



# The Vulnerability of Microfinance to Financial Turmoil – Evidence from the Global Financial Crisis

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**Summary.** — Has microfinance become crisis-prone like other sources of finance? This paper provides empirical evidence on credit growth patterns of microfinance institutions in the early 2000s. Results suggest that microfinance has become vulnerable to financial turmoil. In the global financial crisis credit growth dropped sharply. Moreover, the crisis impact was more severe when institutions had been active in tapping domestic and international financial markets for funds and had operated in countries experiencing a severe post-crisis recession. Finally we find that microcredit adopted the cyclical characteristics of credit growth in the traditional banking sector, with credit booms followed by credit busts.

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## 1. INTRODUCTION

In emerging market financial crises of the 1990s, microcredit, i.e., the provision of loans to micro and small businesses, gained the reputation of being largely immune to fluctuations in international financial markets.<sup>1</sup> Most importantly, Krauss and Walter (2009) provide cross-country evidence for the period of 1998–2006 suggesting that MFI credit growth does not show a significant correlation with the development of global financial market indicators, such as the S&P 500 index or the MSCI World Equity Index.<sup>2</sup> Conservative credit technologies, a high degree of flexibility among microenterprises in employing assets productively, and a low level of integration of microfinance institutions (MFIs) in the domestic and international financial system seemed to buffer microfinance from turmoil in traditional financial sectors and to ensure—compared to traditional banks—a smooth performance of MFIs, including credit growth. As a result, rapid MFI credit growth in the pre-crisis period has been largely interpreted as a catching-up phenomenon fostering financial inclusion without raising serious stability concerns (Gonzalez, 2010).

However, early anecdotal evidence from practitioners (Centre for the Study of Financial Innovation, 2008; Littlefield & Kneiding, 2009) indicated that the global financial crisis had put the resilience of microfinance to financial turmoil to a severe test. Explanations refer to

- a rising level of integration into mainstream finance, as MFIs increasingly tapped domestic and international capital markets in the pre-crisis period for funds to be on-lent to final borrowers (El-Zoghbi, Gahwiler, & Lauer, 2011; Gaul, 2010);
- a less rigorous application of the conservative credit technologies (Chen, Rasmussen, & Reille, 2010), also reflecting rising competition among MFIs (Assefa, Hermes, & Meesters, 2013);
- a large pool of inexperienced loan officers—hired to accommodate the pre-crisis credit boom (Zeitinger, 2010)—issuing loans in an environment characterized by optimism and the expectation of strong growth.<sup>3</sup> When clients' financial and macroeconomic conditions deteriorated, substantial problems of over-indebtedness emerged (Kappel, Krauss, & Lontzek, 2011);

- the extraordinary depth of the recession following the global financial crisis which even the most flexible microentrepreneur was unable to escape, leading to a drop in credit demand.

Anecdotal evidence has been supported by econometric analysis. Di Bella (2011) finds that by including the crisis years 2008 and 2009 MFI performance is significantly correlated with international financial conditions, contradicting earlier evidence. Gonzalez (2011) presents evidence suggesting that the rise in MFI vulnerability largely reflects the experience of those MFIs which have turned away from the original target group of (informal) microbusinesses and are increasingly turning to (consumer) lending to salaried workers.

The new evidence has triggered a debate about financial stability aspects of microfinance (see e.g., Basel Committee on Banking Supervision, 2010; Dittus & Klein, 2011). This paper contributes to this debate by analyzing the impact of the financial crisis on MFI credit growth, i.e., the variable that serves as a key indicator of financial vulnerability in the traditional banking sector literature (Schularick & Taylor, 2012; Čihák, Demirgüç-Kunt, Feyen, & Levine, 2012). Based on 2000–09 credit growth data from 722 MFIs operating in 74 developing- and emerging market countries, we run a panel regression, testing whether MFI credit growth was negatively affected by the crisis, controlling for a range of MFI-level, macroeconomic and structural factors that determine credit growth in normal times. Moreover, we analyze MFI-level, macroeconomic and structural crisis transmission channels by identifying those variables that are significantly linked to MFI credit

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Table 1a. Panel sample distribution—Number of observations (baseline regression)

	SSA	EAP	ECA	LAC	SA	Total
Bank	56	20	34	121	10	241
Credit Union	155	9	137	125	11	437
NBFI	180	87	319	324	148	1,058
NGO	200	177	32	559	118	1,086
Total	591	293	522	1,129	287	2,822

Table 1b. Cross-section distribution—Number of observations (baseline regression)

	SSA	EAP	ECA	LAC	SA	Total
Bank	6	3	6	15	2	32
Credit Union	15	2	15	24	2	58
NBFI	21	14	59	62	23	179
NGO	25	29	4	90	20	168
Total	67	48	84	191	47	437

growth in the crisis period. Finally, we run a cross-section analysis based on data for 437 MFIs operating in 49 countries in order to test whether the size of the credit boom in the pre-crisis period is a significant predictor of the depth of the credit bust in the crisis years. The test is motivated by the fact that credit boom–bust patterns have been a key characteristic of traditional banking in emerging market crises of the past (Mendoza & Terrones, 2008; Tornell & Westermann, 2002) as well as for the most recent global financial crisis (Aisen & Franken, 2010; Vogel & Winkler, 2012).

We find that MFI credit growth dropped sharply in the crisis years 2008 and 2009, controlling for other variables. Moreover, our results provide support for some of the anecdotal evidence presented by practitioners to explain the vulnerability of microcredit growth after the Lehman shock. In particular, the drop in credit growth was more severe for MFIs that had been recording strong growth in funding from domestic and international capital markets in the pre-crisis period and had operated in countries experiencing a severe post-crisis recession. Higher inflation, stronger inflows of remittances, and a more restrictive regime with regard to international trade and capital flows are also negatively linked to microcredit growth in the crisis. We also find a non-linear relationship between MFI size and the decline in credit growth in the crisis period, i.e., the decline was most severe for institutions with a size that corresponds to the mean of the sample. Given that borrower growth rises with MFI size before tapering off, this result provides indirect support to the view that the drop in credit growth during the crisis also reflects the overstretched capacities of fast-growing MFIs in the pre-crisis period.

The crisis was felt in all emerging market regions with the exception of South Asia. The latter result is in line with evidence compiled for the traditional banking sector showing that credit growth in Asia was largely unaffected in the crisis period (Goldstein & Xie, 2009). Moreover, there is little difference in credit growth patterns of MFIs operating as banks, non-bank financial intermediaries (NBFIs), and non-governmental organizations (NGOs). Only credit unions stand out as being significantly less affected by the crisis. This suggests that the vulnerability of microcredit to financial turmoil does not reflect the commercialization of microfinance (Christen & Drake, 2002) that has taken place since the mid-1990s. Finally, results of the cross-section analysis robustly show that the decline in credit growth in the crisis was more pronounced for MFIs with stronger credit growth in the pre-crisis period.

This indicates that microfinance has become vulnerable to financial turmoil by adopting the cyclical characteristics of the traditional banking sector, with credit booms followed by credit busts.<sup>4</sup>

While our paper contributes to the literature on the impact of global financial market developments on microcredit, it is also related to studies that discuss the role of macroeconomic and structural country variables in explaining cross-MFI performance over time (see e.g., Ahlin, Lin, & Maio, 2011).<sup>5</sup> Most importantly, the econometric approach (in its panel specification) and the control variables chosen are similar. The difference is in the focus: the analysis in Ahlin *et al.* (2011) is largely motivated by the long-standing debate about the factors determining MFI sustainability and outreach (i.e., borrower growth (breadth of outreach) and loan size growth (depth of outreach)). It shows that, in addition to MFI-level factors, macroeconomic and structural country characteristics play a key role in explaining cross-MFI performance. By contrast, this paper aims at answering the question whether MFI credit growth is vulnerable to financial turmoil. Thus, we focus on the impact of the global financial crisis on portfolio volume growth, controlling for MFI-level, and macroeconomic and structural factors.<sup>6</sup>

Our paper is structured as follows. After this introduction we present the data and the methodology of our analysis (Section 2). Section 3 contains our main results and is followed by some robustness checks (Section 4). The paper ends with a summary and conclusions.

## 2. DATA AND METHODOLOGY

We analyze the patterns of real annual credit growth of MFIs reporting to Mix Market<sup>7</sup> in the first decade of the 2000s.<sup>8</sup> Our baseline panel estimates are based on annual data for 722 MFIs in 74 countries over the period of 2000–09 (Table 1a).<sup>9</sup> The panel is unbalanced, as for 2000 our sample includes only 97 MFIs. The sample size increases to about 390 MFIs for 2004 before reaching more than 600 MFIs in the period of 2006–08. In 2009, the last year of our analysis, the panel sample includes 569 MFIs with a total loan portfolio of about USD 29 billion serving more than 53 million borrowers. Thus, our sample represents 40% of the loan portfolio and 55% of the total number of borrowers for all MFIs reporting to Mix Market. The cross-section analysis is based on the annual data for 437 MFIs in 49 countries (Table 1b).<sup>10</sup> In terms of regions there

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