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The Financial Crisis and Microfinance

An Empirical Analysis of the Impact of the Global Financial Crisis on the Microfinance Sector in Emerging Markets

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"The current financial crisis makes it very clear that the system that we have isn't really working, and this is the right time for us to undo things and build them in a new way."

— Muhammad Yunus

List of Abbreviations

ALB Average Loan Balance
c.p. ceteris paribus
CDO Collateralized Debt Obligation
CGAP Consultative Group to Assist the Poor
CIB Credit Information Bureau
ECA Eastern Europe & Central Asia
FSS Financial Self-Sufficiency
GDP Gross Domestic Product
GLP Gross Loan Portfolio
GNI Gross National Income
IFC International Finance Cooperation
IMF International Monetary Fund
IPO Initial Public Offering
KfW Kreditanstalt für Wiederaufbau
LAC Latin America & the Caribbean
MBB MicroBanking Bulletin
MENA Middle East & North Africa
MFI Microfinance Institution
MIV Microfinance Investment Vehicle
MIX Microfinance Information Exchange, Inc.
NBFI Non-Bank Financial Institution
NGO Non-Governmental Organisation
NPL Non-Performing Loan
OECD Organisation for Economic Co-operation and Development
OLS Ordinary Least Squares
OSS Operating Self-Sufficiency
PAR Portfolio at Risk
RFI Regulated Financial Institution
ROA Return on Assets
ROE Return on Equity
SME Small and Medium Enterprise
USD U.S. Dollar
WLS Weighted Least Squares
YGP Yield on Gross Portfolio

Contents

I. Introduction

Microfinance, the business of providing financial services to the poor, experienced a tremendous growth and success story in the developing countries during the last decade. With funding flows from nonprofit and commercial sources pouring into the sector, microfinance activity spiked both on outreach and scale measures. Even performance in the industry improved to such an extent that large initial public offerings (IPOs) such as Banco Compartamos' in April 2007 obtained global recognition on capital markets. Microfinance was celebrated as an effective means for economic and social development from the bottom. In 2006, Muhammed Yunus and his Grameen Bank received the Nobel Prize. At the same time more and more academic studies nurtured the belief of microfinance being extraordinarily resilient to macroeconomic shocks such as the East Asian crisis in the late 1990s. This supplemented the finding of inimitable high repayment records and strengthened a global optimism with regard to the vigorous impact microfinance could have, independently of developments in the industrialized world.

In 2007, issues surfaced in the arena of extra-large finance in developed countries followed by an outright crash in 2008. At the same time, microfinance experts and observers caught sight of overheating signs in the branch, which they thought would dampen growth and performance prospects in the near future. In 2008 and especially 2009, microfinance almost globally underwent a severe slowdown, in some cases the past positive trends even reversed.

This thesis attempts to shed light on these developments and reveal potential causes of the sudden interruption to microfinance's success story. The main questions addressed here are:

(1) Can the financial crisis explain the slowdown in growth and performance as well as the deterioration in asset quality in the microfinance branch?

(2) If yes, what are the developments which brought down the paradigm of microfinance's resilience to macroeconomic shocks?

(3) If no, i.e., if the financial crisis cannot be identified as the root cause of the downwards trend in the microfinance sector, to which developments can the reversal of positive advancements be attributed?

In order to discuss these issues, in the first part of the thesis the major characteristics of microfinance in dissociation of traditional finance are being reviewed. These characteristics are broadly seen as the resilience factors contributing to microfinance's outstanding stability even during crisis times. Current literature on microfinance's performance record in a macroeconomic context is presented next. Significant trends the branch underwent in the lead up to the crisis are outlined subsequently, with two objectives: First, they provide hints as to why the microfinance sector has become more vulnerable with regard to macroeconomic stress. Second, they serve as a guideline as to what other developments aside from the financial crisis could possibly have induced the slump in 2008 and 2009. One of these possible reasons for the microfinance downturn which hit the developing world almost contemporaneously with the financial crisis and had a vital ground level effect on the microfinance branch is the food and fuel crisis, sometimes also referred to as inflation crisis. That is why it is discussed before eventually turning to the financial crisis. With respect to the latter, the author highlights distinct transmission channels of the crisis to emerging markets and then discusses the demand and supply side effects of the financial crisis on microfinance. Chapter five describes the empirical data and methodology (mainly panel data econometrics) used to answer the key questions and test the hypotheses of the thesis. Dummy variable regressions are utilized to differentiate between the impact of macroeconomic variables and market level microfinance trends as opposed to individual MFI specific characteristics on performance, portfolio quality and growth measures. Multiple regression analysis helps to identify which MFI features are generally associated with higher profitability, asset quality and growth. In a second set of dummy variable regressions, time-constant MFI and market characteristics are interacted with key macroeconomic variables to investigate which characteristics made MFIs less vulnerable to the financial crisis. Based on this analysis, policy and commercial implications are being derived.

II. Microfinance versus Traditional Finance

Around the globe poor people have the same basic financial needs as anyone else: They seek to smooth their consumption patterns by making deposits, they aim to seize business opportunities by taking out loans, and they look for protection in case of emergencies by entering insurance contracts. However, based on the belief of poor people being "unbankable" - in the sense of unprofitable to service – especially in the developing world the poor have not been granted access to formal financial institutions. Apart from community-based financial arrangements, semi-formal institutions such as non-governmental organizations (NGOs) and formal institutions such as microfinance banks emerged over the past three decades, supplying the unbanked with credit and other services. The underlying motivation is to alleviate poverty by empowering the poor (Brau & Woller, 2004; Dokulilova, Jana & Zedek, 2009; Hamada, 2010; Littlefield & Rosenberg, 2004; Karlan & Morduch, 2010; Kono & Takahashi, 2010; Robinson, 2001). For investors in microfinance, this entails - in contrast to traditional finance - a double bottom line in terms of financial *and* social returns (Grichting, 2007).

In the following part, a more explicit distinction is being drawn between traditional finance and microfinance. In a second part, microfinance's performance in a macroeconomic context will be reviewed.

2.1. Critical Characteristics of Microfinance

2.1.1. Clients

The commonality of microfinance clients in contrast to traditional financial customers is their poverty (even if varying in degree). It is the key reason for deeming them "unbankable" or "high-risk borrowers" for commercial banks: The poor are only rarely captured by national credit reporting bureaus, which results in significant information asymmetry (Goddard, 2009; Jansson, 2001; Karlan & Morduch, 2010). To make up for the lack of local market and borrower specific knowledge, amongst others, MFIs raise lending rates and thereby crowd out better-risk borrowers (adverse selection). Ex post banks cannot control borrowers with respect to their repayment efforts (moral hazard), which substantially raises default risk (Kono & Takahashi, 2010; Dokulilova et al., 2009).

A feature of the clients, on which MFIs capitalize, is their high investment ratio making them less exposed to market risk (Krauss & Walter, 2008). Also, MFI clients demonstrate more resilience in times of economic distress since they are more capable to adapt, show little integration into the formal economy and often purchase and sell domestically-fabricated daily products, which are especially demanded during economic downturns. This makes MFI clients less exposed to cyclical demand patterns and could introduce a countercyclical impact on microentrepreneurs (Patten, Rosengard & Johnston, 2001; Krauss &Walter; Fonseca, 2004). In addition, MFIs' clients appreciate access to financial services more than traditional bank customers. This induces them to make greater efforts to sustain it (Krauss & Walter; Patten et al.; Robinson, 2010).

Another critical aspect about the typical client is that MFIs have predominantly targeted women. This practice is rooted in the assumption that women, in contrast to men, use loans more often for productive purposes rather than consumption, which is raising repayment chances (Brau & Woller, 2004). Other explanations revolve around women's enhanced lack of mobility, economic and financial integration (Emran, Moshed and Stiglitz, 2007, as cited in Karlan & Morduch; Morduch, 1999b).

Microfinance Information Exchange, inc. (MIX[1]) Market data for 2004 to 2006 seems to confirm these considerations: The median MFI targeting the low-end segment, i.e. the average loan balance per borrower over gross national income (GNI) per capita is much lower, features significantly lower Portfolio at Risk (PAR) 30, PAR 90, write-off ratios, and loan loss rates compared to the median MFI targeting the broad, high-end or small and medium enterprise (SME) segment (MIX, 2008). Further support comes from Cull, Demigurc-Kunt and Morduch (2007), who reveal that financially self-sufficient individual lenders target poorer people and more women. Also, McGuire and Conroy (1998, as cited in Krauss & Walter) as well as Rodriguez (2002, as cited in Krauss & Walter) demonstrate that MFIs focusing on the poor resp. low-income women fared better during the Asian crisis resp. the Bolivian crisis.

2.1.2. Products and Services

Microfinance can be seen as the advancement of microcredit for small-scale businesses, which remains the predominant product (Brau & Woller, 2004; Kono & Takahashi, 2010). The small unit size of all financial services offered indeed raises transaction costs but it also decreases risk due to the fragmented structure of the (loan) portfolio. The latter though is often geographically concentrated (Jansson, 2001). Hollis and Sweetman (2004) discover just this small unit size of services to be a possible supporting factor for the increased sustainability of MFIs during crises. Other distinctive credit features in comparison to commercial banks are that MFIs offer their loans at a higher interest rate and with a lower maturity. The shorter loan maturity gives

[1] MIX is a nonprofit organization dedicated to provide business information on the microfinance sector.

more flexibility to react to floating borrowing rates and thereby decreases exposure to market risk (Krauss & Walter, 2008).

With respect to the product portfolio, the microfinance sector today delivers similar products and services as the formal financial system. Credit products include both business loans and enterprise equity as well as consumption/emergency loans with the latter being mostly supplied by local moneylenders. Loans are usually expected to be invested for income-generating entrepreneurial activities (Brau & Woller). Savings services comprise forced savings serving as cash collateral and voluntary or flexible savings. Transfer services offer the possibility to transmit money to relatives. Microinsurance services, e.g. health, life, cattle or crop insurance, are also part of the product portfolio of some MFIs (Kono & Takahashi; Brau & Woller). Nonfinancial services such as operations management and education on business, health, legal rights and gender roles, which are mostly promoted by NGOs, complement these financial services (Morduch, 1999b). Marconi and Mosley (2006) show that organizations offering a multitude of products perform better during economic stress times. And while an extension of the product line may indeed reduce firm-specific risk, dependence on fee-based products (e.g. mortgage origination, credit card business) characterized by higher volatility and fixed costs raises operating leverage. This in turn involves ceteris paribus (c.p.) more earnings variability and increases systemic risk. Commercial banks are assumed to have higher operating leverage exactly because they depend on such products (Krauss & Walter).

2.1.3. Contractual Mechanisms

Peculiarities about microloan contracts in comparison with traditional ones involve the difficulty in assessing the economic conditions and the lack of equity invested in the microentrepreneurs' projects. However, the most striking difference between traditional banking and microfinance lending lies in collateral. In traditional finance collateral is vital, not only because of its economic value but also in a psychological sense. In microfinance though, clients do not own sufficient assets to offer any physical collateral (Goddard, 2009). This seems to give traditional banking an advantage with respect to portfolio quality. But microfinance developed other ways to mitigate informational asymmetries.

One key mechanism is social collateral in the form of group lending, which is based on reputational effects and grounded in the principal of joint liability. Here, neighbours peer select each other thereby tackling the issue of adverse selection, and then take loans under the premise of collective responsibility for the repayment of the total loan amount. The ability to monitor each other dampens the problem of moral hazard (Brau

& Woller, 2004; Morduch, 1999b). While it seems to be an important success factor empirical evidence is mixed about its effects on informational asymmetries (Krauss & Walter, 2008; Kono & Takahashi, 2010; Brau & Woller). Individual lending is more frequently employed. In Microfinance, the latter approach is accompanied by direct monitoring, the use of refinancing threats or the following methods (Armendáriz & Morduch, 2000, as cited in Brau & Woller; Cull et al., 2007).

The method of dynamic incentives refers to the practice of lending in rising loan sizes over time ("progressive lending"; Hamada, 2010, p. 3). This brings the advantage of separating out undisciplined borrowers relatively early in the business relationship. However, increased insecurity on the client side about the availability of future lending, for example due to mass defaults of other MFI clients, can result in contagion (Krauss & Walter). Regular repayments with small amounts and frequent installments, on a weekly or semi-weekly basis, which begin right after disbursement, is another technique. It helps the lender monitor his portfolio quality. In a traditional loan contract, however, the credit is paid back with interest at the end of the term (Morduch, 1999b). These practices allowing for a superior screening in combination with very tight relationship management and knowledge of the local markets are seen as keys to superior performance relative to the traditional banking system in times of economic stress (Krauss & Walter; Patten et al., 2001; Hollis & Sweetman, 2004). However, they also must be considered a key reason for high operating expenses (Jansson & Taborga, 2000, as cited in Jansson, 2001).

2.1.4. Financial and Ownership Structure

Basically, we can differentiate between developmental or non-commercial and commercial funding sources, with the latter being divided into foreign and local financing. Non-commercial funding includes any financing from governments [2], national, bilateral or multinational (development) agencies and banks as well as foundations, (international) NGOs and certain kinds of private social investment vehicles such as peer-to-peer lending initiatives (MicroRate, 2008, 2009; Reille & Forster, 2008). On the commercial side of funding, local financing sources include several forms of deposits, local bank lending and local capital markets. Foreign funding sources comprise public, individual and institutional financing sources. Institutional sources include international (investment) banks, insurance companies, pension funds and private equity investors. The second pillar of foreign commercial funding is mainly about individuals investing through Microfinance Investment Vehicles (MIVs) and other private investment vehicles such as online investment organizations. IFIs and

[2] Financing from governments can be in the form of foreign aid or via government (donor) agencies.

DFIs provide quasi-commercial funding and constitute the public foreign funding source (Reille & Forster).

Generally, one can assert that while commercial banks are most often publicly traded banks with a short-term focused, market-driven investor base, almost all MFIs are privately-held with their shareholders having a long-term and strategic interest of more social than commercial nature (Krauss & Walter, 2008; Jansson, 2001). Especially MFIs targeting the low-end segment of the microfinance market heavily rely on DFI and government funding constituting roughly a quarter of their liabilities with the rest predominantly stemming from grants and donations (MIX, 2010). And while dominant during early microfinance times, a great part of MFIs are still highly dependent on subsidisation from governments and other donors due to high transaction and information costs (von Stauffenberg, von Stauffenberg, Brown & Effio, 2009). According to the Consultative Group to Assist the Poor (CGAP) (2008a, 2009a), donations amount to around 50% of total funding committed.

This funding structure implies that a significant part of MFIs cannot be considered sustainable. In 1999, out of all surveyed MFIs 57% and out of the group of MFIs targeting the low-end segment[3] only 44% were financially self-sufficient (Churchill, 2000). Latest MIX Market figures for 2008 indicate an upwards trend with 61% resp. 55%[4] being financially self-sustainable (MIX, 2009). The limitations associated with the MIX data are discussed in the empirical part of the thesis. A word of caution is indicated concerning the reporting of profits. Even celebrated institutions such as Grameen Bank are shown to be falsifying financial statements so as to report modest profits (Morduch, 1999a).

These considerations serve as a background for the discussion about the advantages and disadvantages of this funding structure. A majority sees MFIs' strong ownership structure and donor-based funding as success factors since donations stand for continuous funding. This greatly reduces refinancing problems commercial banks have to face when local market liquidity dries up and highly sensitive international portfolio investors quickly reduce their stakes during crises (Fonseca, 2004; Krauss & Walter). However, Jansson alleges that profit focused shareholders of traditional institutions have more fresh capital in stock for their investments during crises (compare CSFI, 2009, p. 20).

[3] "Low-end segment" refers to an average loan balance below $150 or loans as a percentage of GNP per capita below 20% (Churchill, 2000).

[4] Out of the 425 low-end segment targeting MFIs 78 conveyed insufficient information to calculate this adjusted ratio.

With respect to leverage, the funding structure of MFIs definitely bears an advantage: While the median MFI has a debt-to-capital ratio of around 2.6 in 2007 according to Krauss and Walter, the average commercial bank in the U.S. has one of 7.5. However, the amount of leverage varies by MFI type and target market: MFIs targeting the low end segment as well as NGOs compared to MFI banks have a much higher capital/asset ratio (MIX, 2009). Regulated MFIs are similarly leveraged as commercial banks (Krauss & Walter; compare MIX, 2009). Krauss and Walter assert that better capitalized institutions have less exposure to systemic risk. Hartarska and Nadolnyak (2007) and Hollis and Sweetman (2004) both find that they are more operationally sustainable.

2.1.5. Regulation

In most countries, MFIs have not been included in normal banking regulation, but governments mostly follow a "laissez-faire approach" (Arun, 2005, p. 353) negatively affecting the ability of MFIs to take on deposits from the public (Hartarska & Nadolnyak, 2007; CSFI, 2009). However, regulation in a significant part of the developing world is advancing fuelled by either the promotion of microfinance networks or the increasing importance of the sector in emerging markets' financial systems (Hartarska & Nadolnyak). Still today, according to CGAP (2009c), MFIs remain unregulated in 48% of 139 countries. In more than 40% of developing countries MFIs fall under the supervision of the principal financial authority, in 8% of countries there is a separate legal entity in charge of supervision. To compare, commercial banks are regulated in every country surveyed.

The development has resulted in a great variety of regulatory policy approaches (compare for example CGAP, 2008b; Hartarska & Nadolnyak). In contrast to formal financial institutions, which are covered by both entry and prudential regulation, different MFIs are regulated or unregulated within the same country, and in some countries they are given a choice between the two. While most MFIs are covered by some type of non-prudential regulation such as entry regulation, consumer protection or fraud prevention, prudential regulation is less widespread, but it is gaining momentum with the microfinance sector heavily broaching the issue of savings accounts for the poor (CGAP, 2003; Hartarska & Nadolnyak; Cull et al., 2009b).

While the initial and in some cases enduring freedom from regulatory structures can be seen as a factor contributing to the rapid rise of microfinance, the lack of adequate regulation and legal uncertainty prevailing in many developing countries today is seen as constraining operating freedoms and a sound development of the microfinance sector in general (Christen & Rosenberg, 2000, as cited in Hartarska & Nadolnyak). The same effects are brought by political interference, e.g. in the shape of directed lending, loan forgiveness, interest rate caps or subsidized competition (CSFI, 2008). For example, Marconi and Mosley (2006) make the point that debt rescheduling by the government during the Latin American crisis in the late 1990s undermined trust in the microfinance sector.

2.2. Performance in the Macroeconomic Context

Based on these differentiating characteristics, it is now time to ask in what ways microfinance behaves in a macroeconomic context. While the formal financial system exhibits procyclicality (compare e.g. Borio, Furfine & Lowe, 2001), Ahlin and Lin (2006) as well as Ahlin, Lin and Maio (2010) present three different possibilities regarding the link between macroeconomic and MFI performance. First, microfinance can be procyclical in a way that a growing economy does not only raise demand, but also creates new business opportunities and boosts investment so that micro-entrepreneurship is flourishing. Second, the MFI sector could remain mostly unaffected from economic turmoil because the standard MFI client's operations are independent from macroeconomic movements or performance is largely attributable to skill or just luck. Finally, there is a chance that microfinance behaves in an anticyclical way due to its dependence on a vibrant informal sector.

To begin with, Ahlin and Lin as well as Ahlin et al. detect a significant and positive relationship between macroeconomic growth and financial sustainability whereby growth effectively helps MFIs to break even. This finding is bolstered by Henley (2005 as cited in Ahlin & Lin, 2009 as cited in Ahlin et al.), who identifies solid macroeconomic growth as a success factor for Indonesian microfinance during the past century. Further evidence comes from Müller and Uhde (2009), who argue that asset quality positively depends on the economic development. Concerning inflation, they identify a negative relationship with MFI performance because an eventual increase in nominal interest rates to depositors and creditors results in both higher refunding costs and worse loan repayment records. This relationship though is widely under debate: While Ahlin and Lin find a negative impact of inflation on MFI performance - at least when inflation becomes very high and unforeseeable –, Ahlin et al. put this early evidence into perspective and allege that MFIs contend with inflation financially well by raising interest rates. However, they find a negative impact on MFI growth. Robinson (2001) identifies hyperinflation as the only macroeconomic determinant to inhibit microfinance. What is more, remittances are found to stand in a positive relationship with self-sufficiency (Ahlin et al.). Marconi and Mosley (2006) bolster these allegations of a mostly procyclical movement of microfinance with their study on microfinance performance during the Bolivian crisis starting 1998.