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From Boom to Bust: How different has microfinance been from traditional banking?

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Abstract

This paper presents an in-depth analysis of developments in the microfinance sector before and after the Lehman Brothers collapse in 2008 by comparing them with developments in traditional banking sectors of emerging market economies and developing countries. The findings indicate that microfinance has been part of the same credit boom observed in the traditional banking sector. Moreover, as in the traditional banking sector, the boom was fostered by substantial inflows of foreign capital. This raises the question whether the crisis resilience the microfinance sector has shown in the past remains a characterizing feature of microfinance or whether the same risk factors associated with excessive credit growth lead – as in the traditional banking sector – to greater vulnerability.

The findings indicate that microfinance markets with strong capital inflows, high credit growth rates and rapidly increasing competition experienced a substantial decrease in credit growth and deterioration of portfolio quality in the post-Lehman period. This is in line with the evidence found for the traditional banking sector in emerging markets and developing countries. The paper concludes that by becoming part of the global financial system, microfinance has lost one of the characteristics which distinguish it from traditional banking, namely its higher resilience towards crises in domestic and global financial markets.

Keywords: Microfinance, crisis resilience, credit boom, financial crisis

JEL classification: E44, G01, G21

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1 INTRODUCTION

Microfinance is banking for the poor. Mission, target group, and the applied credit technologies are features clearly distinguishing microfinance from the traditional banking sector. Moreover, the industry seemed to be less exposed to financial turmoil. Evidence from financial crises episodes in Asia and Latin America in the 1990s suggests that loan portfolio growth and quality of microfinance institutions were substantially less affected by financial turmoil than portfolio growth and quality in the traditional banking sector.

This paper presents an in-depth analysis of developments in the microfinance sector before and after the Lehman collapse by comparing them with developments in traditional banking sectors of developing countries (DCs) and emerging markets economies (EMEs). The findings suggest that in the pre-crisis years microfinance was characterized by features similar to those prevailing in traditional banking. Most importantly, the microfinance sector joined the overall credit boom in several EMEs and DCs. Like in the traditional banking sector, this boom was fostered by substantial capital inflows. Credit booms funded by strong capital inflows are good predictors of financial turmoil. This raises the question whether the crisis resilience observed in previous years has remained a characterizing feature of the microfinance industry in the global financial crisis.

Our findings indicate that the current financial crisis has had a substantial impact on the microfinance sector. In particular, microfinance markets with strong capital inflows, high credit growth rates and rising levels of competition in the pre-crisis period have been affected. Moreover, like in the traditional banking sector, credit growth has dropped significantly and portfolio quality has deteriorated markedly in the post-*Lehman* period. Thus, while microfinance and traditional banking still exhibit structural differences, the evidence suggests that they exhibit increasingly stronger conjunctural similarities.

The paper is structured as follows. Section two reviews the literature on the performance of the microfinance sector in previous DC and EME financial crises. Section three presents basic data on capital flows and credit growth in the microfinance and the traditional banking sector before and after the *Lehman* collapse. Section four analyzes the impact of rapid credit growth on financial stability in both sectors and section five provides a summary and conclusion.

2 THE PERFORMANCE OF MICROLOAN PORTFOLIOS IN TIMES OF FINANCIAL CRISES – A REVIEW OF THE LITERATURE

2.1 Microfinance, traditional banking and financial turbulences – evidence from previous crises in emerging markets

Microfinance has earned the reputation of being fairly immune to financial crises on the basis of case study results and cross-country evidence. Examining the correlation of microfinance and traditional banking with international and domestic market performance measures, the latter find that the microfinance sector shows almost no correlation with developments in global capital markets whereas the traditional banking sector does (Krauss and Walter, 2008). This suggests that microfinance is more insulated from the macroeconomic and financial environment than traditional banking. Analyses by

Ahlin and Lin (2006) and Gonzalez (2007) also indicate that fluctuations in domestic GDP have only a limited impact on the quality of microloan portfolios.

Turning to the evidence from selected case studies, McGuire and Conroy (1998) analyze the performance of the microfinance sector in Indonesia during the East Asian crisis. They find that during the crisis the strategic business unit (SBU) "microbanking" of Bank Rakyat Indonesia (BRI)[1] recorded only a slight increase of non-performing loans (NPL), expressed as a share of total loans, while the NPL ratio of other SBUs rose substantially. Moreover, Patten, Rosengard and Johnston (2001) report that the loan portfolio of BRI's microbanking unit did not fall during the crisis and that growth resumed as early as 1999, with the portfolio increasing around 34 percent in 2000.

The Latin American experience also points to smoother credit growth and higher portfolio quality in the microfinance sector compared to the traditional banking sector in crises times. For example in the Ecuadorian banking crisis of 1999, Banco Solidario, a bank providing microenterprise loans and traditional loans, recorded a stable portfolio quality combined with a substantial increase in net profits on its microenterprise loans (Arora and Harper 2005). In Bolivia, the 1999 financial crisis led to a substantial decline in traditional bank portfolios which lasted until 2003. By contrast, compared to the traditional bank portfolio the aggregate microfinance portfolio growth rates in Bolivia decreased in 1999 and 2000 but recovered quickly from the crisis and recorded a positive growth rate again in 2001. Portfolio quality of MFIs deteriorated as well but showed much earlier signs of improvement than portfolio quality of traditional banks (Benoit-Calderón, 2006; Marcony and Mosley, 2005).

Overall the evidence suggests that while not being immune to episodes of financial turmoil the microfinance industry has performed significantly better in terms of loan portfolio growth and loan portfolio quality than the traditional banking sector.

2.2 Crisis-mitigating characteristics of microfinance institutions and borrowers

Several features of microfinance suggest that its superior performance in times of crises compared to that of traditional banks might reflect structural characteristics of the industry.

Lending technology

Microfinance makes use of different lending technologies than the traditional banking sector, namely the group lending and the unconventional individual lending technology (Armendáriz and Murdoch, 2005). A common characteristic of these technologies is that they are rather conservative. For example, the unconventional individual lending technology assesses the client's debt capacity on the basis of the current cash flow only, i.e. it neglects any potential revenues the client might have from the "project" being financed. Moreover, it includes a socio-economic analysis of the household exploiting the insight that "troubled homes often become troubled borrowers" (Churchill, 1999). Finally, the credit process is loan officer centric, making close ties to and knowledge of borrowers and local markets. The group lending technology relies on the screening, monitoring and repayment incentives of the joint liability group members when taking a loan (Lehner, 2009).

[1] BRI is one of the three state-owned commercial banks in Indonesia with four strategic business units. Besides the business unit- Microbanking there are also the Retail Banking-, Corporate- and Treasury and Investment business units (Patten and Rosengard and Johnston, 2001).

Ownership

Microfinance institutions, including those operating in the form of non-bank financial institutions and banks with a for-profit objective, have, in general, owners and shareholders with a more "long term strategic interest and are less driven by market forces," (Krauss and Walter, 2006: 18). This suggests that MFIs are less likely to engage in risky activities due to short-term profit maximization.

The loan product

Microfinance is short-term lending with weekly or monthly installments. This allows for a timely control of the portfolio's quality and for substantial flexibility to adjust lending conditions in times of crisis. Moreover, maturity transformation, a key source of financial instability in traditional banking (Diamond and Dybvig, 1983), basically does not exist or – due to long-term funds provided by donors and international financial institutions – has the opposite sign compared to traditional banking: long-term funds are transformed into short-term loans. Finally, the large number and small size of microloans leads to a high degree of granularity and diversification in the MFIs portfolios (Krauss and Walter, 2008), supporting their stability in crises times.

The clients

Microbusinesses have a loan demand that is mainly related to financing of working capital. Investments in fixed assets such as machinery or real estate are rare as activities do not rely on a substantial capital input (Karland and Murdoch, 2010). This has the advantage that MFI clients have a high degree of flexibility to divert their activities when business slows down. Finally, microfinance clients are usually active in the local trade or service sector. These sectors are less exposed to fluctuations in the global or national economy compared to industry and export oriented companies. As a result, the revenues of microfinance clients are more robust to fluctuations in the economic cycle.

Financial market environment

The main alternative available to microclients' for obtaining a loan is the informal financial sector, which is characterized by high interest rates and a lower degree of reliability compared to MFIs. As a consequence, micro-entrepreneurs have a strong incentive to serve and repay their loans in order to sustain a good relationship with the MFI and and so to obtain future loans (Patten, Rosengard and Johnston, 2001; Chen, Rasmussen and Reille, 2010). Thus, even in a financial crisis, clients will do their utmost to avoid arrears, stabilizing MFI performance indicators.

3 THE 2000s – HOW MICROFINANCE BECAME PART OF THE GLOBAL CREDIT CYCLE

3.1 On the move – microfinance at the beginning of the 21st century

Modern microfinance emerged in the 1970s pioneered by – among others – the Grameen and SEWA banks in Asia and partners of ACCION in Latin America (Helms, 2007). In more than thirty years it gained a reputation for being one of the most effective instruments in fighting poverty. Moreover, low

default rates and an increasing number of sustainable MFIs, showing a positive return to equity, demonstrate that banking with the poor can be a successful business. Finally, most studies suggest that despite strong growth in the past, demand for microfinance services continues to exceed supply by a large amount. Estimates indicate that in many DCs and EMEs 40 to 80 percent of the population lack access to formal financial sector services (Cull et al., 2008; DiLeo and FitzHerbert, 2007).

The combination of social and economic benefits and the large unmet demand for microfinance attracted new investors and encouraged substantial commercial involvement in the industry. As a result, sources and volumes of funds available to MFIs have increased substantially. While in the past MFIs had to rely almost exclusively on socially-oriented non-profit donors and international financial institutions, it has recently been able to tap broader sources of funds, including funds provided by Microfinance Investment Vehicels (MIVs) completely funded by private investors, mainly from mature economies. In addition, the transformation of many NGOs into microfinance banks has led to a strong increase in client deposits and refinancing lines extended under market conditions. Access to global financial markets, local deposits and domestic credit lines has fundamentally changed the funding situation of the microfinance sector (Krauss and Walter, 2007; DiLeo and FitzHerbert, 2007) allowing for strong loan portfolio growth in many countries. Similar developments have been taking place in the traditional banking sectors of many EMEs and DCs (Deutsche Bundesbank, 2008). Trends changed only in the aftermath of the Lehman collapse, when credit growth rates and capital inflows slowed substantially in both sectors.

3.2 Credit growth in the pre- and post-Lehman period

The years preceding the global financial crisis were characterized by strong credit growth in the microfinance and banking sectors in many EMEs and DCs.

From 2004 to 2007, average annual credit growth was 36 percent in the microfinance sector and 27 percent in the traditional banking sector in 47 EMEs and DCs. Moreover, the pattern of growth was similar, as in both sectors growth peaked in 2007 after a slight decline in 2005 (Figure 1).[2]

[2] The analysis is based on data from The MiX database and the IMF's International Financial Statistics (IFS), line 22d. The microfinance data of 813 MFI have been aggregated at country level. MFIs with missing values in the period 2003 to 2007 are excluded from the sample, except for MFIs which were founded during that period. The sample only includes countries with more than 4 MFIs reporting to The MiX in each observed year. Our analysis is based on 47 EMEs and DCs from 2003 to 2007. As data for 2008 and 2009 is still limited, the number of countries in our sample varies in these two years. For the traditional banking sector we convert annual data on country level from national currency into US Dollar (see Appendix).

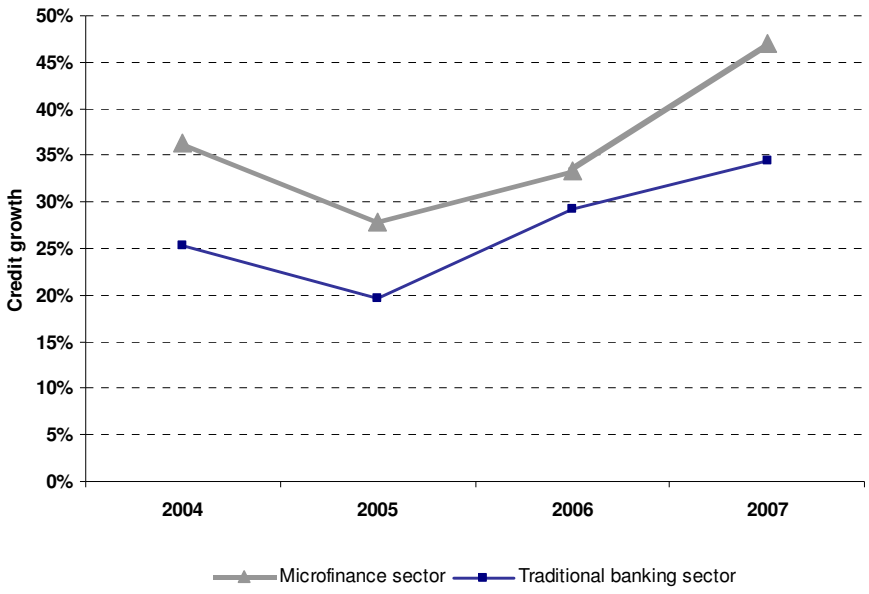


Figure 1: Credit growth in the microfinance and traditional banking sector in 47 EMEs and DCs

Source: The MiX and IMF – own compilation

Taking a regional perspective, MENA (Middle East and North Africa)[3] and Eastern Europe and Central Asia (ECA) record the highest credit growth rates followed by Africa, Latin America and the Caribbean (LAC) and South Asia.

Similar evidence can be found on the level of individual countries: In 23 out of 47 countries the correlation coefficient for credit growth in the microfinance and the traditional banking sectors exceeds 0.6 for the years 2004 – 2007 (Figure 3). Thus, lending by MFIs advanced in line with lending in the traditional banking sector. In only eight countries was the correlation coefficient negative, indicating that the MFI and traditional banking sector exhibited opposing trends of growth.

Correlation-coefficient	> 0.9	0.6 ≥ 0.9	0.3 ≥ 0.59	0 ≥ 0.29	> 0
	Costa Rica	Philippines	Kazakhstan	Senegal	Albania
	Bosnia-Herzegovina	Nigeria	Colombia	Egypt	Ethiopia
	Vietnam	Madagascar	Bolivia	Dom. Rep.	Nicaragua
	Paraguay	Kyrgyzstan	Bulgaria	Azerbaijan	Macedonia
	Tajikistan	Kenya	Morocco	Guatemala	El Salvador
	Haiti	Uganda	Romania	Mali	Sri Lanka

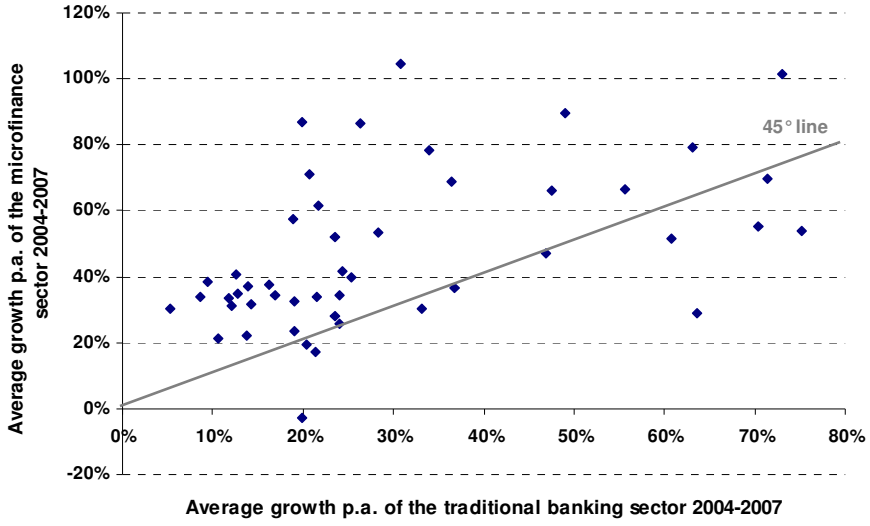
[3] However, is has to be stressed that the MENA region in our sample contains merely three countries (Morocco, Egypt, Jordan).

Cambodia	Nepal	Pakistan	Georgia	Mexico
Armenia	Peru	Jordan		Ghana
Cameroon	India	Benin		
Bangladesh	Mozambique			
Indonesia	Honduras			
	Tanzania			

Figure 3: Correlation coefficient of credit growth in the microfinance and the traditional banking sector in selected countries, 2004 – 2007

Source: The MiX and IMF – own compilation

In most countries, credit growth in the microfinance sector was higher than in the traditional banking sector (Figure 4). While microfinance growth rates above 30 percent p.a. were recorded in 38 countries, there were only 16 traditional banking sectors with growth rates above 30 percent, most of them in ECA. Also in the microfinance sector growth was particularly strong in ECA, reflecting the fact that many ECA microfinance sectors are comparatively young. The average age of all MFIs in the ECA region was about seven years in 2007. By contrast, the average age of MFIs in East Asia and Pacific was 16 and in LAC 15 years. However, there are countries with mature microfinance markets, like Peru or Vietnam, that have been recording high growth rates as well.



Correlation Coefficient = .495 *p < .01* *N = 47*

Figure 4: Credit growth 2004-2007[4]: Microfinance and traditional banking sector in 47 developing- and emerging countries

Source: The MiX and IMF – own compilation

[4] Microfinance sector: geometrical mean of growth rates from 2004 to 2007 for each country with at least four reporting MFIs. Traditional banking sector: geometrical mean of the country growth rates from 2004 to 2007.

MFIs have different legal forms and can operate as banks, credit unions/cooperatives, non-bank financial institutions, NGOs and rural banks. Banks are by far the largest institutions while rural banks are very small (Figure 5). Despite these significant differences, they recorded similar growth rates in the pre-crisis years. This suggests that credit growth in the microfinance sector was a phenomenon characterizing all institutions regardless of their institutional form.

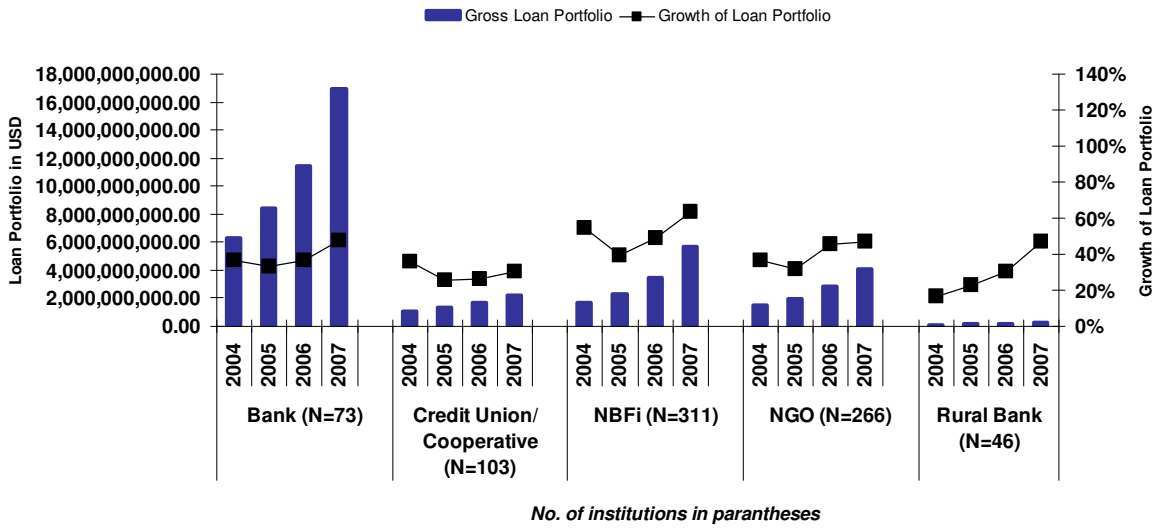


Figure 5: Credit growth in the microfinance sector – an institutional perspective

Source: The MiX – own compilation

In 2008 and 2009 credit growth slowed substantially in the microfinance and the traditional banking sectors of EMEs and DCs (Figure 6). Compared to 2007, the drop amounted to 23 percentage points in the microfinance sector and to 29 percentage points in the traditional banking sector in 2008. Evidence suggests that the slowdown was most severe in ECA, again in both the microfinance and traditional banking sector. By contrast, the South Asia region experienced modest credit contraction in both sectors.

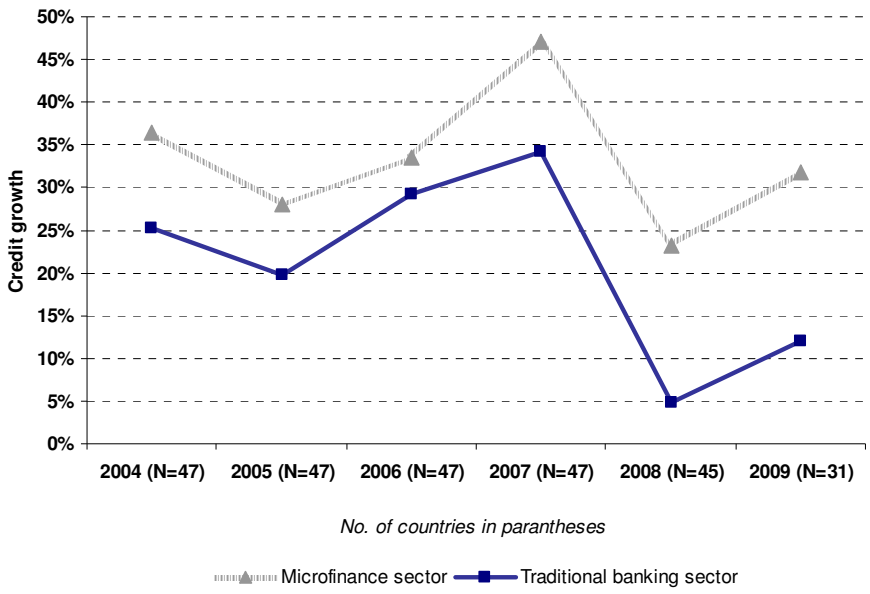


Figure 6: Credit growth in the microfinance and traditional banking sector from 2004 to 2009

Source: The MiX and IMF – own compilation

3.3 Development of capital inflows from 2005 to 2009

Before the crisis the microfinance and banking sectors in EMEs and DCs were the target of strong capital inflows (Figure 7). Both sectors gained increasing access to foreign funding at lower costs contributing to the strong growth in credit to micro enterprises and the private sector at large (Dell'Ariccia and Marquez, 2006). For the traditional banking sector the surge in foreign flows – measured by the external claims of BIS reporting banks on EME and DC banking sectors – has not been a new phenomenon. Indeed, periods of strong inflows followed by sudden stops and rapid reversals have been a key characteristic of financial integration of EMEs and DCs since the mid-1980s (Calvo and Reinhart, 1999; Milesi-Ferretti and Razin, 2000). By contrast, foreign capital became an important financing source of microfinance only in the early 2000s, when investors with commercial and social interests began channeling significant amounts of funds to MFIs via so-called microfinance investment vehicles (MIVs) (Goodman, 2006). The available evidence again suggests that patterns of capital inflows were broadly similar in the microfinance and the traditional banking sector.

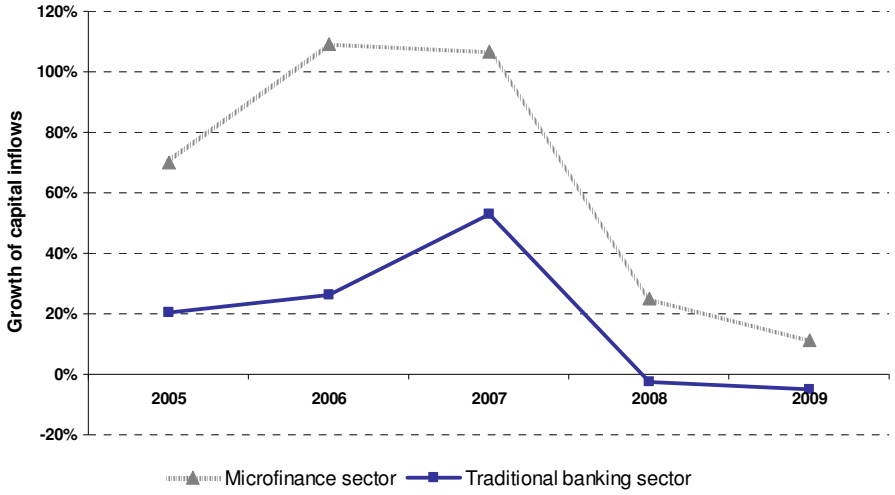


Figure 7: Growth rates of capital inflows in the microfinance sector and the traditional banking sector from 2005 to 2009

Source: Microrate, 2008; Microrate 2010 and BIS – own compilation

Rapid advances in the three years before the crisis were followed by a significant slowdown in both sectors. In the microfinance sector the growth rate of microfinance assets in MIVs experienced a large drop from 107 percent growth to 11 percent in 2009 whereas the traditional banking sector faced a sudden stop (Cali et al. 2008) of capital inflows in the post-Lehman period (Figure 7). It has to be stressed, however, that the availability and quality of data for capital flows to the microfinance sector is still limited. For example, data on the geographical distribution of foreign funding is available only for selected years.

3.4 The new boom – bust relationship in microfinance

Credit booms have been a recurrent phenomenon in traditional banking and an important predictor for future banking crises (Caprio and Klingebiel, 1996a and 1996b). Approximately three quarters of banking crises in emerging countries from 1970 to 2002 have been preceded by periods of rapid credit growth (IMF, 2004). Moreover, recent theoretical and empirical research on credit booms in the traditional banking sector suggests that the emergence of credit booms goes hand in hand with increasing capital inflows, in particular in DCs and EMEs (Mendoza and Terrones, 2008). Accordingly, credit booms end with a *hard landing* when capital flows record a sudden stop or a rapid reversal.

The correlation of capital flows and credit growth was also and has been a feature of developments in the traditional banking sector before and after the global financial crisis years. For the first time, however, similar evidence can be found for the microfinance sector. Indeed, for both sectors the correlation coefficients between credit growth and capital inflows in the period 2005 to 2009 are between 0.7 (microfinance sector) and 0.9 (traditional banking sector) (Figure 8).

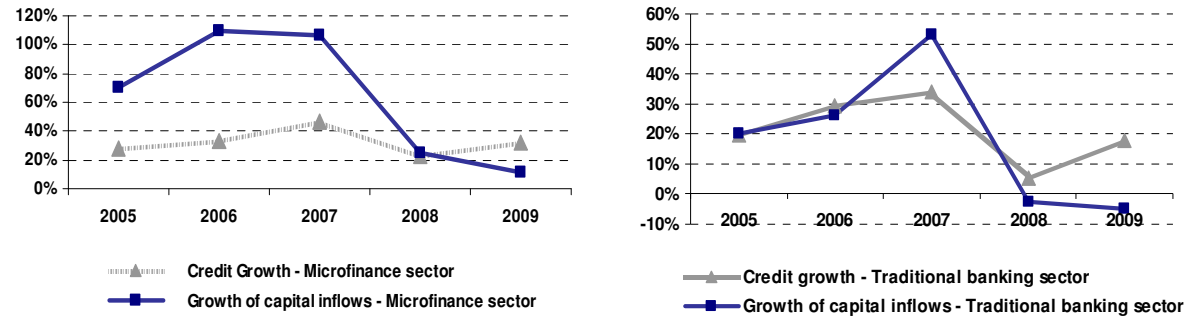
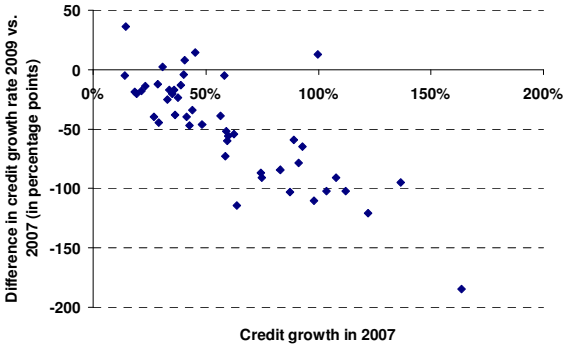
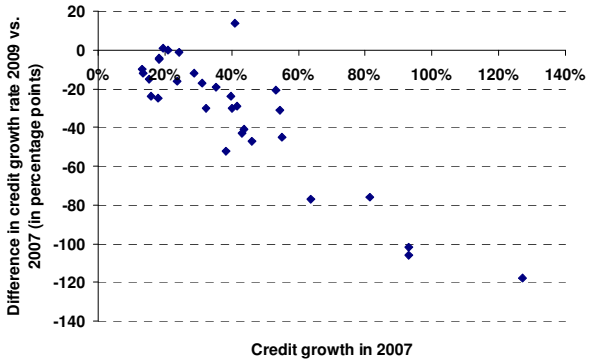


Figure 8: Development of credit growth and capital inflows in both sectors from 2005 to 2009

Source: MicroRate 2008, Microrate 2010, The MiX, IMF and BIS – own compilation

A second characteristic of boom-bust cycles in the traditional banking sector is that the magnitude of the bust is a function of the size of the pre-crisis credit boom (Tornell and Westermann, 2002). This also holds for the current crisis (Aisen and Franken, 2010; Vogel and Winkler, 2010). Interestingly, a simple correlation analysis suggests that this characteristic can also be found for the microfinance sector.





Correlation Coefficient =-.804 p < .01 N = 47

Figure 9a: Microfinance sector - Correlation between credit growth in 2007 and change of credit growth between 2007 and 2009

Source: The MiX - own compilation

Correlation Coefficient = -.895 p < .01 N = 31

Figure 9b: Traditional banking sector - Correlation between credit growth in 2007 and change of credit growth between 2007 and 2009

Source: IMF - own compilation

Higher pre-crisis growth is linked to a larger decline in lending in the post-crisis period, measured by the percentage change in credit growth between 2007 and 2009 (Figure 9a). This holds in particular for ECA countries, such as in Armenia, Bosnia and Herzegovina, Tajikistan and Azerbaijan. However, credit growth dropped substantially in Morocco, Pakistan and Kenya as well. By contrast, India, Mex-

ico and Uganda represent outliers as they continued to record high growth between 2007 and 2009 despite a boom in the pre-crisis years. Figure 9b displays an even higher significant and strong relationship between high credit growth in 2007 and a severe decrease in lending (measured by the percentage change) in 2009 in the traditional banking sector. Again, countries in ECA such as Kyrgyzstan, Kazakhstan and Bulgaria experience at most a decline in lending but also Nigeria and Ghana reports strong decreases.

4 DIFFERENT TARGET GROUPS, SAME RISKS - DOES THE MICROFINANCE SECTOR FACE SIMILAR STABILITY CHALLENGES AS THE TRADITIONAL BANKING SECTOR?

Credit booms are associated with rising risks and vulnerabilities. The literature on the traditional banking sector (see e.g. Arcalean et al., 2005) suggests that these vulnerabilities are the result of a) a *deterioration of lending standards, b) currency mismatches, partly driven by cross-border borrowing and c) the fight for market shares.* This section analyzes whether those risk factors also affected the microfinance sector in the pre-crisis credit boom.

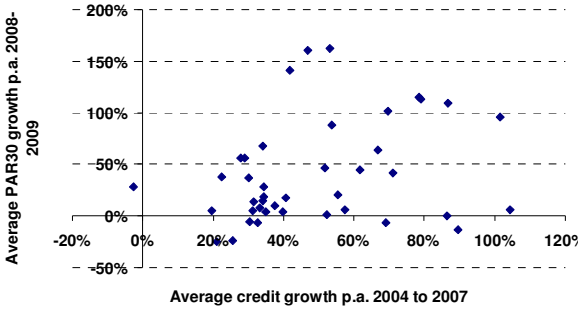
Deterioration of lending standards

Theoretical and empirical research on crises in the traditional banking sector reveals that credit booms have been associated with a decline in bank lending standards (Dell'Ariccia and Marquez, 2006; Jiminez and Saurina, 2006). Banks become less risk-averse and increasingly accept borrowers with lower credit quality. Investment projects are evaluated on the basis of more optimistic estimates of future cash flows and of inflated asset prices and collateral values (Wolfson, 2002). Furthermore, banks are confronted with strains on management and lower risk assessment capacities during the boom due to the large number of loans issued often combined with a lack of sufficiently qualified staff (Arcalean et al., 2005; Hernández and Landerretche, 1999). As long as the credit boom continues, the risks associated with these features remain largely hidden, as new loans – issued on a massive scale – do not show quality problems. Low non-performing loan ratios suggest that the boom is on a sound footing. This changes in the downturn, when new lending comes to a halt and the poor quality of loans issued in the past is revealed.

Focusing on microfinance in the pre-Lehman growth period, MFIs recorded globally low and stable arrears rates, measured as portfolio at risk above 30 days (PAR30), between two and three percent (Median) between 2005 and 2007 (The MiX, 2009), providing evidence for the sector's ability to deliver high portfolio quality. This generated confidence and optimism among MFIs as well as investors. However, funding availability and rapid growth most likely led to a loss of risk aversion and the loosening of MFI characteristic lending standards. As long as the boom continued, the rise in credit risk was masked by the rapid portfolio growth. This changed at the end of 2008, when growth slowed and many MFIs, largely irrespective of size and type, were confronted with severe portfolio quality problems. (CGAP, 2009a). The average PAR30 of 26 EMEs and DCs in our sample rose from 3.9 percent in 2007 to around 6.7 percent in 2009. By comparison, the traditional banking sector reported an increase in the non-performing loan (NPL) ratio from 5.2 percent in 2007 to 6.3 percent in 2009, taking

the average NPL.[5] Indeed, in most countries, the average growth rate of PAR30 from 2008 to 2009 in the microfinance sector was higher than the average NPL growth rate in the traditional banking sector. While PAR30 growth rates above 30 percent p.a. were recorded in 13 countries in the microfinance sector, there were only eight countries with a NPL growth rate higher than 30 percent p.a. in the traditional banking sector. A similar result is obtained when comparing the percentage point changes of PAR30 and NPL in the crises years from 2008 to 2009. While – on average – PAR30 in the microfinance sector rose by 1.5 percentage points, the corresponding increase in the NPL ratio was 0.9 percentage points in 26 EMEs and DCs. Moreover, the familiar cross-regional differences can be observed, with the strongest decline in portfolio quality recorded in ECA, in the microfinance as well as the traditional banking sector. By contrast, portfolio quality has largely remained at pre-crisis levels in South Asia.

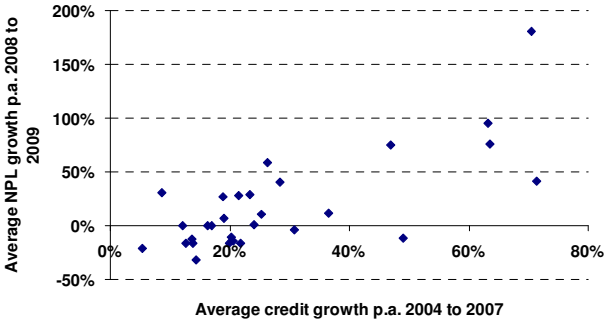
The microfinance sector has never before experienced such a negative portfolio quality development, in respect to both the pace of deterioration and the geographical breadth (O'Donohoe et al., 2010). According to Chen et al. (2010), the weakening of credit discipline was most pronounced in the credit boom countries, like Bosnia or Morocco. Against this background, we examine the link between credit growth and portfolio deterioration by correlating the average credit growth rate p.a. from 2004 to 2007 with the average PAR30 growth rate p.a. from 2008 to 2009.



Correlation Coefficient = .318 *p < .05* *N = 45*

Figure 10a: Microfinance sector - Correlation between average credit growth p.a. from 2004 to 2007 and average PAR30 growth p.a. from 2008 to 2009

Source: The MiX - own compilation



Correlation Coefficient = .739 *p < .01* *N = 30*

Figure 10b: Traditional banking sector - Correlation between average credit growth p.a. from 2004 to 2007 and average NPL growth p.a. from 2008 to 2009

Source: IMF - own compilation

The evidence presented in Figure 10a suggests that countries with high credit growth in the pre-crisis period exhibited a stronger decline inloan portfolio quality in the aftermath of the Lehman collapse. Exceptions are limited to a few countries. One of them is India which recorded the most rapid credit growth in the pre-crisis period, but only a slight increase in PAR30 between 2008 and 2009. Overall, however, our results indicate that the microfinance sector shows the familiar boom-bust relationship

[5] Note that the Non-Performing Loan indicator for traditional banking sector covers portfolio at risk above 90 days whereas the PAR30 refers to portfolio at risk above only 30 days. Thus, the comparison might draw a too rosy (negative) picture for traditional banks (MFIs).

observed in the traditional banking sector in previous crises as well as in the current crisis. Figure 10b displays a stronger boom-bust relationship in the traditional banking sector for the current crisis and suggests a moderate positive relationship between credit growth in the pre-crisis period and the deterioration of loan portfolio quality in the post-crisis period. Again, the region recording the highest credit growth between 2004 and 2007 and the most severe loan portfolio deterioration in 2008 and 2009 is the ECA region.

Currency mismatches

In the microfinance sector, strong capital inflows led to substantial currency mismatches as most of the inflows were denominated in foreign currency, i.e. US dollar or euro. An estimated 70 percent of cross-border borrowing in the microfinance sector was denominated in hard currency in 2008 (Reille and Foster, 2008). As a result either MFIs or final borrowers were facing substantial currency risk, depending on whether the MFI transformed foreign currency borrowing into local currency lending or passed the currency risk on to micro borrowers by lending in foreign currency. This risk materialized in the months after the Lehman collapse when currencies of many emerging markets and developing countries depreciated substantially against the US dollar (Littlefield and Kneiding, 2009). Hence, MFIs incurred large losses, as they had an estimated need for local currency hedging in the amount of approximately US$ 1.5 billion in 2009 (Apgar and Reille, 2010). In particular, in the ECA region, i.e. the region recording the highest inflows of capital before the crisis, MFIs and their borrowers have been highly exposed to currency volatility as 84 percent of the cross-border funding by development finance institution to MFIs in ECA was denominated in hard currency (CGAP, 2009b). Again, similar evidence can be found for the traditional banking sector. While banks in most countries did not carry significant open foreign exchange positions, reflecting regulatory constraints and restrictions, they extended foreign currency loans to local borrowers without any foreign currency revenues and hedging possibilities, including households, on a large scale. This was most pronounced in Central and Eastern Europe, fueling the boom in the pre-crisis period and aggravating the bust after the Lehman collapse (Ranciere, Tornell and Vamvakidis, 2010).

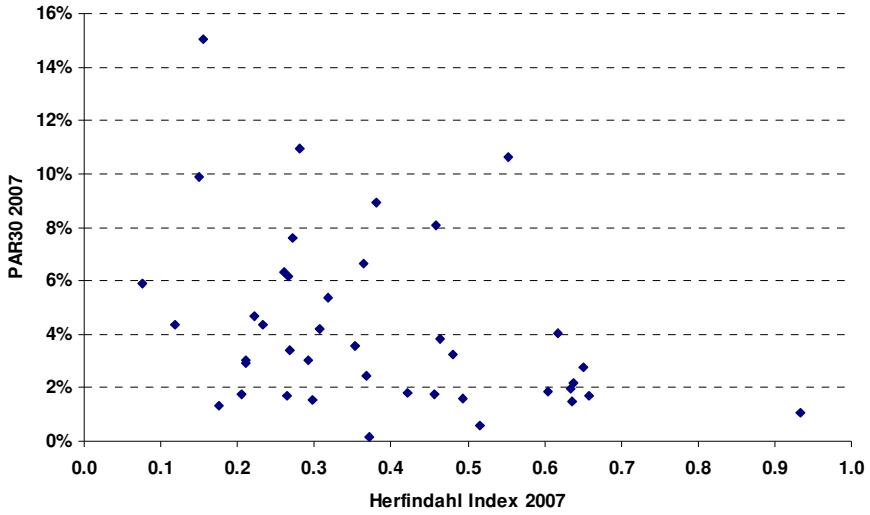
Rising competition and fight for market shares

The pre-crisis credit boom in the microfinance sector was accompanied and partly driven by a fight for market shares. Existing and newly founded MFIs became increasingly aggressive in marketing their services to the target group, also including households – via consumer and housing loans – as well as small and medium sized enterprises (Chen, Rasmussen and Reille, 2010; The MiX, 2009). Between 2004 and 2007 the number of MFIs reporting their gross loan portfolio to the MiX rose from 933 to 1331, with the strongest increase recorded in ECA, followed by MENA and LAC. This can be compared to developments in the traditional banking sector where the entry of foreign banks, for example in ECA, contributed to a higher level of competition (Arcelan et al., 2005).

In the microfinance sector, rising levels of competition have often been accompanied by multiple borrowing, with clients taking loans from more than one MFI at the same time. This holds in particular for countries where credit bureaus are either absent or dysfunctional and credit information is not shared among MFIs. In Bosnia Herzegovina, Nicaragua, Morocco and Pakistan, recent estimates suggest that around 30 to 40 percent of microfinance clients borrowed from more than one MFI in 2009 (Chen et al., 2010; Wisniwski, 2010). As in previous episodes (Vogelgesang, 2001), the crisis reveals the overindebtedness, in particular when it is accompanied by a strong decline in economic activity. Moreover, the repayment incentive of the microfinance lending technology, where borrowers only

receive a follow-up loan if they have repaid the previous loan, is undermined when borrowers do not depend on only one MFI (McIntosh and Wydick, 2005).

In order to test the link between competition and loan portfolio quality, we examine the degree of competition measured by the Herfindahl-Hirschman-Index (HHI) in 2007, and the PAR30 in 2007. HHI can range from zero to one, ranging from a single monopolistic MFI (Index=1) to a larger number of competitive MFIs (Index=0). Therefore, a decrease in HHI shows an increase in competition.



Correlation Coefficient = -.358 | *p < .05* | *N = 41*

Figure 11: Correlation between competition and loan portfolio quality in the microfinance sector in 2007

Source: The MiX – own compilation

The evidence suggests a significant negative correlation between the HHI and PAR30 in 2007, indicating that the level of competition has had an influence of MFI's portfolio quality before the crisis. However, it should be noted that the correlation coefficient is low. Moreover, when looking at the correlation of competition levels or changes in competition over time and the change in the PAR30 from the pre- to the post-crisis period, the data does not reveal a strong impact of competition on loan portfolio quality in the microfinance sector.

5 CONCLUSION

During previous financial crises, microfinance proved to be more crisis-resilient than traditional banking. Since the 2000s, however, the landscape of the microfinance sector has changed. In particular, the microfinance sector has become much more integrated into the international financial system as it has been increasingly able to access foreign funding via global capital markets. These funds contributed to strong credit growth in the pre-Lehman period. As a result, the microfinance sector showed similar developments as the traditional banking sector: high credit growth financed by strong capital inflows. Thus, risks associated with credit booms in the traditional banking sector, like the erosion of lending standards, currency mismatches and a fight for market shares also evolved in the microfinance sector.

After the Lehman collapse, both sectors experienced a severe decline in capital flows, a severe contraction of credit and a noticeable deterioration of loan portfolio quality. Thus, microfinance – like traditional banking – struggled with a freezing of the global credit market right after the Lehman collapse which led to the familiar boom-bust cycle in terms of credit growth and portfolio quality. Moreover, microfinance and the traditional banking sector have been characterized by the same regional differences with regard to the size of the credit boom, the severity of the credit contraction and the decline in loan portfolio quality. In both sectors, ECA recorded the strongest credit growth in the pre-Lehman period and was affected most in the post-Lehman period in credit quantity and quality.

Overall the evidence – albeit still preliminary due to a lack of data for several countries and microfinance institutions – suggests that many microfinance sectors seem to have lost their comparative advantage to traditional banking sectors in terms of crisis resilience recorded in the 1990s. As microfinance has become part of the global credit cycle, it has enjoyed the benefits but also experienced the downside of international financial integration. Hence, the familiar risks associated with capital inflows and credit booms in the traditional banking sector materialized in the microfinance sector in the course of the current financial crisis. This does not imply that microfinance has become just another form of traditional banking. There are still many structural differences with regard to target group, mission, and credit technologies used. However, they seem to show increasing conjunctural similarities driven by global financial market trends.

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Appendix 1: List of variables

Name	Description	Source
Credit growth – Microfinance Sector	Growth rate of the total loan portfolio in our sample	The MiX: Gross loan portfolio
Credit growth – Traditional banking sector	Growth rate of claims on private sector (annual data), provided in national currency and divided by exchange rate against the dollar (end of period)	IFS: credit to private sector (line code 22d) and exchange rate /end of period observations (line code AE)
Average credit growth 2004 to 2007 – Microfinance Sector	Geometrical mean of loan portfolio growth rates from 2004 to 2007 in the microfinance sector	The MiX: Gross loan portfolio
Average credit growth 2004-2007 – Traditional banking sector	Geometrical mean of loan portfolio growth rates from 2004 to 2007 in the traditional banking sector	IFS: credit to private sector (line code 22d) and exchange rate /end of period observations (line code AE)
Growth of capital inflows – Microfinance sector	Microfinance assets in MIVs	Growth rates of 2005 compiled from MicroRate 2008, growth rates of 2006-2010 compiled from MicroRate 2010
Growth of capital inflows – Traditional banking sector	Difference between the external positions of reporting banks vis-à-vis all sectors and the external positions of reporting banks vis-à-vis non-bank sector = the external positions of reporting banks vis-à-vis the banking sector	BIS International locational banking statistics, Table 6A and 6B
Non-performing loans (NPL)	Share of loans due over 90 days to number of total loans	IMF: Financial stability report, October 2010
Portfolio at risk over 30 days (PAR30)	Share of loans due over 30 days to number of total loans	The MiX: Portfolio at risk over 30 days
Herfindahl-Hirschmann Index (HHI)	The sum of the squares of the market shares of each MFI in the respective country. Increases in the Herfindahl index generally indicate a decrease in competition and an increase of market power and vice versa	The MiX: Gross loan portfolio
Difference in credit growth rates 2009 vs. 2007	Difference in credit growth rate in 2009 and credit growth rate in 2007 in the respective country	The MiX: Gross loan portfolio

Appendix 2: List of sample countries by region

We subdivide our countries into regional groups according to The MiX country classification 2010. We exclude all EMEs and DCs with missing values of their loan portfolio from 2003 to 2007, except of MFIs which were founded during that period. We only include countries, where at least 4 MFIs have reported to The MiX. For 2008 and 2009, number of countries declines due to limited data availability.

N = 47 (2003-2007)
N = 45 (2008)
N = 31 (2009)

	Africa	East Asia and the Pacific	Eastern Europe and Central Asia (ECA)	Latin America and The Caribbean (LAC)	Middle East and North Africa (MENA)	South Asia
1	Benin**	Cambodia*	Albania*	Bolivia*	Egypt**	Bangladesh**
2	Cameroon**	Indonesia**	Armenia*	Colombia	Jordan**	India**
3	Ethiopia*	Philippines**	Azerbaijan*	Costa Rica**	Morocco**	Nepal**
4	Ghana**	Vietnam**	Bosnia & Herzegovina**	Dominican Rep.*		Pakistan**
3	Kenya**		Bulgaria**	El Salvador*		Sri Lanka**
4	Macedonia**		Georgia**	Guatemala**		
5	Madagascar**		Kazakhstan**	Haiti*		
6	Mali**		Kyrgyzstan**	Honduras*		
7	Mozambique*		Romania*	Mexico*		
8	Nigeria**		Tajikistan	Nicaragua*		
9	Senegal**			Paraguay*		
10	Tanzania**			Peru**		
11	Uganda**					

* Country included in the 2008 sample ** Country included in the 2008 and 2009 sample

Appendix 3: Development of MIV market 2004-2009

Year	Participating MIVs at microrate survey	Microfinance assets in MIVs (in USD millions)	Microfinance asset growth (yoy)	Total MIV assets (in USD millions)	Total asset growth (in USD millions)
2004	37	415		908	
2005	41	705	69.9%	1,195	31.6%
2006	49	1,476	109.4%	1,965	64.45%
2007	69	3,053	106.8%	3,864	96.6%
2008	70	3,812	24.9%	4,931	27.6%
2009	78	4,245	11.4%	6,023	22.1%

Sources: Microrate 2008 and 2010 - own compilation

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