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Financial Efficiency and Social Impact of Microfinance Institutions Using Self-Organizing Maps

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Summary. — This paper contributes to the literature by investigating whether the increased focus on financial self-sustainability of microfinance institutions has been disadvantageous to the target audience. We investigate the association between social efficiency and financial performance using a comprehensive data set that includes 650 microfinance institutions. A self-organizing map methodology is used to fully capture the existing heterogeneity among institutions. The results show that we cannot support the hypothesis that there exists a trade-off. On the contrary, we find evidence of a significant, positive relationship between social efficiency and financial performance.

Key words — microfinance, self-organizing maps, outreach, social impact, profitability, self-sustainability

1. INTRODUCTION

Microfinance experienced an unprecedented growth during the last decades. The United Nations proclaimed the year 2005 as the "International Year of Microcredit" (Year of Microcredit, 2005). Not surprisingly, the academic community has devoted a lot of research on the challenges microfinance faces. In recent years, it has been argued that microfinance institutions (MFIs) have abandoned their social mission due to an increased focus on financial performance. Does emphasizing self-sustainability result in mission drift (Mersland & Strøm, 2010; Hermes & Lensink, 2011)? This paper will try to add new insights and results to this debate.

Initially, donor- and government-funded credit was made available to poor borrowers, typically at below-market interest rates. Their goal was to reach the "poorest-of-the-poor" (Robinson, 2001) as microcredit programs have their roots in humanitarian and developmental plans. Since funding was provided by either donors or governments, institutional self-reliance and cost control were not considered crucial.

In the 1980s and 1990s, the continuing dependency on subsidies and evidence of unsatisfactory performance resulted in the development of a new microfinance premise of self-sustainability. Donors started to put forward that subsidization should only support newly established MFIs instead of keeping them constantly afloat (Morduch, 1999). They argued that cost control and efficiency would ultimately reduce the dependency of the industry on subsidies, which would allow MFIs to stay in business in the long-run. Furthermore, MFIs will bear the consequences of their own actions, eventually forcing them to act more carefully. MFIs must endeavor to generate sufficient income from the core activities and costs have to be reduced. Besides this evolution, MFIs were also confronted with greater competition and increased interest from the private sector (Rhyne & Otero, 2006). The new focus on self-sustainability meant a schism in the management of microfinance institutions.

Answering whether this new approach has resulted in less social impact is not straightforward. This is mainly caused by the wide differences between microfinance institutions. After all, "microfinance institution" is just an umbrella term that includes many different types. Firstly, MFIs operate in almost all parts of the world, making them exposed to different social and legal systems. Secondly, some MFIs operate as non-governmental organizations (NGOs) or cooperatives whereas others operate as banks. Thirdly, some MFIs are relatively young in contrast to others which have been in business for decades. Other MFIs focus their business on supplying loans only while others offer a wide range of financial products. In sum, the diversity among MFIs makes it harder to report conclusive findings. Practitioners must always bear in mind that while an assumption might be true for one kind of MFIs, the same assumption could be violated for another kind of MFIs. Academic research on the microfinance industry must therefore try to capture as much of the aforementioned differences as possible to avoid potentially biased conclusions. For instance, Quayes (2012) divides the MFI spectrum in low- and high disclosure MFIs. Our study endeavors to go even further in the breakdown of MFIs. Firstly, we use a technique called self-organizing maps (SOM) to create graphical two-dimensional maps where similar MFIs are mapped close together

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and dissimilar more apart. This methodology is a superior method to graphically plot the heterogeneity among MFIs with regard to the different input variables. To our knowledge, SOM have not been used in the microfinance literature. Secondly, we have included a wide variety of explanatory input variables based on the SEEP Network (2010) standardized approach. This ensures comparability between this paper and previous/future research. Thirdly, a large number of MFIs, drawn from the Microfinance Information Exchange database (Microfinance Information Exchange, 2010c), is used.

The possible existence of mission drift and its consequences has sparked off much debates in the academic community. The increase in the number of citations on this subject can be seen in panel A of Figure 1. It depicts the increase in the number of academic journal citations according to Web of Knowledge. On the y-axis, the number of annual citations using the search term "microfinance", refined by "outreach" (and synonyms) and "sustainability" (and synonyms), is plotted. The growth in the number of citations is obvious. Panel B plots the sum of the gross loan portfolio in USD by region and confirms the unprecedented growth during the last decade. The data are gathered from the Microfinance Information Exchange database using its Cross-Market Analysis tool (Microfinance Information Exchange, 2012). It is clear that all regions experienced growth, though the growth is most pronounced in Latin America & the Caribbean and Eastern Europe & Central Asia.

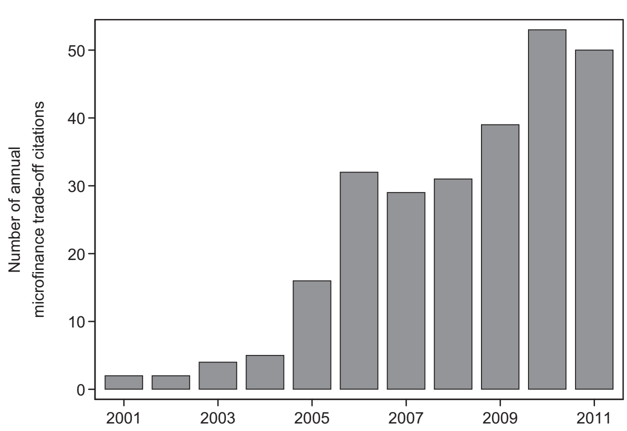
Section 2 provides the reader with a comprehensive literature review. The next section deals with the used self-organizing map methodology and Section 4 elaborates on the data used in this paper. In the next section, we interpret the results of the analysis and in Section 7 we validate our results. Finally, Section 8 reaches a conclusion.

2. LITERATURE

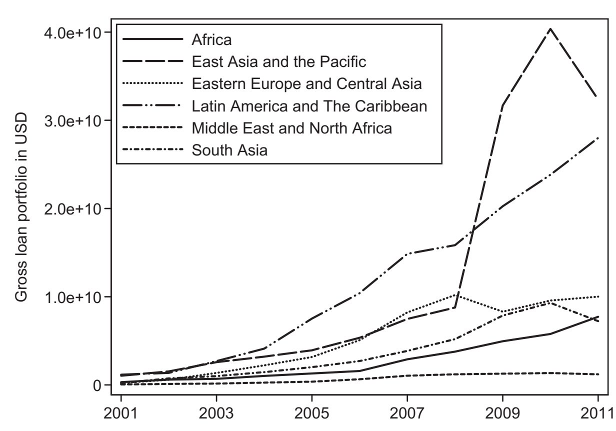
The conceptual foundations of the "sustainability paradigm" stem from the failed traditional subsidized credit programs during the 1960s and 1970s (Adams, Graham, & Von Pischke, 1984; Robinson, 2001). These subsidized programs were neither successful from a social impact perspective, nor from a good corporate governance point of view since (1) subsidized interest rates combined with a relatively high cost of making small loans ensured that loans were channeled to larger borrowers and not to poorer households, and (2) funding was provided by donors, making many subsidized credit programs susceptible to a high degree of moral hazard, resulting in widespread corruption and high default rates. General consensus among practitioners and academics on the future of microfinance focused on more sustainable and more efficient institutions. However, discussion arose between two groups of thought. On the one hand, "welfarists" tend to place relatively greater weight on outreach and its depth where depth of outreach refers to reaching the poorest clients who are very costly to serve (Brau & Woller, 2004). On the other hand, 'institutionalists' emphasize self-reliance and the ability to cover operating and financing costs. They claim that this approach is the only viable way to serve a large number of borrowers, resulting in a high breadth of outreach. It is important to mention that both groups ultimately want to maximize social impact, however they differ on whom to target and how to achieve this goal.

The advocates of the subsidized credit delivery approach argue that the increased focus on financial efficiency eventually leads to abandoning the original social mission of serving large groups of very poor borrowers. In recent years, many discussions about microfinance focused on the hypothesis that some MFIs have in fact abandoned this social mission. It is alleged that these MFIs even engaged in aggressive marketing and strong-arm tactics to recover loans. A well documented case is the Andhra Pradesh crisis in which MFIs were accused of being responsible for suicides and community expulsions (Economist, 2010; Srivastava, Bharadwaj-Chand, & Sinha, 2010). Other authors even put forward that there exists a "huge disconnect [...] between the heady claims made for microfinance and the everyday reality" (Bateman, 2010, p.vi). He mentions that evidence that "mission drift" has become a serious problem is now quite overwhelming (Bateman, 2010, p.54).

Many practitioners and academics agree that there could exist a trade-off between financial efficiency and social performance (Otero & Rhyne, 1994; Von Pischke, 1996; Morduch, 2000; Woller, 2002; Mersland & Strøm, 2010; Hermes, Lensink, & Meesters, 2011). They argue that reaching the poorest of the poor is more costly due to the relatively high unit cost of small loans (Von Pischke, 1996; Conning, 1999; Navajas, Schreiner, Meyer, Gonzalez-vega, & Rodriguez-



Panel A: Number of trade-off citations



Panel B: Sum of gross loan portfolios by region

Figure 1. *Growth of microfinance.*