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Over-Indebtedness in Microfinance – An Empirical Analysis of Related Factors on the Borrower Level

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Summary. — This paper analyzes the over-indebtedness of microborrowers in Ghana from a customer protection perspective. It measures over-indebtedness as a subjective indicator based on loan-related sacrifices that borrowers report. It finds that male microborrowers are more likely to be over-indebted. So are borrowers with adverse economic shocks, low returns on investment, and non-productive loan use. Over-indebtedness is lower for borrowers with good debt-literacy. General financial literacy and numeracy seem insufficient to reduce over-indebtedness. The paper details the relationship of the above factors to the specific sacrifices borrowers make and suggests that policy measures address the full complexity of the over-indebtedness phenomenon.

Key words — microfinance, over-indebtedness, customer protection, sacrifices, Africa, Ghana

1. INTRODUCTION

With increasing concerns about negative effects of microfinance, at a time where trust in the positive impact of microfinance is weakening (Duvendack *et al.*, 2011; Karlan & Goldberg, 2011), one of the most pressing challenges facing the microfinance industry today is the risk of over-indebting borrowers (Lascelles & Mendelson, 2012). The microfinance industry has only recently become aware of the risk of over-indebtedness and still suffers from a significant research gap.

One of the first studies on over-indebtedness in microfinance was conducted after a repayment crisis in Bolivia at the end of the 1990s. It identifies factors related to unexpected contract outcomes such as delinquency or any extra efforts required on behalf of borrowers (Gonzalez, 2008). Recent research triggered by over-indebtedness crises in several countries points toward microborrowers struggling with repayment in Karnataka, India (Krishnaswamy & Ponce, 2010), poor borrowers getting deeper into poverty in Tamil Nadu, India (Guérin, Roesch, Venkatasubramanian, & Kumar, 2011), and microborrowers getting over-indebted and defaulting in Bosnia and Herzegovina (Maurer & Pytkowska, 2011) as well as in Kosovo (Pytkowska & Spannuth, 2012). Taylor (2011) explains the over-indebtedness crises in Andhra Pradesh, India, from a socio-political perspective on agrarian dislocations. Schicks (in press) measures over-indebtedness among microborrowers in Ghana and shows that the risk management perspective on over-indebtedness is not sufficient to address concerns of customer protection. Servet (2013) analyzes the link between over-indebtedness and the monetization of social relationships from a macroeconomic perspective. Finally, there are attempts to develop an Early Warning Index for debt delinquency crises in microfinance markets (Kappel, Krauss, & Lontzek, 2010).

The present paper contributes to this literature by following a customer protection perspective on over-indebtedness that has so far been only partially addressed by the above papers from Bolivia, India, and Eastern Europe. It analyzes factors related to over-indebtedness in microfinance. Developing measures to avoid over-indebtedness requires a sound understanding of what drives it. To tailor effective solutions to the challenge, we need to understand the situations where over-indebtedness is most likely to exist and which borrowers are most at risk.

Working with a unique primary dataset from a survey among 531 microborrowers in Accra, Ghana, we contribute a case study from Africa, a much underrepresented geography in the research on microfinance over-indebtedness. We contribute to theory by testing and confirming several elements of a recent conceptual framework on the causes of over-indebtedness in microfinance. We use logistic regression analysis to identify how gender, adverse shocks, loan returns, and financial literacy relate to over-indebtedness. We detail the relationship of these factors to the individual sacrifices that borrowers experience (see Appendix A for the list of loan-related sacrifices).

We find that male borrowers are more likely to be over-indebted than women, as are borrowers who experience adverse economic shocks, who use loans, at least in part, for non-productive purposes, and whose investments into microenterprises produce low returns. According to their own perceptions, for nearly sixty percent of borrowers, their returns are not sufficient to repay their loans. A lack of debt-specific financial literacy also comes with a higher likelihood of being over-indebted. General financial literacy and numeracy do not have consistent significant effects. The same factors that relate to over-indebtedness also relate to which sacrifices borrowers employ as coping strategies for their debt.

The correlations of borrower-level factors with over-indebtedness confirm prior expectations based on theory and on empirical research in non-microfinance environments, for what might be the causes of over-indebtedness. These related factors represent potential causes of over-indebtedness.

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Because measures against over-indebtedness should address the borrowers that are most at risk and would optimally address the causes of the over-indebtedness phenomenon, our findings have implications for the development of solutions against over-indebtedness. They indicate that the spectrum of solutions to over-indebtedness may be broader than expected, suggesting a framework of solutions to over-indebtedness that maps the framework of its causes. Each cause should be matched by a corresponding countermeasure and the policy choice of solutions be guided by the relative importance of the influence factors.

The next section reviews the literature for factors related to over-indebtedness. In the absence of longitudinal studies, these factors represent the best candidates for potential causes of over-indebtedness. Section 3 describes our dataset and econometric approach. Section 4 contains our empirical findings. Concluding remarks and recommendations are provided in Section 5.

2. FACTORS RELATED TO OVER-INDEBTEDNESS

To develop measures against over-indebtedness, it is necessary to identify the most effective levers. The measures should address the borrowers with the highest risk for over-indebtedness; optimally, they would address the drivers of over-indebtedness. For the former we need to know which borrower characteristics are related to over-indebtedness. The latter requires knowledge about the causes of over-indebtedness. However, there are no panel data for dealing with the challenges of endogeneity and causal interactions. The best possible approximation of the causes of over-indebtedness is to depart from theory and the causes of over-indebtedness in other contexts to identify factors related to over-indebtedness in our microfinance case study. A significant relationship in multivariate analysis that confirms theoretical expectations is currently the best available indication that a factor might be a cause of over-indebtedness.

This section is based on a conceptual framework of the causes of over-indebtedness (Schicks, 2013) that suggests a combination of borrower-level, lender-level, and external factors as the drivers of over-indebtedness. In our sample, the external institutional and macroeconomic environment is the same for all borrowers. We lack data on the characteristics of lenders, but lender-specific influences can be controlled for with dummy variables for the respondents' lending institutions. We therefore focus on the relationship of borrower characteristics to over-indebtedness.

Based on the framework of the causes of over-indebtedness, the borrower-level causes of over-indebtedness include socio-demographic factors, economic borrower characteristics, business and loan-related factors, sociological influences, and psychological/cognitive influences (Schicks, 2013). With the exception of psychological and sociological elements that we cannot not measure, [1] this section identifies the corresponding relationships to over-indebtedness according to the microfinance literature and high-income country consumer finance research. It develops four hypotheses for borrower-level factors related to over-indebtedness in microfinance. We empirically test these in Section 4.

There is no consensus on a definition of personal over-indebtedness in the literature. From the viewpoint of risk management, delinquency and default are common indicators for over-indebtedness but they do not represent the customer protection point of view. Following Schicks (2013), this paper therefore uses an over-indebtedness definition that takes the borrowers' experiences with debt into account: "*A microfinance customer is over-indebted if he/she is continuously struggling to meet repayment deadlines and structurally has to make unduly high sacrifices related to his/her loan obligations*".

Customer protection aims to prevent borrowers from suffering from products and suffering is subjective. Therefore a subjective definition is necessary to fully assess the extent of over-indebtedness from a customer protection perspective. Objective indicators such as debt amounts, the debt-to-income ratio, or multiple borrowing, are unable to account for the heterogeneous circumstances of microborrowers, both in terms of their debt capacity and their suffering from different sacrifices (Schicks, in press). Given that over-indebted borrowers often sacrifice significantly to avoid manifest repayment problems, common indicators like delinquency or default represent only late stage consequences of over-indebtedness and recognize only a small part of the over-indebted borrowers in a sample. In our data set, only 7% of borrowers are delinquent but 30% are over-indebted. The share of delinquent borrowers is much higher in the over-indebted sub-group (14%) than among non-over-indebted borrowers (4%), but the two groups (delinquent and over-indebted) are very different in size and in composition.

While developed countries tend to have minimum existence levels in place that prevent excessive levels of sacrificing for debt repayment, minimum existence levels usually do not exist in the regulatory environment of developing country microfinance and many microborrowers would probably live below any objective minimum existence level to start with. In this case, the only ones who can judge how much more sacrifice is acceptable for the purpose of a loan are microborrowers themselves.

However, sacrifices are common among the target group of microfinance. If customer protection were to avoid all sacrificing due to loan repayment, it would probably have to stop microlending altogether, potentially leaving borrowers in an even more difficult situation and depriving them of an important risk management tool. A low level of sacrificing may be quite acceptable even from a customer protection point of view. To address the phenomenon that is of concern from the customer protection perspective, we need to define a threshold for serious and more than transitory sacrificing. We therefore use the binary variable of over-indebtedness according to the above definition but conduct a robustness check with a discrete score of sacrifices.

The empirical research analyzed in this section works with a range of measurements of over-indebtedness, problem debt, repayment problems, or high indebtedness. While the measurement is prone to influence empirical findings, factors that are related to any of these phenomena are also likely candidates for factors related to over-indebtedness according to the above sacrifice-based definition. This section therefore reviews factors that the literature identifies to be related to debt problems, independently of the exact measure of debt problems used in each study. The studies we review also vary according to their geography and cultural context, the type of debt products they include, and the type of borrowers they analyze. This paper is the first to test the transferability of their findings to a microfinance setting.

(a) *Socio-demographic factors*

A borrower's risk of personal over-indebtedness varies with his/her socio-demographic background, for example with age. In the UK and the US, younger age seems to imply higher risk of indebtedness (Bridges & Disney, 2004; Drentea & Lavrakas, 2000; Lea, Webley, & Levine, 1993; Livingstone & Lunt,