Weathering the storm: ownership structure and performance of microfinance institutions in the wake of the global financial crisis

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A B S T R A C T

This study investigates the effects of the 2008 global financial crisis on the performance of different microfinance ownership types. The analysis in this study relies on a novel methodological framework that provides consistent productivity measures in the presence of undesirable outputs, while taking into account the technological heterogeneity among different ownership types. The results show that banks and non-bank financial institutions (NBFIs) that performed better immediately before the crisis, suffered more during the crisis and early post-crisis periods. Cooperatives and non-governmental organizations (NGOs), on the other hand, were less affected by the crisis. Moreover, results indicate that the pattern of productivity growth of all ownership forms three years after the eruption of the crisis was remarkably similar to their productivity growth pattern in the very early phase of the pre-crisis period.

1. Introduction

Recent decades have seen a massive expansion in the microfinance industry (Kevane and Wydick, 2001; Louis et al., 2013), generating entrepreneurial opportunities for the marginalized and vulnerable groups who are often excluded from the traditional financial system. The Microcredit Summit Campaign Report 2015 (www.microcreditsummit.org) reveals that at the end of 2013, microfinance institutions (MFIs) served approximately 211 million clients, more than half of whom were among the poorest when they applied for their first loan. The above report further indicates that the total number of the poorest clients with outstanding loans declined for the third consecutive year, from 116 million in 2012 to 114 million in 2013, a reduction that clearly reflects the efforts of MFIs to promote financial inclusion in developing countries. While a healthy microfinance system is huge source of benefit for the less well-off in emerging markets (Armendáriz and Morduch, 2005; Lahkar and Pingali, 2016), any failure of the industry can have devastating consequences for the entire economy. This was witnessed the 2008 global financial crisis, which led not only to the collapse of large formal financial institutions (Schubert, 2011; Beltratti and Stulz, 2012; Kollmann et al., 2013) but also to considerable downturns in the microfinance industry (Wanger, 2012; Wagner and Winkler, 2013) comprising a substantial proportion of the financial market in developing economies. In this context, Wanger (2012) comments that ‘... by becoming part of the global financial system, microfinance has lost one of the characteristics distinguishing it from traditional banking, namely, its greater resilience to crises in domestic and global financial markets’. However, that the question arises whether all MFIs have been affected by the crisis equally. Because different microfinance ownership types use different technologies, and consequently have different efficiency levels (Servin et al., 2012), it may be more logical to argue that the effects of the crisis on MFI performance may differ from one ownership form to another. In fact microfinance ownerships simply have too many variables: different regulatory and supervisory mechanisms, different agency problems, different governance models as well as different levels of risk preferences (Tchakoute-Tchuigoua, 2010; Servin et al., 2012). For instance, banks and non-bank financial institutions (NBFIs) are shareholder institutions and put more weight on financial returns. Cooperatives and non-governmental organizations (NGOs), on the other hand, are non-regulated and more socially-oriented. Unlike non-regulated ownership types, banks and NBFIs are regulated and hence have more opportunities to offer a wider range of products and services (Tchakoute-Tchuigoua, 2010). Yet systemic risk of shareholder institutions is higher compared...
to that of cooperatives and NGOs (Di Bella, 2011). Given these differences in microfinance ownership structure, the effects of the crisis on MFI performance can be more drastic for some ownership types and less drastic for others. For example, the crisis may have had a severe impact on NGOs that have transformed into other shareholding entities, i.e., NBFI. To accomplish their financial objectives, as they transformed, and with many of them relying on their funding relationships with local and foreign capital markets, such transformed institutions would suffer severe losses and even go bankrupt if the capital market fails. Another example is state-owned development banks. They are more likely to have experienced a substantial adverse effect at the time of economic uncertainty due to political interventions. Strategic decisions of some state-owned microfinance banks are often biased by political motivations (e.g., subsidized lending to supporters to secure their political survival). Such interventions, particularly in a turbulent environment, place the top management in a difficult situation that can eventually lead these institutions being in distress.

In this context, an analysis of the efficiency and productivity dynamics of different microfinance ownership types, particularly in the midst of a financial turmoil, is likely to be important for policy evaluation. Since the performance of a financial institution in past crises not only provides a measure of its exposure to systemic risk but also predicts its performance in another crisis (Fahlenbrach et al., 2012), realizing which ownerships fail and which weather the storm without disruption helps policymakers and regulators to design risk-focused monetary policies. Such information is also useful for donors, investors and incumbent MFIs or, perhaps more importantly, NGOs thinking of transforming in to for-profit ownership types to develop more innovative operating programs. So far, however, there has been little discussion about the performance of MFIs under the effect of financial crisis.

It is against this backdrop, that I investigate the effects of the global financial crisis on productivity dynamics of different microfinance ownership types. My study is based on a cross-country analysis of a sample of 298 MFIs, for which I have consistent data on the relevant variables for the period 2005–2011. I split the entire time period into three sub-periods and then explored the productivity levels of different microfinance ownership types before (2005–2007), during (2007–2008) and after the global financial crisis (2008–2011). Using pre- and post-crisis periods as benchmarks, I explored which ownership types were more robust to the crisis and which were more affected by the crisis.

This study is distinct from the existing microfinance literature of MFI efficiency and productivity in several aspects. First, much of the earlier empirical studies so far are about one country (e.g., Nghiem et al., 2006; Plot-Lepetit and Nzongang, 2014; Wijesiri et al., 2015) or take a regional perspective (e.g., Gutiérrez-Nieto et al., 2007; Paxton, 2007; Servin et al., 2012). Moreover, all of these studies except, for that of Wijesiri and Meoli (2015), are based on cross-sectional data that restricts the use of panel data econometric methods. However, no empirical study for the period 2005–2012 is known to the author, and thus no evidence exists of the impacts of the global financial crisis on MFI performance. In the present study, I examine MFIs from a large number of countries. The use of time-series data in this research is also advantageous. Second, none of the earlier studies, to my knowledge, accounts for undesirable outputs in measuring MFI efficiency, i.e., non-performing loans (NPLs). Given the collateral-free lending method adopted by many MFIs, loan portfolios are more likely to be volatile and weak, especially in an event of financial distress. Thus, it is important to consider the effect of the growing volume of NPLs in the productivity process for meaningful comparison. For example, Mester (1996) emphasizes the importance of taking into account the quality and risk of loans when analyzing bank efficiency, because banks that produce risky loans could be labeled as efficient and more productive when compared to more responsible banks with low NPLs. In order to escape from inaccurate benchmarking, I, therefore, introduce undesirable output NPLs that are a byproduct of the production process into my models. Third, from a methodological perspective, the novelty of the current paper lies in the use of a Malmquist Luenberger productivity index (MLPI) combined with a metafrontier concept. I do not use the conventional Malmquist productivity index (MPI) in this research, since this method, albeit widely used, does not credit reduction of undesirable outputs. Instead, it expands both desirable and undesirable outputs at the same rate. To the contrary, the MLPI developed by Chung et al. (1997) gives credit firms for proportionate increases in desirable outputs and proportionate decreases in undesirable outputs. This index allows the derivation of consistent productivity measures in the presence of undesirable outputs, but does not take into account the technological heterogeneity among different microfinance ownership types. One way to solve this problem is the metafrontier concept proposed by O’Donnell et al. (2008) in the non-parametric data envelopment analysis (DEA) framework. This approach provides a homogeneous boundary for MFIs operating under different production technologies. In this study, I combine the metafrontier concept and Malmquist Luenberger productivity indices and estimate the comparable productivity measures for the MFIs with different ownership status. Finally, I decompose the MLPI into two components, namely, changes in efficiency and technology, to determine the sources of productivity changes over time. As such, I am better able to isolate the impact of the financial crisis on the productivity of MFIs with different ownership structures.

The remainder of the paper unfolds as follows. Section 2 presents the methodology. Section 3 describes the data and variables used. Results are presented in Section 4 and Section 5 concludes.

2. Methodology

In this section, I briefly describe the methodological approaches followed in my analysis. First, I present the underlying assumptions and then describe the directional distance functions on which the MLPI is based. Next, I illustrate the formulation of MLPI and its decompositions. Finally, I discuss the combination of both the metafrontier concept and MLPI to construct the groupfrontiers and metafrontier.

2.1. The Fundamental Assumptions

I assume that there are \( J = \{1, \ldots, J\} \) decision making units (DMUs) using \( N \) inputs \((x \in R^+)^N\) to produce \( M \) desirable outputs \((y \in R^+)^M\) and \( L \) undesirable outputs \((b \in R^-)^L\). The set of production possibilities for each DMU is defined as:

\[
P(\mathbf{x}) = \{(y, b) : \mathbf{x} \text{ can produce } (y, b), \mathbf{x} \in R^N\}.
\]

(1)

It is assumed that the output sets are closed and bounded sets and that inputs are freely disposable. Referring to Färe et al. (2007), following three axioms are used to specify the production possibility set with undesirable outputs.

\[
\text{if } (y, b) \in P(\mathbf{x}) \text{ and } b = 0 \text{ then } y = 0
\]

(2a)
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