Productivity and its determinants in microfinance institutions (MFIs): Evidence from South Asian countries

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ABSTRACT

This study investigates the productivity of 50 South Asian microfinance institutions (MFIs) by deploying a Malmquist Productivity Index (an extension of Data Envelopment Analysis) with a panel data covering the years 2007 to 2012. The empirical results indicate that South Asian MFIs have improved their annual average productivity by 2.1% largely due to changes in technical efficiency. However, the overall level of technological change is shown to remain static. Further decomposition of technical efficiency change indicates that overall productivity progress is mainly due to scale efficiency. In the course of investigating the determinants of productivity, this study found that the productivity of South Asian MFIs is significantly affected by financial, economic and institutional factors. Policy implications are further discussed.

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1. Introduction

Microfinance has been available in South Asia for almost four decades and the concept being originally developed in Bangladesh. This innovative approach to poverty alleviation by fostering entrepreneurship was pioneered by Professor Muhammad Yunus, a Bangladeshi banking innovator awarded the Nobel Peace Prize in 2006 jointly with the Grameen Bank. The long history of microfinance saw several changes and innovations in its operation enabled by favorable policy reforms. It is now one of the most common development tools used to fight poverty in South Asia. With this remarkable progress in financial development and technological advancement, the microfinance sector has come into intense competition that has resulted in the expansion of the production frontier of MFIs, including enhancing social outreach (providing financial services to the poorest of the poor) and financial sustainability (covering total costs by generating sufficient revenue) (Wijesiri and Meoli, 2015).

Although MFIs’ welfare function defines its primary mission to provide banking financial support to the poor, the long-term sustainability of MFIs depends on their capacity to support their own financing activities. Therefore with the rapid development of the microfinance sector in South Asian countries, there is a need to investigate the productivity of MFIs to better understand the dynamics of their operations. Thus, an analysis of productivity and its determinants will help to identify the strengths and weaknesses of the microfinance sector. Given these interests, this study considers the following

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1 Social outreach and outreach are interchangeably used in this study.
Table 1
Basic statistics of MFIs in South Asian countries (2013)

<table>
<thead>
<tr>
<th>Country</th>
<th>Number of MFIs</th>
<th>Active borrowers</th>
<th>Gross loan portfolio (USD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Afghanistan</td>
<td>6</td>
<td>130,895</td>
<td>125,473,550</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>37</td>
<td>20,454,217</td>
<td>3,796,696,583</td>
</tr>
<tr>
<td>Bhutan</td>
<td>1</td>
<td>38,868</td>
<td>137,413,765</td>
</tr>
<tr>
<td>India</td>
<td>87</td>
<td>32,341,809</td>
<td>5,438,693,238</td>
</tr>
<tr>
<td>Nepal</td>
<td>8</td>
<td>487,037</td>
<td>115,450,350</td>
</tr>
<tr>
<td>Pakistan</td>
<td>36</td>
<td>2,944,180</td>
<td>515,511,859</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>2</td>
<td>98,087</td>
<td>17,646,617</td>
</tr>
<tr>
<td>Total</td>
<td>177</td>
<td>56,495,093</td>
<td>10,146,885,962</td>
</tr>
</tbody>
</table>

Note: This table only includes MFIs that reported to MixMarket.

Also known as Microfinance Information Exchange (MIX). For more details, see www.mixmarket.org.

There are two questions: (1) What is the productivity of MFIs in South Asia countries? (2) How is the variation of productivity of MFIs explained by its determinants?

To answer these questions, this study uses Data Envelopment Analysis (DEA), and specifically the Malmquist Productivity Index (an extension of DEA) to examine a panel data of 50 MFIs from South Asian countries between the years 2007 and 2012. We have chosen South Asian countries given the microfinance sector in South Asia is one of the largest (in terms of number of clients and number of MFIs) among the world's developing regions of Africa, Latin America and Central Asia where microfinance has also been growing rapidly in the last decade. Furthermore, given the rapid growth and competition in the microfinance sector in South Asia (Assefa et al., 2013; McIntosh and Wydick, 2005), this study can provide an insight into operational dynamics of MFIs given the linkages between competition and productivity of MFIs. Table 1 shows the basic characteristics of South Asian MFIs in 2013.

This study contributes in several ways to the existing literature. First, it distinguishes productivity of MFIs in the South Asian region and makes comparison between countries. Second, it further identifies the determinants of productivity by looking at a number of MFI characteristics and macroeconomic factors including financial, economic and institutional. Last, in contrast to previous studies (see, Babu and Kulshreshtha, 2014; Bassem, 2014; Gebremichael and Rani, 2012; Wijesiri and Meoli, 2015), a larger dataset is being used in this study.

The rest of the study is organized as follows: Section 2 briefly discusses the recent literature on MFIs productivity. Section 3 explains the methods, selection of variables and data. Section 4 discusses the empirical findings, while Section 5 concludes the study with some policy implications, limitations and recommendations for future studies.

2. Literature review

The past two decades has seen a significant increase of interest in microfinance, thanks to both antagonists and protagonists of microfinance. Of late, the main areas of microfinance research interest are productivity and efficiency evaluation of MFIs. Normally, productivity; which refers to the volume of business that is generated (output) for a given resource (input), can be seen as one of the main engines that drives a firm’s growth. Generally, a productive/efficient MFI will provide financial services to the poor more effectively than a non-productive/inefficient MFI. As such, most MFIs aim to achieve higher productivity/efficiency in their operation. The importance of productivity for MFIs is reflected in the number of studies investigating this subject (Babu and Kulshreshtha, 2014; Bassem, 2014; Gebremichael and Rani, 2012; Mia and Chandran, 2015; Wijesiri and Meoli, 2015).

Productivity evaluation is useful in investigating a firm’s performance—whether it is progressing, regressing or remaining stagnant over time—in relation to the formulation of specific policies and strategies from an institutional perspective. Although there are various ways to measure productivity or efficiency, i.e. parametric (stochastic frontier analysis-SFA, thick frontier analysis-TFA, and distribution free approach-DFA) or non-parametric (data envelopment analysis-DEA and free disposal Hull-FDH), the selection of the method depends on the context of the researcher’s study. The parametric approach uses econometric concepts while the non-parametric approach utilizes linear programming methods. The differences between these two approaches further rely on how they handle the random error and assumptions in constructing the efficient frontier (Mokhtar et al., 2008). However, in microfinance literature, the SFA and DEA approaches are frequently used in analyzing the efficiency and productivity of MFIs.

More recently, Bassem (2014) used the total factor productivity (TFP) approach to study Middle East and North Africa (MENA) MFIs productivity during the period 2006–2011 with a sample size of 33. The study found an annual positive TFP rate of change of 4.9% mainly attributed to technical efficiency change (TEC) rather than technological change (TC). In contrast, the sector exhibited a 2.9% decline in TC in the performance of the best practicing MFIs. This finding corroborates the work of Mia and Chandran (2015), who found that in Bangladesh productivity improvement of MFIs was due to better management practices and progress in TEC. Mia and Chandran (2015) further extended their productivity studies by splitting the output indicators into financial and social outreach observing that both dimensions of productivity exhibited positive growth—3.9% and 5% per annum respectively between 2007 and 2012. Hence, it can be argued that MFIs are able to maintain both their
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