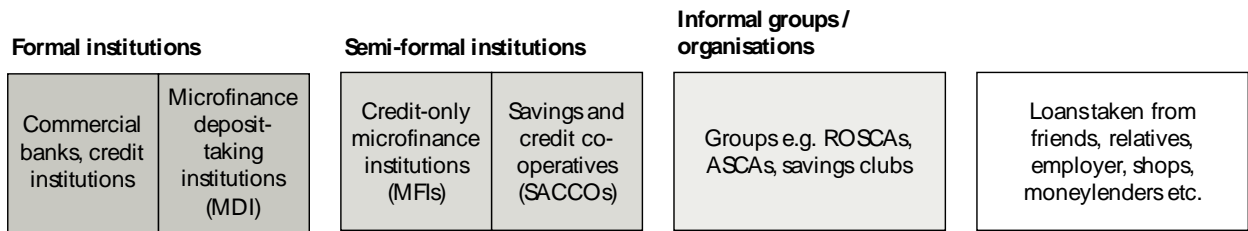
Regulated by Bank of Uganda

Source: Heikkilä et al. 2009.

Note: ROSCA = Rotating Savings and Credit Association; ASCA = Accumulating Savings and Credit Association. See for example Armendáriz de Aghion and Morduch 2005 for a description. Note also that even though here the acronym 'MFI' excludes SACCOs, this thesis uses the term 'MFI' as an umbrella term for all Tier 4 microfinance institutions.

The microfinance industry of Uganda is relatively new when compared to pioneering countries such as Bangladesh and Bolivia. Even though informal financial institutions have existed there for decades, and some credit schemes were introduced in the 1980s, the first true microfinance organization appeared in early 1990s. Along the growing interest of donors and NGOs, the microfinance industry began to grow. (Carlton, Manndorff, Obara, Reiter and Rhyne 2001) The growth has indeed been remarkable: in 2003, about 400 000 borrowers and 900 000 savers were served by an estimated 1 500 microfinance outlets. (Braun and Hannig 2006) Descriptions of the inception of microfinance in Uganda suggest that from the beginning, donor-led (especially USAID) promotion of 'good practices' has affected the industry significantly. The prevalence of a business practice approach meant that many microfinance practitioners took the pursuit of sustainability seriously. (Carlton et al. 2001; Goodwin-Groen et al. 2004)

Outreach of financial services is very shallow in Uganda. Two studies by Beck, Demirgüc-Kunt and Martinez Peria (2007 and 2008) find that Uganda fares relatively poorly with regard to indicators on access to and use of formal financial services (such as bank branch penetration geographically and demographically, and average number of loan and deposit accounts per capita). Shallowness of the financial market is typical to countries in Sub-Saharan Africa. In that part of the continent, access to credit and its costs are mentioned as an obstacle for firm growth more often than anywhere else in the world, and fewer than 20 % of the adult population there have a an account with a formal or semi-formal financial intermediary. (Honohan and Beck 2007)

According to a survey performed in 2006 in Uganda, only 38 % of the adult population had access to financial services of any kind. 20 % of the population used formal financial institutions, 5 % used semi-formal and 22 % informal institutions (the groups are not mutually exclusive). These figures include the variety of financial services, but when focusing on access to credit, the survey found that 33 % of the adult population currently had a loan and 17 % had sometimes borrowed but were not borrowing at the moment of the survey. 7 % of the population had borrowed from formal sources, 7 % from semi-formal institutions and 11 % from informal groups. It seems that women are to some extent more constrained from banking services than men (see Table 6): a larger portion of women is not served by any financial services, and women also have less access to formal financial services. With regard to borrowing, however, the difference between genders disappears: 49 % of men have never borrowed, compared to 51 % of women. (The Steadman Group 2007)

Table 6: The percentage of men and women served by different financial institution types (all types of financial services), and the proportions of those who have used borrowing services.

	Formally served	Semi-formally served	Informally served	Unserved	Currently borrowing or borrowed earlier	Never borrowed
Male (%)	59	55	45	44	50	49
Female (%)	41	45	55	56	49	51

Source: The Steadman Group 2007

The rural-urban divide and the regional divide that were apparent in income levels are visible with regard to access to financial services as well (Table 7). The Eastern and Northern regions have relatively high shares of people lacking access, and the difference between Kampala and other areas in the Central region is also apparent. With regard to borrowing, the differences are less obvious. 48% of rural dwellers have ever borrowed, compared to 54 % of the urban population. The shares of rural and urban people borrowing from formal and semi-formal institutions are virtually the same. (The Steadman Group 2007)

Table 7: Financial access by region and location.

	Rural	Urban	Kampala	Central (excluding Kampala)	Eastern	Northern	Western
Share of financially served (%)	35	48	49	28	32	34	50
Share of unserved (%)	65	52	50	72	67	66	50

Source: The Steadman Group 2007.

6.3. Data description

The empirical analysis is performed with data from the 2006 Census of Financial Institutions in Uganda. The Census covered all eligible semi-formal Savings and Credit Cooperatives (SACCOs) and non-cooperative MFIs in Uganda, and also collected data from formal financial institutions, but this study focuses only on the Tier 4 microfinance institutions. The census found 901 eligible semi-formal financial institution outlets, including the branches of multi-branch institutions.[15] Eligibility was determined by operating in a fixed location, having active operations at the time of the survey and being a legal entity in Uganda. Fieldwork was carried out between June and August 2006 by the Ministry of Finance, Planning and Economic Development in Uganda, the British Department for International Development's Financial Sector Deepening Project Uganda and other stakeholders.

Of the 901 observations, only those institutions that started their operations during 2005 the latest are included in the analysis (i.e. excluding those that started operations during 2006). This restriction is made because the analysis is performed based on information regarding the year 2005. With this restriction, the relevant sample consists of 823 observations. Table 8 Table 9 provide the summary statistics and correlations of the variables of interest for this sample. Because there is not enough information on the institutions' accounts, any accounting adjustments to the financial data are not made.

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[15] The difference to the number of Braun and Hannig (2006) presented in Section 6.2 (1500 MFIs in Uganda in 2003) is probably due to strict eligibility criteria in the Census.

There is significant variance between the institutions in the dataset, as expressed by the differences between mean and median values and the range of minimum and maximum values in Table 8. Profitability seems to be very high in Uganda in general, but there are both those who report very high profits and those that are making a large annual loss. There is also a lot of variability in the ages of the institutions, as the youngest ones have barely started and the oldest ones have started as far ago as in the 1960s. Even though it was mentioned earlier that the microfinance movement began in Uganda in the early 1990s, some of the institutions in the dataset report having started their operations significantly much earlier. These oldest institutions are all SACCOs, which just illustrates how long these cooperatives have prevailed – microfinance is not an entirely new innovation.

The lending type category was built manually according to the reported customer amounts in 2004 and 2005. The majority of Ugandan MFIs employ purely individual loan contracts (429 institutions), and only a handful use nothing but group contracts (27 institutions). 274 institutions have a mixed portfolio of both group and individual loans[16]. These numbers reflect well the prevailing trend towards individual loans over group loans. A Women's World Banking (2003) study found that in Uganda, almost 90 % of those questioned for the study preferred the independence provided by individual loan contracts over the security provided by the other group members in group contracts. Perhaps this strong preference among Ugandans for independence is the reason why the majority of institutions offer individual loans. In these individual contracts, some kind of collateral is most likely required to secure the loan. Many institutions reported to accept the kind of 'flexible collateral' mentioned in Section 2.1; untitled land, buildings, chattel items such as fridges or beds, and individual guarantors as well. Over 400 MFIs reported positive amounts of compulsory savings as well.

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[16] There were 96 institutions for which the lending methodology could not be determined because of missing information on clients.

Table 8: Variable descriptions and summary statistics (N=823).

Variable	definition	n	Mean	Median	Minimum	Maximum
ROA	(operational income - operational expenses) / assets	401	0,16	0,06	-12	7
SOSS	operational income / operational expenses	679	3,01	1,40	0	101
Individual lender	dummy; 1=individual	730	0,59	1,00	0	1
Uses both lending types	dummy; 1=both	730	0,38	0,00	0	1
Group lender	dummy; 1=group	730	0,04	0,00	0	1
SACCO	dummy; 1=SACCO	823	0,82	1,00	0	1
Company	dummy; 1=company	823	0,09	0,00	0	1
NGO	dummy; 1=NGO	823	0,07	0,00	0	1
Age	in years	823	6,18	4,17	1	52
Size of assets	in UGX	421	101 698 209	25 972 083	300 000	4 969 496 000
Size of loan portfolio	in UGX	719	148 851 705	11 470 733	0	12 223 584 741
Loans to assets ratio	loan portfolio / assets	368	0,53	0,57	0	1
Voluntary savings	in UGX	648	32 469 176	4 033 750	0	1 790 157 348
Compulsory savings	in UGX	558	34 499 179	1 515 000	0	2 440 114 956
Deposits to loans	voluntary savings / loan portfolio	578	2,12	0,51	0	357
Central region including Kampala	dummy; 1=Central with Kampala	823	0,26	0,00	0	1
Central region excluding Kampala	dummy; 1=Central without Kampala	823	0,21	0,00	0	1
Kampala	dummy; 1=Kampala	823	0,05	0,00	0	1
Eastern region	dummy; 1=Eastern	823	0,19	0,00	0	1
Northern region	dummy; 1=Northern	823	0,09	0,00	0	1
Western region	dummy; 1=Western	823	0,46	0,00	0	1
Rural/urban location	dummy; 1=urban, 0=rural	817	0,45	0,00	0	1
Share of women borrowers	women borrowers / total of clients; only for individual lenders	349	0,45	0,41	0	1
Average loan size to GDP per capita	(value of loans disbursed / number of clients) / GDP per capita; only for individual lenders	395	0,66	0,32	0	10

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Note: UGX = Ugandan shilling, the currency of Uganda. In 2005 1 Euro was approximately 1 400 Ugandan shillings (exchange rates from The World Factbook) and inflation approximately 8 % (IMF World Economic Outlook Database).

	ROA	SOSS	Women borrowers	Average loan size	Age	Size of assets	Loans to assets	Individual	Both	Group	SACCO	Company	NGO
ROA	1,0000												
	401												
SOSS	0,2463 (***)	1,0000											
	401	681											
Women borrowers	0,0540	-0,0854	1,0000										
	178	304	349										
Average loan size	0,1273 (*)	0,1535 (***)	-0,0806	1,0000									
	207	353	335	395									
Age	-0,1211 (**)	0,0441	-0,0132	0,0471	1,0000								
	401	681	349	395	823								
Size of assets	-0,0050	-0,0173	-0,0168	0,1426 (**)	0,1138 (**)	1,0000							
	401	401	184	211	421	421							
Loans to assets	0,0348	0,0151	-0,1763 (***)	0,2212 (***)	-0,0721	0,0644	1,0000						
	355	355	166	194	368	368	368						
Individual	0,10560 (**)	0,0917 (**)	.	.	0,1086 (***)	-0,0240	-0,1583 (***)	1,0000					
	388	638	.	.	730	404	360	730					
Both	-0,0230	-0,08482 (**)	.	.	-0,0978 (***)	0,0200	0,1848 (***)	-0,9254 (***)	1,0000				
	388	638	.	.	730	404	360	730	730				
Group	-0,2297 (***)	-0,0233	.	.	-0,0321	0,0109	-0,0690	0,23340 (***)	-0,1519 (***)	1,0000			
	388	638	.	.	730	404	360	730	730	730			
SACCO	-0,0594	0,0131	0,0095	-0,0853 (*)	0,0500 (***)	-0,1902 (***)	0,0340	0,0622 (*)	0,0042	-0,1729 (***)	1,0000		
	401	681	349	395	823	421	368	730	730	730	823		
Company	0,0361	0,0271	-0,0916 (*)	0,1189 (**)	-0,0418	0,0641	-0,0445	-0,0243	0,0175	0,0184	-0,6840 (***)	1,0000	
	401	681	349	395	823	421	368	730	730	730	823	823	
NGO	0,0003	-0,0401	0,0959 (*)	0,0245	-0,0116	0,2596 (***)	-0,0099	-0,1093 (***)	0,0131	0,2516 (***)	-0,5905 (***)	-0,0878 (**)	1,0000
	401	681	349	395	823	421	368	730	730	730	823	823	823

Table 9: Variable correlations (N=823).

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

The majority of the Ugandan microfinance providers are SACCOs (676 institutions), which explains the high prevalence of savings collection: over 550 institutions reported to have collected voluntary savings in 2005. Judging by the mean and maximum numbers of deposits to loans ratios, there are clearly some institutions that focus largely on savings, and offer credit services only as a side product.

Geographically, the MFIs are not evenly distributed. Kampala alone hosts 5 % of MFIs, but the whole Northern region has only 9 % of them (this probably being the result of the civil war), and the Eastern region 19 %. MFIs seem to be concentrated in the Western region. The institutions are quite equally spread in urban and rural locations, however.

6.4. Methodology and limitations of the data

The dataset provided by the Census is appropriate for the purposes of this study, as it provides a nationally representative set of institutions. It thus provides an excellent testing ground for determinants of financial sustainability and outreach within the microfinance sector of a single country, and it is possible to compare the results with those of Cull et al. (2007 and 2009), who use data from leading MFIs from several countries. Mission drift and profitability levels are studied separately and with different methodologies.

According to Cull et al. (2007, 110), "Empirical progress on understanding the trade-offs in microfinance has been held back by the lack of variation in prices and programme elements necessary for identification of key parameters." The Ugandan dataset, however, provides a great variation of microcredit programs and operational practices, enabling the study of possible trade-offs. Furthermore, by focusing on one country the present analysis poses a significant advantage relative to Cull et al.'s (2007) analysis. The Ugandan dataset provides a more representative picture of reality and of the dynamics within one country than the set of leading MFIs world-wide that report to the MIX organization and that can provide quality data on their operations.

As the dataset is a static cross-section of the country, the actual occurrence of mission drift cannot be determined, as data over a longer time period would be needed for that. Nevertheless, the possible patterns in the data can be identified and useful inferences regarding the debate on mission drift can be made. These possible patterns are studied with a regression approach.

Cross-section regression analyses typically suffer from heteroscedasticity (e.g. Cameron and Trivedi 2005), meaning that the error terms' variance is not constant over observations (i.e. $E[e_i^2|X_i]=\sigma_i^2$ varies over i), which renders the coefficient estimates obtained by using ordinary least squares (OLS) regression inefficient, though they remain unbiased. Therefore, the fulfillment of the homoscedasticity assumption in OLS regressions is studied with the help of residual plots (residuals plotted against the predicted values). Where heteroscedasticity is found to be a problem, more reliable results are obtained by using three additional regression methods that correct for heteroscedasticity: robust regression and two different weighted least squares (WLS) regressions.

Robust regression uses heteroscedasticity-consistent standard errors, and it thus renders the probabilities of the corresponding coefficient estimates more accurate, and the inferences made from them more reliable (Long and Ervin 2000). WLS regression can introduce even further efficiency gains relative to robust regression (Cameron and Trivedi 2005). WLS is performed both by weighting by the estimate of $E[e_i^2|X_i]^{-1}$, i.e. the variance of the error terms in OLS regression, and by optimizing the weights by using generalized method of moments (GMM).

The mission drift regression analysis tries to emulate the analysis performed by Cull et al. (2007) as well as possible. This way it is possible to test whether the patterns they found with the data on leading international microfinance institutions hold in a single-country context as well. But the dataset has some shortcomings that constrain the analysis to some extent. Most importantly, the analysis on average loan sizes and share of women borrowers is limited to MFIs using individual lending only. This is because there is some inconsistency in reporting the numbers of group clients, making the total number of clients an unreliable measure for those with any group clients. Therefore, the total number of clients and the outreach indicators (average loan size and share of women borrowers) cannot be reliably determined for MFIs that have reported any group clients. Even though the inconsistency with reporting group

clients is limited, all institutions with any reported group clients have been left out in order to avoid the possible distortion of results, leaving only individual lenders available for analysis.

Even though the analysis on trade-offs and mission drift is constrained to individual lenders, the inferences made from the analysis are still useful. The inability to compare individual and group lending is of course lamentable, but individual-based lenders are an interesting and important group in Uganda. As was already mentioned in the preceding Section, the majority of the Ugandan MFIs are purely individual-based lenders, only a handful using nothing but the traditional group lending method. This corresponds to the notion made in Section 2.1 that lenders around the world have been switching to individual lending. This trend has sometimes been connected to mission drift, as individual loans are typically directed at relatively wealthier clients. By studying trade-offs of individual lenders, it can be determined whether they are especially susceptible to mission drift. In addition, as there are so few pure group lenders in Uganda, it would be hard to generalize the information drawn from them, and the information would even be somewhat irrelevant. Furthermore, it would be challenging to interpret the average loan size for those who employ both individual and group based lending, as the loan sizes between individual and group loans are most likely very different, the average situating somewhere in between them.

The analysis regarding the financial performance of microfinance institutions is performed by simply examining the sustainability levels of different groups and performing means tests. The data unfortunately does not have enough information for a profitability regression analysis as it lacks information on for example capital costs and portfolio yields. This thesis therefore settles for studying profitability patterns by comparing different groups in a similar fashion as Cull et al. in their 2009 paper (they do not apply means test, however). The common method for means testing, the t-test, is not suitable for this dataset as the variables are not normally distributed. Therefore, means tests are performed with the Wilcoxon-Mann-Whitney test (WMW for short), which is a non-parametric test and does not require the samples to be drawn from normal distributions (Corder and Foreman 2009).

The WMW test compares two independent groups (for example, the financial performance of MFIs in a certain region does not depend on the performance of those in another region). In the test, the values of the two groups are rank ordered, and then studied whether they are randomly distributed or clustered at opposite ends. The test thus studies the distribution of the

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two groups and determines whether the means are different by chance. (Corder and Foreman 2009, Chapter 4) The null hypothesis is that there is no systematic difference between the two groups, and the significance level is set at 5 %. This analysis is not constrained to individual lenders but employs the whole dataset.

Another shortcoming of the dataset is that all the respondents of the Census have not answered all the questions. The missing of some data causes the number of observations available for the analyses to diminish. The missing data might also cause the analysis to become biased to some extent, as it is probable that in addition to those that simply do not have advanced enough accounting systems to be able to answer all the questions, there are surely many respondents that deliberately chose not to answer some questions (e.g. because they considered the information was unfavorable to them). The lack of information on the institutions' assets is the most notable shortcoming of the dataset: only 425 out of 823 institutions report their assets for 2005. This is in part due to questionnaire design (the institutions were asked to report assets as in their *latest* balance sheet – some have reported 2004 figures) but most likely also involves some bias. Therefore some of the institutions included in the analyses are likely to be more 'advanced' institutions than those excluded because of missing data. Nevertheless, the sample used in the analysis still provides a good national representation geographically and across institutional factors.

6.5. Profitability analysis

The profitability patterns of Ugandan MFIs are studied by comparing the share of profitable institutions in different groups; see Tables 10 – 12. The hypothesis that is tested is that institutional variables have significant explanatory power with respect to the profitability levels of Ugandan microfinance institutions. The reviewed evidence of Zeller and Johannsen (2006) and Cull et al. (2009) suggest that SACCOs, NGOs and companies could differ in their financial performance, as well as group lenders and the other lending methodologies. The possible differences between regions and rural and urban areas are also studied, because the varying poverty levels could affect the profitability of the institutions.

In Tables 11 and 12, financial performance is measured with two variables: return on assets (ROA)[17] and a financial ratio called here the simplified operating self-sufficiency (SOSS)[18]. Return on assets describes how efficiently a MFI's assets are being used. As was already mentioned above, the data has limited information on institutions' assets, which limits the number of observations available for analysis. Therefore, performance is measured with another variable as well, in order to extract more information from the data.

The simplified operating self-sufficiency is a similar variable as the FSS that Cull et al. (2007) use, but it is cruder: SOSS is simply the institution's revenue divided by its expenses. But like FSS, it describes the extent to which the MFI is able to create sufficient revenue to cover its costs and indicates whether the institution is able to operate without subsidies: ratios below one indicate it is not. Even though both ROA and SOSS are calculated using operating expenditures and revenues, the low correlation (0,25; see Table 9) between the two variables is explained by the variation in the institution's asset bases – institutions covering their costs might not be doing so efficiently with relation to their assets.

In Table 10, profitability is measured as revenues exceeding operating expenses (or just breaking even), i.e. a SOSS ratio of 1 or above. The most striking finding here is the wide prevalence of profitability among Ugandan microfinance institutions. Altogether, four out of five MFIs were profitable in 2005, and in each category the share of profitable MFIs exceeds 60 %. But even among the high overall level of cost-coverage, some clear differences emerge between groups. Most importantly, group lenders are notably less frequently profitable than individual lenders and those employing both kinds of contracts, as well as NGOs compared to SACCOs or companies. Cull et al. (2009) reported similar findings in their analysis of 346 leading microfinance institutions: NGOs were less often profitable than other non-bank financial organizations, and individual lenders more often than those employing other lending methodologies. Even though Cull et al. define profitability at a higher level, financial self-sufficiency rather than operating self-sufficiency, the pattern is similar, suggesting that the operating methods of the MFIs does play a role in determining the profitability of the institutions.

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[17] ROA = (Operating revenue – Operating expenses) / Assets

[18] SOSS = Operating revenue / Operating expenses.

Table 10: Share of profitable institutions in Uganda (N=823).

	n	share of profitable MFIs
Individual lender	372	82 %
Employs both lending types	247	81 %
Group lender	18	67 %
Kampala	38	82 %
Central region (excl. Kampala)	129	78 %
Eastern region	122	77 %
Northern region	61	72 %
Western region	329	86 %
Rural	382	81 %
Urban	293	81 %
SACCO	581	81 %
NGO	35	66 %
Company	52	94 %
All MFIs	679	81 %

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Table 11 shows the breakdown of ROA and SOSS levels, whose statistical significances are tested. The Wilcoxon-Mann-Whitney (WMW) test for mean differences shows that the differences between lending methodologies are not statistically significant (see Table 12), except for differences between individual lenders and MFIs using both lending methodologies. The results for institutional types, however, indicate that the financial performance of SACCOs, NGOs and companies systematically differ from each other. Even though differences in poverty levels between Uganda's administrative regions as well as between rural and urban regions are so dramatic, the only systematic difference was between Eastern and Western regions, according to the WMW test. Because most of the regional WMW tests are not significant, they are not reported here for space-saving purposes.

One might expect different patterns to emerge from the war-torn Northern region than the rest of the country. In an unreported analysis, the profitability patterns were tested also for the rest of the country excluding Northern region, but the results were not affected by this restriction. Tables 10 and 11 also show that institutions in the Northern are as able as the others to cover their operating costs by their revenue.

Table 11: Financial performance of Ugandan MFIs (N=823).

Individual lender		n	median	SACCO		n	median
	ROA	215	0,06		ROA	359	0,06
	SOSS	373	1,47		SOSS	583	1,42
Employs both lending methods		n	median	NGO		n	median
	ROA	160	0,06		ROA	13	0,03
	SOSS	247	1,28		SOSS	35	1,08
Group lender		n	median	Company		n	median
	ROA	13	0,10		ROA	22	0,13
	SOSS	18	1,43		SOSS	52	1,50
Kampala		n	median	Western region		n	median
	ROA	15	0,04		ROA	213	0,08
	SOSS	38	1,48		SOSS	329	1,42
Central region (excluding Kampala)		n	median	Rural areas		n	median
	ROA	71	0,07		ROA	237	0,06
	SOSS	130	1,42		SOSS	384	1,38
Eastern region		n	median	Urban areas		n	median
	ROA	63	0,03		ROA	161	0,06
	SOSS	122	1,22		SOSS	293	1,45
Northern region		n	median				
	ROA	39	0,07				
	SOSS	62	1,36				

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Table 12: Results of the Wilcoxon-Mann-Whitney test.

		Z	p
Lending methodology			
Individual lenders VS Both lending methods	ROA	-0,59	0,5559
	SOSS	**-2,28**	**0,0227**
Individual lenders VS Group lenders	ROA	-0,07	0,9413
	SOSS	-0,83	0,4044
Both lending methods VS Group lenders	ROA	0,15	0,8833
	SOSS	-0,23	0,8198
Institution type			
SACCOs VS NGOs	ROA	0,01	0,9895
	SOSS	**-2,82**	**0,0049**
SACCOs VS Companies	ROA	**1,96**	**0,0497**
	SOSS	1,85	0,0646
NGOs VS Companies	ROA	-1,18	0,2388
	SOSS	**-3,48**	**0,0005**

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Note: A p-value below 0,05 indicates that the groups are systematically different at a 5 % confidence level.

The inferences made from these results are discussed in more detail in Section 6.7 together with the mission drift results.

6.6. Mission drift analysis

6.6.1. Variable descriptions

As has already been discussed, mission drift implies a change in the client portfolio away from the poorest customers and towards relatively more affluent ones in the pursuit of higher financial sustainability. This is hypothesized to be a concern especially for mature institutions. The main hypothesis that is tested here is therefore that outreach is negatively affected by higher financial performance, older age and bigger size of the institution. Additionally, regional and institutional variables ought to have an effect on outreach, which is controlled for.

The regression equation for analyzing these mission drift patterns is the following:

$$Outreach_i = \alpha_i + \beta_1 \times Financial\ performance_i + \beta_2 \times Age_i + \beta_3 \times Size_i + \beta_4 \times Loans\ to\ assets\ ratio_i + \beta_5 \times Region_i + \beta_6 \times Institutional\ type_i + \varepsilon_i$$

In the outreach analysis, the main dependent variable is average loan size, which is calculated from all the loans disbursed during the year[19]. Another way to determine average loan sizes is to calculate the average outstanding balance from end-of-year information, but as the average of all disbursed loans captures more information from the whole year, it is chosen instead. The variable is measured in Ugandan shillings (UGX). The share of women is often used as an outreach indicator as well, as is typical for microfinance texts concerning outreach. But as was discussed in Section 6.1, women in Uganda do not seem to have significantly more problems in accessing credit than men. However, an attempt to map any possible patterns for this variable is made by performing a separate regression with the share of women borrowers as the dependent variable. In the regression, the share is given as a percentage between 0 and 100 %. The correlation between average loan size and share of women variables are

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[19] Average loan size = Value of loans disbursed during the year / Number of loans disbursed during the year.

negatively correlated, as would be expected if women are poorer than men (and thus require smaller loans), but the relationship is not statistically significant (see Table 9). Trade-offs between profitability and outreach are determined by a positive effect on average loan size and a negative effect on the share of women borrowers.

Since the static cross-country data does not allow for actual mission drift analysis, the principal objective here is to study what kind of a relationship between outreach and profitability can be identified. As has already been mentioned, this analysis is constrained to individual lenders only, as average loan sizes or shares of women borrowers cannot be calculated for MFIs with any group clients. The sample size is therefore 429 institutions.

The explanatory variables are chosen such that the results can be compared to those of Cull et al. (2007) as far as possible, though the availability of data limits this to some extent. In addition, the effect of some additional variables is tested, based on the literature reviewed in Chapter 5. The following explains both how the variables are composed, and what is their assumed impact on outreach.

Financial performance: By using the two financial performance variables presented in the preceding Section, return on assets (ROA) and the simplified operating self-sufficiency (SOSS), as explanatory variables, the relationship between the financial and social objectives can be pinned down. The correlation table (Table 9) indicates that there might be trade-offs between the financial performance and loan size but not necessarily the share of women clients. The effects of ROA and SOSS are studied in separate regressions, holding other explanatory variables constant. Previously in this thesis these two indicators have been presented as decimal fractions, but in order to receive more meaningful coefficients, they are here transformed into percentage form (e.g. a return on assets of 0,05 is now 5 [%]).

Age: As mission drift is considered a gradual shift in time, age of the MFI is an important variable: older, more mature MFIs that are past their start-up phase and try to increase their access to commercial capital might be more prone to disburse larger loans and crowd out poorer borrowers than younger institutions. An institution's age is measured in years from the date it started operations.

Size: Similarly as age, the size of the MFI is an indicator of its maturity and thus its proneness to mission drift. An institution's size is measured by its total assets, and it has been scaled by UGX 1 000 000 in order to receive more meaningful coefficients.

Loans to assets ratio: The loans to assets ratio indicates how big a portion of the institution's assets are tied up in its loan portfolio. It is defined as (end-of-year loan portfolio) / (end-of-year assets). Similarly as ROA and SOSS, this ratio is turned into percentage form. Cull et al. (2007) use the ratio to describe the institution's business practices (it's 'orientation'), and it can be interpreted as its ability to attract a large customer base, and also as an indicator of the variety of its operations. Though they use the variable only in their profitability regressions and not mission drift analysis, it is included in this analysis nevertheless, since it is likely to reveal institutional behavior regarding outreach as well: a high loans to assets ratio indicates a focus on credit in the services portfolio, which could indicate a search for efficiency through focusing on a core product. A low loans to assets ratio could indicate that credit is a mere side-product for the institution, which could lead to its credit operations being less efficient.

Region: This variable captures both the geographical region of the MFI as well as the nature of its operating context (rural or urban). Since the district of Kampala is the main urban area of the country and of the Central region, and is a very different operating environment than the rest of region, Kampala is included as a separate region in the analysis. According to the dataset, 20 % of MFIs in the Central region operate in Kampala. The states of the dummy variable are therefore Kampala, Central (excluding Kampala), Eastern, Northern and Western; Kampala is the omitted group. The location of the MFI's operating place is defined as rural or urban, the dummy set 1 for urban areas. As poverty levels vary significantly between the geographic regions and between rural and urban areas, the operating environment is an important control variable. The number of potential poor clients in the regions affects also the institution's ability to reach them, and therefore the regional variables are likely to capture part of the variation in average loan sizes, but not necessarily in the share of women clients.

Institutional type: The institutions are divided into SACCOs, NGOs and companies. SACCOs, NGOs and companies might reach out to clients of different poverty levels already by design. As community-based institutions, credit cooperatives typically have wide outreach, catering mainly to non-poor clients but also to significant numbers of poorer individuals, even though they are in essence for-profit organizations. NGOs on the other hand might be the

most focused on the poorest individuals and women. The correlations in Table 9 suggest that being a SACCOs is negatively correlated with loan size, and being a company is positively correlated. A company might also have fewer women as clients than SACCOs and NGOs. However, as the majority of institutions in the sample are SACCOs (369 institutions out of the 429 individual lenders), significant results for this variable might be hard to obtain. Here, SACCOs are the omitted category. Cull et al. (2007) do not have a similar institution type variable in their analysis, but since the variable has potentially significant impacts on the poverty orientation of the institutions, as discussed in Chapter 5, it is included in this analysis in order to control for outreach differences specific to institutional design.

6.6.2. Regression results

The results of the regressions for average loan size and share of women borrowers are presented in Tables 13 – 15. The most important finding is that the results show that the main findings of Cull et al. (2007) may not hold universally: there seems to be a trade-off between profitability and poverty outreach for individual lenders in Uganda, though the relationship is not unambiguous. The second set of regressions shows that in Uganda outreach to women might not be suffering from higher profitability.

The probability of heteroscedasticity in the analysis was already mentioned, and the residual plots obtained from the ordinary least squares (OLS) regressions show that it is indeed a concern in part of the regressions (the plots are shown in Appendix I). The fan-like shape of the residual plots for the average loan size specification shows that the homoscedasticity assumption of OLS is not fulfilled. The form of heteroscedasticity could not be identified, and variable transformations by e.g. taking logarithms do not solve the problem. Corrective action for this specification is therefore taken, and the results of robust regression and weighted least squares regression (WLS) are shown in addition to the OLS results in Tables 13 and 14. But the scatter plot of the residuals from the OLS regression for the share of women borrowers specifications is spread out evenly, and therefore only OLS results are analyzed for this specification (Table 15).

Even though OLS regression with regard to average loan size suggests that financial performance has a statistically significant, increasing effect on loan sizes, the robust

regression renders these estimates insignificant. Interestingly however, the magnitude of this effect is very small[20]. Therefore, even very large changes in profitability do not seem to yield notable changes in the average loan sizes of the individual lenders, at least not at the moment studied.

Table 13: Robust and uncorrected OLS regression results for mission drift; average loan size in Ugandan shillings as the dependent variable (individual lenders; N=429).

	Robust regression results				OLS regression results			
	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value
Constant	812 792,3	0,1852	670 576,2	0,1904	**812 792,3**	**0,0005**	**670 576,2**	**0,0031**
	[611 014,8]		[510 164,1]		[227 989]		[223 794]	
ROA	1 434,5	0,3545			**1 434,5**	**0,0160**		
	[1 545,3]				[589,5]			
SOSS			132,1	0,4370			**132,1**	**< 0,0001**
			[169,6]				[31,4]	
Age	9 853,7	0,1711	7 821,6	0,1844	**9 853,7**	**0,0728**	7 821,6	0,1381
	[7 169,5]		[5 868,8]		[5 459,1]		[5 250,8]	
Size of assets (scaled)	227,8	0,4158	245,0	0,4275	227,8	0,2192	245,0	0,1725
	[279,3]		[308,1]		[184,8]		[178,9]	
Loans to assets ratio	**4 608,7**	**0,0465**	**4 432,7**	**0,0509**	**4 608,7**	**0,0018**	**4 432,7**	**0,0020**
	[2 298,2]		[2 255,1]		[1 453,9]		[1 409,3]	
Rural/urban location	**202 931,7**	**0,0748**	**201 116,9**	**0,0846**	**202 931,7**	**0,0343**	**201 116,9**	**0,0302**
	[113 211,1]		[115 968,0]		[95 100]		[92 044]	
Central region excluding Kampala	-913 500,3	0,2232	-787 694,9	0,2341	**-913 500,3**	**< 0,0001**	**-787 694,9**	**0,0004**
	[747 214,0]		[659 708,3]		[224 914]		[218 642]	
Eastern region	-970 203,1	0,1773	-801 865,6	0,1757	**-970 203,1**	**< 0,0001**	**-801 865,6**	**0,0004**
	[716 271,9]		[589 796,9]		[227 028]		[222 942]	
Northern region	-885 468,0	0,1870	-764 439,7	0,1875	**-885 468,0**	**0,0006**	**-764 439,7**	**0,0023**
	[668 419,6]		[577 746,6]		[252 420]		[246 652]	
Western region	-793 936,9	0,2890	-641 607,3	0,3129	**-793 936,9**	**0,0003**	**-641 607,3**	**0,0029**
	[746 419,9]		[633 990,5]		[217 296]		[212 391]	
NGO	-197 012,8	0,1531	-215 288,9	0,1665	-197 012,8	0,4984	-215 288,9	0,4450
	[137 298,2]		[154 962,1]		[290 374]		[281 262]	
Company	**-249 549,0**	**0,0483**	**-256 403,1**	**0,0637**	-249 549,0	0,1842	-256 403,1	0,1587
	[125 508,4]		[137 369,8]		[187 195]		[181 157]	
R^2	0,2378		0,2848		0,2378		0,2848	
Observations used	186		186		186		186	

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Note: Standard error's in brackets below the corresponding coefficient.

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[20] In 2005, GDP per capita in Uganda was approximately 560 000 Ugandan shillings, or 320 US dollars (IMF World Economic Outlook Database). Thus the coefficient for ROA in the OLS regression indicates that a rise in ROA of one percentage point is associated with an increase in average loan size of UGX 1 435; an amount approximately equivalent to 0,3 % of income per capita. Similarly, for the SOSS coefficient 132 this figure is 0,02 %.

Table 14: Weighted least squares regression results for mission drift; average loan size in Ugandan shillings as the dependent variable (individual lenders; N=429).

	Weighted Least Squares regression results (GMM method)				Weighted Least Squares regression results ($1/E[e_i^2]$) as weight)			
	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value	Coefficient estimate	p-value
Constant	812 792,3	0,1198	670 576,2	0,0874	859 152,0	0,0002	782 152,0	0,0007
	[519 879]		[390 161]		[226 086]		[227 792]	
ROA	1 434,5	0,2084			1 305,3	0,0084		
	[1 136,1]				[489,9]			
SOSS			132,1	0,2267			142,9	< 0,0001
			[108,9]				[28,3]	
Age	9 853,7	0,1009	7 821,6	0,0829	10 688,0	0,0542	9 463,8	0,0845
	[5 975,5]		[4 483,9]		[5 512,8]		[5 455,3]	
Size of assets (scaled)	227,8	0,1995	245,0	0,1938	156,0	0,3369	178,2	0,2708
	[176,9]		[187,9]		[162,0]		[161,3]	
Loans to assets ratio	4 608,7	0,0204	4 432,7	0,0109	4 921,5	0,0012	5 106,6	0,0007
	[1 969,6]		[1 722,5]		[1 489,9]		[1 483,4]	
Rural/urban location	202 931,7	0,0876	201 116,9	0,0886	187 955,0	0,0564	188 489,0	0,0554
	[118 137]		[117 455]		[97 839]		[97 722]	
Central region excluding Kampala	-913 500,3	0,1491	-787 694,9	0,0950	-964 025,0	< 0,0001	-956 208,0	< 0,0001
	[630 417]		[469 282]		[222 594]		[219 552]	
Eastern region	-970 203,1	0,1057	-801 865,6	0,0615	-1 027 542,0	< 0,0001	-952 395,0	< 0,0001
	[596 573]		[426 056]		[225 123]		[225 843]	
Northern region	-885 468,0	0,1181	-764 439,7	0,0735	-926 572,0	0,0003	-890 681,0	0,0005
	[563 763]		[424 571]		[249 710]		[250 236]	
Western region	-793 936,9	0,2074	-641 607,3	0,1633	-857 200,0	< 0,0001	-804 995,0	0,0002
	[627 328]		[458 345]		[214 750]		[213 729]	
NGO	-197 012,8	0,1079	-215 288,9	0,1041	-178 879,0	0,5026	-202 925,0	0,4459
	[121 913]		[131 759]		[266 286]		[265 620]	
Company	-249 549,0	0,0106	-256 403,1	0,0126	-257 916,0	0,1607	-266 494,0	0,1465
	[96 543,7]		[101 749]		[183 082]		[182 698]	
R^2	0,2378		0,2848		0,2527		0,3465	
Observations used	186		186		186		186	

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Note: Standard error's in brackets below the corresponding coefficient.

In the robust regression, age and size coefficients are insignificant, and only some control variables are statistically significant. A higher loans to assets ratio is associated with bigger loans, as is operating in an urban region relative to a rural area. The company dummy coefficient is significant and negative, indicating that SACCOs (the omitted category) might be disbursing larger loans than companies.

The results of the three other regression methods are different from the robust results. By using $E[e_i^2|X_i]^{-1}$, the variance of the error terms, as a weight, the positive effect of financial performance is significant, though still very small, and in GMM estimation the significance levels of ROA and SOSS coefficient estimates are reduced. More interestingly, the coefficient for age is positive and significant in OLS and the two WLS regressions, though size (measured by total assets) is not significant in any of the regressions. In most of these regressions, also the geographical region in which the MFI operates would seem to have a fixed effect on loan sizes: loans in Kampala tend to be considerably larger than in the other regions. The positive coefficients for the loans to assets ratio and the rural/urban divide are significant in all the regressions. GMM estimation also renders the company and NGO dummies' coefficients significant as well, their negative values indicating that they disburse smaller loans relative to SACCOs.

The OLS regression on the share of women suggests a different dynamics for outreach to women (Table 15). Financial performance variables ROA and SOSS do not receive statistically significant coefficients, and the magnitude is also trivially small. Only some control variables are statistically significant, namely the rural/urban, Central region and NGO dummies. The loans to assets ratio indicating MFI orientation is also significant in the ROA specification, but the coefficient is very small. The fit of the regression is much lower than for the average loan size specification, indicating that the regression model is not able to explain the dynamics regarding lending to women accurately. This was an expected result, since in Uganda women might not experience relatively more difficulties in borrowing than men (see Table 6).

Trade-off patterns are tested separately for the Northern region as well, since the ongoing civil war could affect the behavior of people and institutions there. The regional dummy in the displayed regressions captures only the fixed effect to loan sizes and share of women, but if the underlying behavioral pattern is different in the region, its inclusion in the regression could render the analysis inaccurate. But, in unreported specifications, the effect of the region was tested by leaving it out and running the regression on the rest of the country. The results do not change with this restriction, and so the analysis on the whole country can be considered reliable in this sense.

Table 15: Regression results for mission drift; share of women borrowers (%) as the dependent variable (individual lenders; N=429).

	OLS regression results			
	Coefficient estimate	p-value	Coefficient estimate	p-value
Constant	**58,1039**	**<,0001**	**61,3049**	**<,0001**
	[10,9221]		[11,0364]	
ROA	0,0310	0,2537		
	[0,02704]			
SOSS			-0,0023	0,1148
			[0,0015]	
Age	0,0565	0,8421	0,0302	0,9142
	[0,2829]		[0,2799]	
Size of assets (scaled)	0,0003	0,9787	-0,0013	0,9184
	[0,0128]		[0,0127]	
Loans to assets ratio	**-0,1197**	**0,0865**	-0,1091	0,1169
	[0,0694]		[0,0692]	
Rural/urban location	**8,3754**	**0,0655**	**8,7719**	**0,0529**
	[4,5132]		[4,4940]	
Central region excluding Kampala	**-21,5055**	**0,0516**	**-22,4785**	**0,0418**
	[10,9583]		[10,9472]	
Eastern region	-9,6506	0,3757	-12,4447	0,2594
	[10,8612]		[10,9917]	
Northern region	-5,8390	0,6221	-8,9746	0,4519
	[11,8228]		[11,8987]	
Western region	-10,3406	0,3208	-12,3211	0,2404
	[10,3804]		[10,4521]	
NGO	**-31,9978**	**0,0797**	**-31,5571**	**0,0827**
	[18,1340]		[18,0633]	
Company	-4,3219	0,6216	-3,2223	0,7112
	[8,7378]		[8,6863]	
R^2	0,1064		0,1136	
Observations used	158		158	

Source: Author's calculations, based on data from the 2006 Census of Microfinance Institutions in Uganda.

Note: Standard error's in brackets below the corresponding coefficient.

In short, the Ugandan regression analysis finds similar patterns that Cull et al. (2007) were able to establish in their analysis relative to age, but it also suggests a more worrying pattern regarding the trade-off between profitability and outreach to poorest clients. Higher profitability levels seem to be associated with larger average loan sizes, indicating less outreach. This mission drift effect is not thoroughly conclusive, though. Older institutions also seem to be gradually increasing their average loan sizes. Lending to women does not

seem to be decreased when profitability levels increase or institutions mature. These results are discussed in more detail together with the profitability analysis in the next Section.

6.7. Discussion

Outreach patterns of Ugandan individual lenders were studied with a regression approach, where outreach was proxied both by average loan size and share of women borrowers. The results from the robust and GMM estimated weighted least squares regressions with respect to average loan size indicate that profitability and reaching out to the poor are not necessarily contradictory objectives: the coefficients for the financial variables are positive, but not significant. However, the fact that the uncorrected OLS analysis and the manually weighted least squares analysis do suggest a significant trade-off between the two objectives gives reason to suspect some kind of trade-off dynamics. The relatively small size of the coefficients for the financial performance variables (0,3 % of GDP per capita for ROA and 0,02 for SOSS) indicates that, at least at the moment studied, the changes in loan sizes along with increased profitability do not tend to be considerably large. What can be interpreted from these results is that there is evidence of a negative relationship between outreach to the poor and profitability, but it is not necessarily a very systematic relationship.

The age coefficient is positive and statistically significant in all the regression methods except for robust regression, giving evidence that institutions tend to disburse larger loans as they grow older. Size, however, is not a significant variable in any of the regressions. The increasing effect of age on loan sizes is not necessarily an indicator of mission drift, as there are other reasons why loan sizes could grow in time. For example, the clients of the MFI might be maturing along with the loans they have borrowed, requiring larger and larger loans in time. This is an indication of the problems with using such simple variables as average loan size as a proxy for outreach. However, because the regression indicates that loan sizes tend to increase as institutions become older, the possibility of mission drift in maturing institutions cannot be ruled out.

With respect to lending to women, the regression analysis finds no evidence of mission drift away from women borrowers along with increased profitability, older age or bigger size of the institutions, since the coefficients for these variables are not statistically significant. This

is likely to reflect the finding that Ugandan women do not seem to experience more difficulties in borrowing than men: for that reason, institutions might not target exclusively women as clients, and therefore do they neither drift away from them.

The regression analysis reveals that outreach is not solely a factor of financial performance or age: it tends to differ by operating region, institutional type and loans to assets ratio. The rural/urban coefficient is positive and significant in all of the average loan size regressions, indicating that loan sizes tend to be systematically larger in urban areas. In the different specifications and with different regression methods, the significance of the regional variables varies, but the main inference that can be drawn from the negative coefficients is that loan sizes tend to be larger in Kampala than in other regions. These differences are likely to be due to the relative amounts of poor people in each region, which affects the institutions' overall possibilities to have deep outreach. For example in Kampala, where the poverty level is lower, the people are relatively wealthier and therefore likely to require larger loans than in other, poorer areas. However, with respect to women borrowers, the regression suggests a contrary pattern. The rural/urban dummy coefficient is positive in these regressions, which indicates that in urban regions MFIs tend to include more women in their credit programs. This could indicate that women's status is different in rural areas and they therefore experience more difficulties in lending. Or perhaps they stay more often at home than in urban areas and are therefore more difficult to reach out to. The regional dummies' negative coefficients indicate similar patterns, though only Central region has a significant coefficient. Thus, in rural areas and poorer regions, outreach seems to be deeper with respect to poor individuals, but shallower with respect to women.

The institutional type can reflect the institutions' orientation towards the poor. In the average loan size specifications, the significance levels of these variables vary by regression method, but overall it seems that SACCOs tend to disburse the largest loans relative to the other institutional forms, NGOs and companies. It is a bit surprising that they disburse even larger loans than companies, whereas relative to NGOs this was an expected result, since SACCOs do not have an exclusive poverty focus, which NGOs are likely to have. It is noteworthy that the coefficients for the NGO and company dummies are of similar magnitude, indicating that there is not much difference in their depth of outreach in individual loans. In addition, SACCOs seem to disburse individual loans to women notably more often than NGOs. This could be due to the reasons mentioned earlier: if in Uganda women do not experience more

problems in borrowing than men, NGOs might not have a specific focus on female clients. Additionally, as SACCOs are community–based and member-owned, this difference could mean that many of the SACCOs are formed by women and therefore lend more to women than other institution types.

The loans to assets ratio can also be considered as an orientation indicator. In the average loan size regressions, it is positive and significant across specifications and methods, indicating that institutions focusing exclusively on lending activities also tend to serve larger loans, whereas those institutions whose assets are tied in other activities as well, are more inclined towards smaller loans. This is in fact a similar trend as in the turn towards sustainability that was discussed in Section 3.1; when the idea of sustainable microfinance started to raise its head, the focus of microfinance was narrowed down to only financial services. It is quite intuitive that institutions in pursuit of self-sufficiency attempt to focus on their core activities, but it seems that this can at the same time lead to the exclusion of the poorest clients. The relationship is similar with respect to lending to women, though this effect is not conclusive.

These results from Uganda contrast the results of the reference article (Cull et al. 2007). Their analysis is the first attempt to systematically analyze mission drift patterns, and it finds countervailing outreach trends for individual lenders: those individual lenders that are financially self-sufficient tend to be more focused on the poor as well as women, but older and larger (measured by assets) lenders have less outreach, suggesting that maturing individual lenders would be susceptible to mission drift but that outreach and profitability are compatible objectives. Of the average loan size regressions on Ugandan MFIs, the robust regression does not support any of these findings, and the other regression methods suggest that there might be similar patterns relative to age (but not size) but contradictory patterns relative to profitability. Regarding outreach to women, the Ugandan analysis indicates no significant effect of financial performance or institutional maturity.

Even though the results from the average loan size regression indicate more severe mission drift patterns than Cull et al.'s results, the evidence still is not waterproof enough to entirely disprove their finding of a negative coefficient on profitability in a similar regression setting. Here, in the robust and GMM regressions the positive financial performance coefficients are not significant. With respect to age, OLS and the two WLS regressions verify the increasing effect they found, but the robust method does not. The size variable is not significant in any of

the regressions here. Therefore, the Ugandan example cannot unequivocally prove or disprove Cull et al.'s findings, but the positive coefficients on financial performance indicators still suggest that their findings are not universal.

One reason to the absence of a clear-cut, systematic relationship between profitability and outreach in the Ugandan regression analysis could be that the more socially-minded MFIs are able to attract lots of subsidies and grants because of their social missions, and therefore they do not feel the need to increase their rates of cost-covering, even though they still might be able to achieve significant cost-coverage. Their behavior regarding outreach and self-sufficiency might therefore not be systematic. In addition, the majority of the institutions studied are SACCOs, which are for-profit organizations but still may have other community development goals as well, and their performance might therefore vary a lot regarding these two variables. Such issues could explain the varying significance levels of the financial performance variables and the overall low fit of the regression model.

The profitability analysis of the Ugandan microfinance sector, on its part, provides similar findings as the analysis of Cull et al. (2009), indicating that certain institutional types and lending methods are more often profitable than others. NGOs and group lenders were the least profitable group overall. However, profitability is in general high among all the MFIs in Uganda: four out of five institutions covered their operating expenses by the income they generated from their services in 2005. This leaves only 20 % of the institutions dependent on subsidies and grants to cover their operating costs. This does not mean that the profitable 80 % would not use subsidies as well, but they are already able to reduce their dependency on them. This perhaps reflects the history of the microfinance movement in Uganda that was discussed in Section 6.2: donors promoted good business practices from the beginning, and the profitability levels show that the institutions have taken the pursuit of sustainability seriously.

The differences in profitability levels among the different groups are statistically significant. The Wilcoxon-Mann-Whitney test showed that MFIs using only individual lending have a higher SOSS ratio than those using both lending methodologies. Furthermore, SACCOs have a higher SOSS ratio than companies, who in turn have a higher SOSS ratio than NGOs but also higher ROA than SACCOs. These results are quite intuitive. NGOs most likely put less weight on the pursuit for profits than the other institutions that are typically for-profit

organizations. However, it seems that operating as an NGO does not rule out the possibility to cover their costs, since over 60 % of them already do so. But NGOs are also likely to receive financial support from socially-minded donors because of their social mission, so that they might feel they do not need to strive towards higher cost-coverage. SACCOs, on the other hand, are typically for-profit organizations, which explains their higher profitability levels relative to NGOs. But companies seem to be able to achieve profitability more efficiently than SACCOs with regard to their asset base, which could be explained by a more business-like approach that enhances efficiency further.

The difference between lending methodologies is statistically significant only between individual lenders and those employing both methods, the former having higher SOSS ratio than the latter. The finding that differences relative to group lenders are not statistically significant can simply be due to the small number of group lenders in the data. The differences in the observed prevalence of cost-coverage between lending methodologies can be due to several reasons. One thing is that group lending might incur significant costs on the lender, for example because of the frequent group meetings. It is also often asserted that group lending is the best way to extend loans to the poorest borrowers, who cannot afford loans without the group guarantee. The poor also typically require only small loans, and hence lower profitability levels among group lenders could be a result of disbursing smaller loans on average, resulting in higher fixed costs per dollar disbursed. This cannot be verified from the data, however, since it does not provide information on group lenders' average loan sizes. However, even if such a focus on smaller loans could be discovered, the fact that over 60 % of group lenders are able to cover their operating costs indicates that MFIs need not necessarily move up-market to larger loans in order to reach self-sufficiency.

Region-wise, profitability levels were not statistically significantly different from each other. This is somewhat surprising because of the stark differences in poverty incidences in the regions, but perhaps the differences in profitability are then derived from institutional types and lending methodologies rather than the operating region. This could mean that those MFI types that seem to enable higher cost-coverage and operational efficiency, do so regardless of the region and their clients' poverty – which is, in fact, what microfinance innovation has been all about.

Combining the results of the two analyses, the complex picture of outreach and profitability patterns is revealed. The relationship between the two is not clear-cut, and there are several other factors that need to be taken into account as well. The institutional design, the target groups and their relative costs as well as the operating region are bound to affect the performance of the microfinance institutions. The trade-off between profitability and outreach is an important concern, but a consideration of the operations in a wider perspective in order to avoid mission drift is needed, instead of focusing only on the effect of profits. Another thing worth considering here is the young age of the Ugandan microfinance sector. The results of the analysis indicate that, at least at the studied period, outreach (as proxied by average loan size) of the more profitable institutions is not considerably worse than that of the less profitable institutions. But since the trend in this direction is statistically significant, the magnitude of this effect could increase in time as the industry develops.

Though these results are illustrative of the patterns in the Ugandan microfinance industry, the analyses do have their drawbacks. The profitability analysis is illustrative in picturing the differences between different kinds of institutions, but with nothing more than group-wise averages, it is not possible to identify reasons why these differences emerge. The differences could reflect some underlying, systematic differences in behavior: for example, the cost structures of the institutions could differ due to their abilities to attract donations or access commercial capital. The analysis does however indicate that these differences in behavior or structure are systematic between certain types of microfinance institutions but not between regions, which is already an important finding. With more accurate data, the underlying differences between these MFI types that cause these differences in profitability could be established.

Part of the regression analyses suffered from heteroscedasticity, which was corrected for in several ways. The significance levels of the results vary between the different regression methods, and there is no clear-cut way to determine which of the regression methods and corresponding significance levels is most reliable in the presence of heteroscedasticity. Analyses using the heteroscedasticity-consistent covariance matrix (HCCM) such as robust regression are consistent even if the exact form of heteroscedasticity is not known (Long and Ervin 2000; Cameron and Trivedi 2005). On the other hand, also GMM estimation in weighted regression gives improved estimates when the form of heteroscedasticity is not known (e.g. Greene 2008). Weighting by $E[e_i^2|X_i]^{-1}$, the variance of the error terms,

observations with larger standard deviation of the error term receive relatively less weight in the regression than observations with smaller standard deviation, which also improves precision relative to uncorrected OLS estimates (Angrist and Pischke 2009).

However, in their recent publication, Angrist and Pischke (2009) suggest that if the sole motivation for weighting is the correction of heteroscedasticity, using heteroscedasticity-consistent standard errors is preferable to weighting. One reason is that the estimates of $E[e_i^2|X_i]$ may not be very good, and if that is the case, such a weighted regression can behave worse than the unweighted version. GMM estimation has also received some critique (e.g. Altonji and Segal 1994). The robust regression could therefore be considered the best estimate of the significance levels, but when interpreting the results, insight from the other regression methods is drawn as well.

The regression analysis with respect to the share of women borrowers fulfilled the homoscedasticity assumption, and was therefore analyzed only by uncorrected OLS regression. Under homoscedasticity, the Gauss-Markov theorems are fulfilled and OLS estimates are efficient, unbiased and consistent (so called BLUE: Best Linear Unbiased Estimator), and the OLS results can therefore be considered reliable. In addition, Angrist and Pischke (2009, 307) suggest that "the best standard error when there is no heteroscedasticity is the conventional estimate", and that robust regression can inflate standard errors unnecessarily under homoscedasticity. In this sense, the OLS analysis for the share of women borrowers can be considered reliable.

The regression analyses also have quite low a fit (R^2 below 50 %), and one should therefore regard these inferences with caution (though the fit measures of the regression on average loan size are quite comparable to those obtained by Cull et al. [2007]). These models might not succeed in describing the determinants of loan size or the share of women borrowers comprehensively. With regard to the latter, this was to be expected, because women do not seem to be experiencing more difficulties in borrowing than men. MFIs might not be systematically discriminating against women, rendering the attempt to explain clients' gender by financial performance trivial. Heteroscedasticity in the average loan size specification could also be a result of model misspecification (e.g. Angrist and Pischke 2009), and it could be that outreach of the Ugandan MFIs cannot be explained in such a systematic way. If this is the case, it can be interpreted as good news in the sense that these MFIs might not be

systematically turning away from the poorest borrowers or women in their pursuit for profitability.

With respect to R^2 as a measure of fit, it should also be remembered that it can be artificially increased by adding more independent variables to the regression, and therefore it might be too strong a conclusion that the model is not a good description of reality. In any case, the model is not perfect, and additional information on the Ugandan microfinance institutions could help to analyze their outreach more reliably. This analysis is able to study only the individual lenders, and it would be interesting to compare the mission drift susceptibility of individual lenders, group lenders and those using both methods, since the lending methodology could reflect differences in outreach focus. In addition to enabling a comparison between the lending methodologies, such data would also enable an analysis of the dynamics of the whole country, and not just the group of individual lenders. Also, an interesting relationship to be studied would be the interest rates used and the corresponding outreach levels, as some studies have indicated that the poor are very interest-sensitive. Another one would be the effect of donations versus that of commercial capital, in order to analyze whether those who have reached access to the latter have turned away from the poorest clients. Additional information on the institutions would also be needed in order to better determine an institution's poverty outreach more accurately, since average loan size is such an incomplete measure.

The predictive power of any regression model is always subject to successful model specification. It is relevant to ask whether these kinds of regression models accurately explain a microfinance institution's outreach. This analysis followed that of Cull et al.'s (2007) but was also restricted by the data available. The omitted variables may lead to biased estimates of the coefficients. In addition, the direction of causality is difficult to pin down, though the analysis here suggests that financial performance is a significant determinant of outreach proxied by average loan size. Furthermore, panel data would of course be preferable to such a static analysis.

In sum, the analysis performed here is conclusive in determining differences in different institutional types' profitability levels. The differences are similar to those found in Cull et al. (2009). Patterns regarding mission drift cannot be determined perfectly, but it seems that for individual lenders, there tends to be a positive relationship between average loan size and

profitability, but not between borrowing to women and being profitable. The results indicate that there tend to be trade-offs between outreach and profitability, which is in contradiction to the findings of Cull et al. (2007).

The results also show that outreach and profitability of microfinance institutions seem to be affected by several factors. The discussion on mission drift should take into account that the pursuit of profitability is not the sole factor determining institutions' focus on the poorest customers. Institutional design such as the form of operation and chosen lending methodology, as well the operating region may be important determinants for outreach and self-sufficiency. In Uganda, where the industry is still very young relative to more established regions such as Bangladesh, practitioners need to take into account the different forces affecting their ability to reach these two missions. A wider viewpoint into the development of the industry should therefore be adopted.

7. Conclusions

The objective of this thesis has been to study the profitability and outreach patterns of microfinance both theoretically and empirically. The motivation for this study is the prevailing, unsettled debate regarding mission drift. The drive for the commercialization of microfinance has raised worries of mission drift, meaning that profit-seeking microfinance institutions would turn away from serving the poorest customers, who were the original target group of the movement. It is therefore of interest to study the issues of profitability and outreach more carefully, and to determine whether they are compatible objectives or are there trade-offs between the two.

World-wide, there are examples of institutions that are able to achieve both objectives, regardless of their institutional form or lending methodologies. But there is a clear lack of extensive empirical studies with data that is representative of the whole industry: the few earlier studies have focused on leading microfinance institutions. This thesis contributes to the research of mission drift by performing an empirical analysis with a representative dataset from a case country, Uganda. The analysis found that the relationship between the financial

and poverty objectives is negative, though its significance remains ambiguous. The thesis therefore concludes that mission drift is a justified concern for some institutions, which is in contradiction to the findings of earlier studies.

The empirical part of the thesis was two-piece. The profitability of Ugandan institutions was studied by comparing the profitability levels of different groups of institutions, following the 2009 study of Cull, Demirgüç-Kunt and Morduch. The outreach part followed the mission drift analysis of Cull et al.'s 2007 paper – the first in its kind – and a regression approach was employed there. The Ugandan analysis improves on the reference articles, since profitability and outreach dynamics are here studied in a more representative setting.

The profitability analysis supported earlier findings of different institutional types' different abilities to reach financial sustainability. Group lenders and non-governmental organizations (NGOs) were found to be the least often profitable relative to other lending methods and institutional forms. This is likely to reflect these institutions' high weight on their social mission, and thus also their abilities to raise donations, which reduces their need to become self-sufficient. The high social weight on the poorest can also come at a cost: working with them can be more difficult and thus costly, especially if they work with poor people in remote places that are hard to reach.

By analyzing the outreach of individual lenders of Uganda, the mission drift analysis found evidence of a trade-off between financial performance measures and outreach, which is in contradiction to the earlier studies. Whereas Cull et al. (2007) found that individual lenders only become susceptible to mission drift as they grow older, the Ugandan analysis suggests that in addition to the effect of age, institutions that show a higher level of profitability tend to disburse larger loans. However, as the different regression methods result in different levels of statistical significance for the profitability and age coefficients, the relationships cannot be considered as definite. The relatively small size of the trade-off could signify that at least at the moment studied, outreach (as proxied by average loan size) of the more profitable institutions is not considerably worse than that of the less profitable institutions, though this could change as the industry develops and changes. More likely, there are still some other underlying factors at play, which cause other institutions to be susceptible to mission drift, and others not. The analysis did not find evidence of decreased outreach towards women borrowers along with higher self-sufficiency.

It is also likely that the regression models do not explain all the underlying outreach dynamics in Uganda. Further analysis with more information on Ugandan institutions could serve to improve the understanding of outreach determinants in the country. In addition, as calculated average loan sizes are considered an inadequate indicator of depth of outreach, and focus on women might not be a suitable indicator in the Ugandan context, analyses employing more sophisticated indicators are needed. Even though the Ugandan dataset offers a representative picture of the microfinance industry of one country, the downside is that the results cannot be generalized to other contexts. Country-specific poverty levels and legal and economic environments can affect outreach and profitability importantly, and continent-specific differences can also occur. More country-specific analyses could therefore be helpful in studying these differences, and that way identifying factors that affect mission drift irrespective of the country context. Better data is direly needed in order to understand the mission drift phenomenon better.

Based on the literature review, this thesis also finds that the high cost of serving the poorest clients relatively to the wealthier ones can be one cause of mission drift, and that competition for profit-oriented donor funds create mission drift tensions. However, models that illustrate these effects also pin-point that serving the relatively wealthier poor can be in concordance with the institution's mission of poverty reduction – the trade-off actually changes into one between the total poverty effect, and poverty effect per lent dollar. How much the institution values serving the poorest relative to serving the better off poor influences the mission drift dynamics significantly. Empirical studies to support these theoretical models are also needed.

Microfinance institutions differ in their abilities to become financially self-sufficient and to reach out to the poorest people. There is clearly demand for both kinds of microfinance institutions in the industry: those serving the poorest, and those serving large numbers of relatively better off. The former will often be dependent on the sufficiency of donor funds, while the others have more possibilities to access commercial capital and thus to expand their operations. The possibility of serving large numbers of poor people through well-run, financially self-sufficient institutions is rather to be embraced than shunned, since that way a greater total reduction of poverty can be achieved. The socially-minded practitioners might feel that reaping a profit from the misfortune of the poor is morally wrong. However, if microfinance can develop into a profitable activity and an independent market, this could enhance the development-promoting effects of microfinance even further by offering positive

incentives to the poor and making them in fact less dependent on welfare projects and donor-supported programs. The prospect of mission drift is nevertheless to be taken seriously, since the dynamics have yet not been thoroughly identified. Further studies are therefore needed to better understand the various factors that affect outreach and profitability, so that lending practices can be designed adequately in order to prevent mission drift. If mission drift occurs, even though a greater total poverty effect can be achieved, less of the poorest clients are being served. The trade-off between depth and scale of outreach is analogical to that between profitability and outreach.

In sum, mission drift is a real concern that ought to be taken seriously. Even though the commercialization of microfinance has positive implications for poverty reduction, it should be remembered that the same operating model might not fit all. There is room for various types of institutions in the microfinance field, as both the poorest of the poor and the relatively better off poor stand to benefit from access to credit they would otherwise be barred from. There is no way of determining which is a more 'right' objective – serving many better off clients or fewer very poor people – but it is rather a question of opinion and viewpoint. This thesis concludes that both depth and scale are important in microfinance, and neither objective should be discarded. A wider perspective into the pursuit of these goals and the potential trade-offs should however be employed.

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Appendix I: Residual plots from OLS regressions

Note: Predicted values on the horizontal axis, residuals on the vertical axis

Residual plots for the regression equation:

$$Average\ loan\ size_i = \alpha_i + \beta_1 \times Financial\ performance_i + \beta_2 \times Age_i + \beta_3 \times Size_i + \beta_4 \times Loans\ to\ assets\ ratio_i + \beta_5 \times Region_i + \beta_6 \times Institutional\ type_i + \varepsilon_i$$

(Note: specification 1 = financial performance indicator is ROA; specification 2 = financial performance indicator is SOSS)
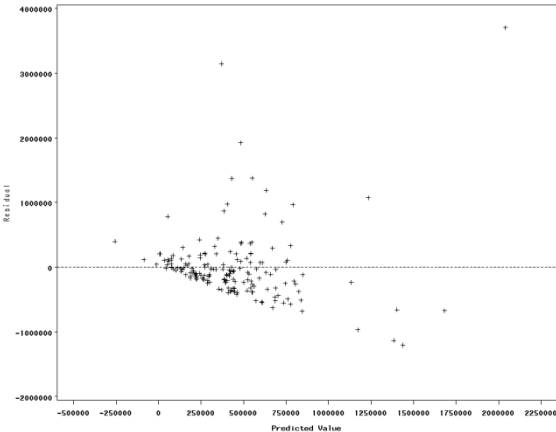
Figure 11: Residual plot for the OLS regression, specification 1.
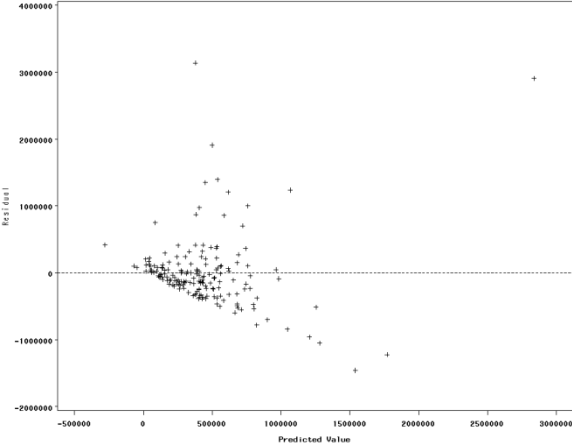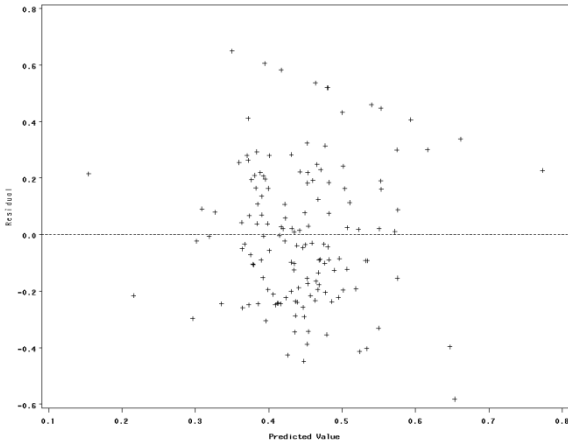

Figure 12: Residual plot for the OLS regression, specification 2.

Residual plots for the regression equation:

$$\textit{Share of women borrowers}_i = \alpha_i + \beta_1 \times \textit{Financial performance}_i + \beta_2 \times \textit{Age}_i + \beta_3 \times$$
$$\textit{Size}_i + \beta_4 \times \textit{Loans to assets ratio}_i + \beta_5 \times \textit{Region}_i + \beta_6 \times \textit{Institutional type}_i + \varepsilon_i$$

(Note: specification 1 = financial performance indicator is ROA; specification 2 = financial performance indicator is SOSS)

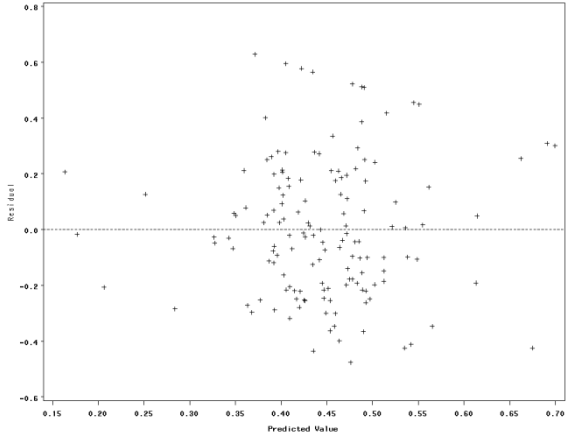**Figure 13: Residual plot for the OLS regression, specification 1.**

Figure 14: Residual plot for the OLS regression, specification 2.