



Credit risk in microfinance industry: Evidence from sub-Saharan Africa

Sydney Chikalipah

Department of Accounting, Finance and Economics, Executive Business Centre, Bournemouth University, Bournemouth, United Kingdom

Abstract

Paradoxically, a plethora of empirical evidence in the traditional banking industry claims that smaller loans are associated with higher risk and the exact opposite is true for large loans. In this study we investigate these claims by estimating the relationship between loan sizes and credit risk in the microfinance industry. The sample used for our analysis incorporates over 2000 annual observations, and 632 microfinance institutions drawn from 37 countries of the sub-Saharan African (SSA) region over the period 1995 to 2013. Using the GMM technique, our estimates indicate that credit risk is positively related to loan sizes among microfinance institutions operating in SSA. Our findings have significant implications for the portfolio managers of microfinance institutions operating in SSA, particularly in light of the current wave of mobile money services in many countries.

© 2018 Africagrowth Institute. Production and hosting by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

JEL classification: C33; G21; G32; O12; O55

Keywords: Credit risk; Female borrowers; Loan sizes; Microfinance; sub-Saharan Africa

1. Introduction

In the last two decades, the microfinance industry in sub-Saharan Africa (SSA) has been growing rapidly at a rate of over 10% per annum (Chikalipah, 2017a). The unprecedented growth of the microfinance industry stems from a disappointing situation; the persistent failures of many traditional banks, if not all, to extend their financial services to the poor in society (Allen et al., 2011). Markedly, not only is microfinance the industry that is increasingly becoming the core of financial inclusion, but also it is an important instrument of consumption smoothing among the poor in the SSA region (Morduch, 2000). For example, between 2010 and 2015, the agriculture micro-insurance market grew in access of 400% (Kuwekita et al., 2015).¹ In addition, mobile money services are the fastest growing segment of microfinance, with over 100 million active mobile money

users in the SSA (Jack and Suri, 2014).² In some countries, including, Burundi, Cameroon, Chad, Democratic Republic of Congo, Gabon, Ghana, Guinea, Kenya, Lesotho, Liberia, Madagascar, Rwanda, Swaziland, Tanzania, Uganda, Zambia, and Zimbabwe, there are more mobile money accounts than bank accounts (Asongu, 2015).

Against this background, providing microcredit to the poor entails overcoming credit risks. The credit risks in the microfinance industry are often amplified, mostly, by two main factors: (i) lack of a collateral pledge by borrowers; and (ii) the information asymmetry between borrowers and lenders. Theoretically, these two problems are alleviated by regular monitoring, and group lending (Emekter et al., 2015). Besides that, empirical evidence in the microfinance industry indicates that targeting female borrowers significantly reduces credit risk (Agier and Szafarz, 2013; D'Espallier et al., 2011, 2013; Strøm et al., 2014).

A mounting body of empirical studies in the microfinance industry found that credit risk is negatively affected by a group

E-mail addresses: chikalipah@yahoo.co.uk, sydney.chikalipah@bournemouth.ac.uk

¹ Micro-insurance is one of the products offered by microfinance institutions; other main products and services include: microcredits, microsavings, micro-housing units, micro-consignments, micro-franchises, micro-enterprise trainings, and mobile money services.

Peer review under responsibility of Africagrowth Institute.

² Further, mobile money services differ slightly from mobile banking services. The mobile money services allow, predominantly, poor people to access financial services using mobile phones without having a formal bank account. By contrast, mobile banking services allow people to use mobile phones to manage their bank accounts.

lending methodology, targeting women borrowers and the level of lending interest rates (Ayayi, 2012; Crabb and Keller, 2006; Krauss and Walter, 2009; Lassoued, 2017; Nkamnebe and Idemobi, 2011). Yet, we are unaware of any study in the microfinance industry that has explicitly investigated the relationship between credit risks and loan sizes.³ It is this gap in the research that this study attempts to fill, and it will provide the empirical findings on the connection between credit risk and loan sizes, in the perspective of the microfinance industry. It is worth noting that the relationship between credit risk and loan sizes has been extensively analysed in the traditional banking industry (for examples, check: Ali and Daly, 2010; Berger and Udell, 1990, 1995; Booth, 1992; Harhoff and Körting, 1998; Jiménez and Saurina, 2004; Leeth and Scott, 1989).

There are several incentives for undertaking an empirical investigation on the nexus between credit risk and loan sizes in the microfinance industry of SSA. Firstly, this is partly due to commercialisation and mission drifts, in which many microfinance institutions are converting from being non-profit to profit orientated. The microfinance institutions (MFIs) that are profit oriented habitually target salaried workers and micro-businesses with relatively large loan amounts. Furthermore, profit oriented MFIs rarely exploit the group lending methodology (Agier and Szafarz, 2013; D'Espallier et al., 2011; Kevane and Wydick, 2001; Mersland and Strøm, 2010). Relatedly, the advent of mobile money services, that enables users to access microfinance products via the use of a mobile phone, has immensely reduced the joint liability lending in the microfinance industry in SSA. In the microfinance industry group lending permits the poor to replace physical collateral with social collateral. Secondly, this study will verify the extent to which the theoretical credit risk approaches, which are applicable in traditional banking, hold fast in the microfinance industry. Doing so will improve an understanding of credit risk modelling in the microfinance industry. Thirdly, and lastly, the gap in the research is one of the motivations for this paper, and aims to fill that void and provide empirical evidence on the effect of loan sizes on the credit risk of MFIs operating in the SSA region.

In light of that, we study the seemingly paradoxical relationship between loan sizes and credit risk in the microfinance industry of SSA. To do so, we utilise the microfinance firm level dataset, exclusively obtained from the Microfinance Information eXchange (MIX), which contains over 1300 annual observations. Moreover, the final sample comprises of 632 microfinance institutions, domiciled in 37 sub-Saharan African countries, and the data covers the period from 1995 to 2013. Our analysis approach is decidedly empirical, and we use the generalised method of moments (GMM) and fixed effects (FE) estimators. We apply different estimation techniques to verify the robustness of our baseline results. The robustness checks include: (i) the re-estimation of our model specification without the control variable, which is the lending interest rates variable; (ii) we also re-run our estimation model with Winsorized variables, and

this approach has modified the spurious outliers in our sample (Dixon, 1960); and (iii) we test the validity of the instrument set of GMM estimates. Briefly, and without overshadowing the main empirical findings of this study, our estimates indicate that credit risk is positively and significantly related to loan sizes in the microfinance industry of the SSA region.

The rest of the paper proceeds as follows. The next section reviews the empirical studies with particular attention devoted to the studies that investigated the credit risk in the microfinance industry. Furthermore, we also undertake a brief review of the literature that investigated the relationship between credit risk and loan sizes in the traditional banking industry. Section 3 presents the motivating theoretical model, and our estimation framework. In Section 4, we describe the data used in this study. Thereafter, in Section 5, empirical results are presented and discussed. Section 5 presents the baseline results, and Section 6 provides further results and robustness checks. Section 7 offers the summary and concluding thoughts for this study. Appendix A provides further information about the distribution of the MFIs into respective countries sampled in this study. Appendix B outlines the derivation of Cook's Distance methodology.

2. Literature review on the credit risk in microfinance

As earlier indicated, we are not aware of any empirical study that has examined the relationship between credit risk and loan sizes in the context of the microfinance industry. By stark contrast, there is a large set of empirical studies that have been conducted on the traditional banking industry. For example, Jiménez and Saurina (2004), after analysing the Spanish banks, found that large loans carry lower risk, given that a borrower is normally a large firm and its operation is known in greater detail. Similarly, Berger and Udell (1990) and Booth (1992) reached the same conclusion. Related studies conducted by Berger and Udell (1995), Harhoff and Körting (1998) and Leeth and Scott (1989) documented a negative and statistically significant relationship between loan sizes and default risk.

Having discussed the traditional banking literature on the relationship between credit risk and loan sizes, we now turn to microfinance studies that have investigated the different factors that are influencing credit risk in the industry. The starting point of the review is a recent study by Lassoued (2017), who found that group lending methodology, and the high percentage of loans granted to women, significantly reduced the credit risk of 638 microfinance institutions, drawn from 87 countries over the period 2005–2015. Correspondingly, available evidence documented by Crabb and Keller (2006), Islam (1996), Morduch (1999) and Tchakoute-Tchuigoua and Nekhili (2012) arrived at the same conclusion; the three studies claimed that group lending mitigate risk by reducing an adverse selection and the problem of a moral hazard. Equally, a mounting body of empirical evidence demonstrate that targeting a female borrower is associated with high repayment rates and lower credit risks in the microfinance industry, for such evidence see: Agier and Szafarz (2013), D'Espallier et al. (2011), D'Espallier et al. (2013) and Strøm et al. (2014).

³ Specifically, loan represents the microcredit, and the two are interchangeably used in this paper.

Download English Version:

<https://daneshyari.com/en/article/7388016>

Download Persian Version:

<https://daneshyari.com/article/7388016>

[Daneshyari.com](https://daneshyari.com)