IDB Working Paper Series # IDB-WP-177

Interest Rates and Implications for Microfinance in Latin America and the Caribbean

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Inter-American Development Bank

Institutional Capacity and Finance Sector

March 2010

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2010

Cataloging-in-Publication data provided by the
Inter-American Development Bank
Felipe Herrera Library

Campion, Anita.
Interest rates and implications for microfinance in Latin America and the Caribbean / Anita Campion, Rashmi Kiran Ekka, Mark Wenner.
p. cm. (IDB working paper series ; 177)
Includes bibliographical references.
1. Interest rates—Latin America. 2. Interest rates—Caribbean Area. 3. Microfinance—Latin America. 4. Microfinance—Caribbean Area. I. Ekka, Rashmi Kiran. II. Wenner, Mark. III. Inter-American Development Bank. Institutional Capacity and Finance Sector. IV. Title. V. Series.
HG1623.L3 C36 2010

Abstract[*]

Microfinance institutions (MFIs) have been successful in providing credit to millions of low-income borrowers in groups previously excluded from formal financial services, but they often charge interest rates that many claim are excessive. We examine microfinance interest rates and their determinants in order to understand how these rates might be lowered. Using high-quality financial data from 29 institutions in seven countries over a period of four years, and drawing on information from field visits with clients, we explore patterns of cost and efficiency in MFIs. We find that improved operational efficiency comes with increased competition and institutional age, or learning by doing. Encouragingly, our regression analysis shows patterns of profit-making MFIs charging lower interest rates. We also find that interest rate caps reduce the outreach of these institutions to the poor, women, and rural clients.

JEL Classification: G21, O16, E43
Keywords: interest rates, efficiency, microfinance

[*]Anita Campion is President of AZMJ; Rashmi Kiran Ekka is Finance and Research Specialist at AZMJ; and Mark Wenner is Senior Financial Specialist at the IDB. We would like to thank all the participating microfinance institutions, especially the 12 microfinance managers we interviewed, for sharing their time, data, ideas, and experiences. We also thank Natalie Domond for conducting a field visit to Haiti to bring the client's perspective to this paper; Laura Smith for her contribution to our understanding of the Haitian microfinance industry; Orlando Lanuza for his contributions to our understanding of the Nicaraguan microfinance industry; and the administrative and editorial support provided by Jon Poritz, Francy Dianela Avila, Gloria Lugo, Frances Ruiz, Sarah Schineller and Mike Treadway. Without the generous cooperation and professionalism of many, this research project could not have been completed. Finally, we gratefully acknowledge our peer reviewers Elisabeth Rhyne and William Tucker for their critical insights, as well as the participants in a brown bag lunch presentation at IDB headquarters, who provided important suggestions for improvements.

List of Abbreviations

ASOMIF	Asociación Nicaragüense de Instituciones de Microfinanzas
CGAP	The Consultative Group to Assist the Poorest
FSS	Financially Self-Sufficient
IPO	Initial Public Offering
LAC	Latin America and the Caribbean
MFI	Microfinance Institution
MIX	Microfinance Information Exchange
NGO	Nongovernmental Organization
OSS	Operational Self-Sufficiency

Introduction

Why Look at Microfinance Interest Rates Now?

Microfinance programs and institutions in Latin America and the Caribbean (LAC) tend to charge higher interest rates for short-term lending to both the urban and the rural poor than conventional banks charge their generally more affluent customers. Recent studies by the Multilateral Investment Fund of the Inter-American Development Bank show that annual interest rates on microloans in the region range from 15 to 109 percent, with the majority of microfinance institutions (MFIs) charging between 20 and 45 percent (Economist Intelligence Unit, 2007). Many politicians, policymakers, and entrepreneurs (in the farm sector, in particular) have long complained that these rates are too high and that they stifle business expansion, productivity-enhancing investment, and wealth accumulation.[1] A better and more widely shared understanding of the drivers of interest rates in various financial markets, including microfinance, is needed to inform policy dialogues and the design of development projects, resulting, one hopes, in lower interest rate spreads.

The main reason given by the critics of high microfinance interest rates is that the modest rates of return achieved in most small-scale businesses in general, and in agriculture in particular, are insufficient to cover debt service at such rates. Academic research on the matter has been inconclusive. One study from South Africa (Karlan and Zinman, 2008) suggests that there may be some interest inelasticity in microfinance consumer loans, contrary to conventional wisdom which assumes that low-income clients are willing to bear high interest rates if transaction costs are low and repayment schedule convenient. On the other hand, World Bank research in Sri Lanka and Mexico (De Mel, McKenzie, and Woodruff, 2007; McKenzie and Woodruff, 2007) finds that monthly rates of return on capital are very high in a wide range of nonfarm microentrepreneurial activities, ranging from 4 to 7 percent per month, well above the typical interest rates charged by microfinance lenders of 2 to 3 percent per month. Another recent study (Bidwell, 2009) finds that returns on agricultural investment are quite high in Ghana but that farmers seem to be risk constrained, fearing a loss of collateral because of the high variability in

[1] Even in Asia, the developing region with the lowest average real gross portfolio yield (a proxy for interest rates charged), complaints about extortionate interest rates are prevalent (Fernando, 2006). At a 2004 Microcredit Summit in Dhaka, leaders from Bangladesh, India, Pakistan, and Sri Lanka complained that the average interest rate charged in the region of 3 percent per month was too high and that interest rate ceilings needed to be introduced.

rainfall. Defenders of commercial microcredit claim that access to credit is more important than the cost of credit, and that the mere fact of steady growth in the number of clients willing to pay the high interest rates is proof that microfinance provides a valuable service.

In April 2007 the Mexican commercial MFI Compartamos publicly offered its shares for sale on the Mexican stock market. With a limited history of MFI initial public offerings (IPOs) to draw on, even Compartamos's managing directors were surprised when the IPO was more than 13 times oversubscribed, resulting in the share price jumping by 32.2 percent on the first day and raising capital of US$458 million.[2] The positive market reaction was based on Compartamos's exceptional 2006–07 financial performance: the company reported a return on equity of 38.4 percent, a return on assets of 17.2 percent, nonperforming loans of only 1.4 percent of the portfolio, and profits of $80 million, and had seen its loan portfolio grow at a double-digit rate for several years. For comparison, in 2007 most private commercial Mexican banks averaged a return on equity of 15 percent, and self-sufficient Mexican financial organizations averaged a return on assets of 5.5 percent. To achieve its superior results, Compartamos's leadership had pursued a policy of high interest rates on its lending (annualized rates averaged 90 percent) coupled with high profit retention. The profits were reinvested, permitting rapid portfolio growth largely independent of contributions from donors.

Whereas the market reaction to the Compartamos IPO was overwhelmingly positive, within the global microfinance community the event caused a firestorm of debate over what levels of interest rates and profits should be considered socially responsible. Many observers, including the founder of the MFI movement, Nobel laureate Muhammad Yunus, accused Compartamos of charging excessive interest. It was argued that if the company lowered its lending rates, it could benefit even more low-income clients while still enjoying strong institutional growth and performance (Malkin, 2008).

Although the Compartamos IPO was mainly responsible for the period of microfinance industry soul searching that started in the spring of 2007, other factors also contributed. One of these was the rise in the number of left-of-center governments in the region starting in the late 1990s, several of which—in Argentina, Colombia, Ecuador, Nicaragua, and Paraguay—enacted interest rate ceilings on microcredit. In some of these countries, the definition of microcredit is broad, generous fees and commissions are permitted (thus offsetting much of the effect of the

[2] All monetary amounts in this paper are in U.S. dollars.

cap), and enforcement is lax. In Ecuador and Nicaragua, however, the caps have had a marked impact on the industry's development. Ecuador's law allows the central bank to eliminate commissions and limit interest rates for microcredit, which ranged from 9.3 to 33.9 percent per year in 2009.

In Nicaragua, since the implementation of the Microfinance Association Law in 2001, microfinance interest rates have been limited to the average of interest rates charged by the banking system. In 2004, as a result of industry pressure, MFIs were allowed to charge commissions, but this resulted in greater opacity of pricing: many clients no longer knew the effective interest rate being charged on their loan. In the wake of a massive expansion of MFIs in rural areas and the absence of effective judicial enforcement of debt instruments and a functioning credit bureau, overindebtedness emerged as a problem. As delinquencies mounted, some MFI staff engaged in overly aggressive collection practices, thereby alienating and abusing their clients. This triggered popular antagonism toward MFIs in several communities and gave rise to the No Payment Movement (Movimiento No Pago), which attracted attention and support from politicians at first. The government of Nicaragua later renounced the movement following acts of violence by its supporters, but it also introduced a bill calling for general debt forgiveness. In response, both MFIs and commercial banks in several areas of the country have ceased to operate, and the fear is widespread that if the bill is passed, the expansion of credit to rural areas of Nicaragua will be hindered for several years to come.

The advent of the global economic and financial crisis in the last quarter of 2008 has further constrained liquidity in the region. MFIs continue to grow, but at more modest rates, since their cost of funds has increased and many are experiencing difficulty accessing capital at any price. At the same time, the number of nonperforming loans is rising, and remittances from expatriate workers have fallen. The latter is worrisome because some MFIs had been generating substantial fee income from handling these remittances, and the recipients had often used the money toward loan repayment.

Most MFIs are coping with the crisis, focusing on improving their internal procedures and operational efficiency. Meanwhile, however, many governments in the region have announced new or expanded subsidized credit programs targeting the low-income population. Many of the MFIs that participate in these programs have to adhere to fixed intermediation margins, which are sometimes insufficient to cover operating costs.

In short, the confluence of long-simmering discontent with high-interest-rate policies, the backlash against the Compartamos IPO, the spread of interest rate ceilings, and the expansion of government-subsidized programs indicate an acceptance of a more activist government role in financial markets and a rejection of the tenets of financial liberalization that reigned in the 1990s. Many MFIs now find themselves struggling to adapt to these changes.

Microfinance at a Crossroads: Subsidize or Improve Operational Efficiency

The policy discussion over how to improve financial inclusion in LAC is at a crossroads. On one hand, there seems to be momentum toward reinitiating or expanding government-sponsored subsidized credit programs, especially in rural areas, as a way of boosting economic growth, enhancing food security, and reducing poverty. Despite a long history and substantial literature on the failure of financially repressive policies—quotas, interest rate ceilings, directed subsidized credit, reliance on state-owned financial institutions with poor governance and instructions to engage in political intermediation, and debt forgiveness programs—many of these ideas are gaining currency once again. These interventions, although well intentioned, can prove to be counterproductive, ineffective, and costly to taxpayers. In the past such interventions have led to commercial actors withdrawing from the market completely; they have also stimulated rent seeking and corruption and led to credit rationing, diversion of funds to investments other than those targeted, and heavy fiscal losses.

An alternative strategy is to focus on understanding the cost structures in microfinance, the role of innovation, and to explore how operational efficiency can be improved in a rational and sustainable manner. Many of the actions and investments needed to build a healthy and more inclusive financial market are not being undertaken, or if they are, it is at a painfully slow pace and in a partial manner that often fails to capture the attention of the wider public and policymakers.

For much of the past decade, donor organizations have intervened on several fronts:

- Increasing the flow of funds to the microfinance sector;
- Supporting the development of more amenable regulatory and supervisory structures;

- Developing some mid-level and legal infrastructure, such as compiling benchmarking data through the MIX Market;[3]
- Building networks within countries to advocate for policy improvements, and international networks to facilitate the transfer of know-how from country to country and region to region;
- Strengthening retail capacity in many individual institutions;
- Subsidizing product development and technological innovation, such as mobile banking and microinsurance;
- Supporting the integration of microfinance into national and international formal financial and capital markets; and
- Promoting transparency and consumer protection.

Less attention has been paid, and fewer resources have been devoted, *to improving the internal efficiency of MFIs, promoting competition, and lowering interest rates*. Arguably, the main avenue to lowering interest rates is through competition. Yet outside of Bolivia and Peru, two highly competitive markets with well-developed regulatory frameworks for MFIs and some large-scale microfinance operators, competition remains weak and lending rates in microfinance have not declined significantly.

Despite its impressive growth and development of the last 30 years, the microfinance industry is facing a series of challenges: it must demonstrate its impact, lower its costs, manage risk better, become more competitive, and continue to innovate and offer more financial services than just credit. This paper focuses on one of these challenges: what can and should be done to promote lower lending interest rates without being counterproductive or detrimental to the long-term prospects for the industry.

This paper is organized as follows. Section II presents a conceptual framework and discusses the research objectives and the methodology used. Section III provides an overview of microfinance interest rates in LAC countries. Section IV discusses the main determinants of portfolio yield, which is the proxy used here for interest rates, and of operational efficiency, and

[3] The MIX (Microfinance Information Exchange) market is a global, web-based, microfinance information platform supported by CGAP, the Citigroup Foundation, the Open Society Institute, the Rockdale Foundation, and other private foundations. It currently provides data on 1,136 MFIs, 97 investors, and 165 microfinance networks and market facilitators.

further explores the implications of these determinants for MFIs and their clients. Section V draws conclusions and implications from the findings for other stakeholders, including government policymakers, donors, and investors.

I. Conceptual Framework—Why Are Microfinance Interest Rates High?

The Determinants of Microfinance Interest Rates

The determinants or drivers of microfinance interest rates include the following:

- *Operating costs:* These are the sum of salaries, rents, utilities, depreciation, fuel expenses, vehicle maintenance, legal fees associated with collections, regulatory and business fees, taxes, property insurance charges, and other business expenses. All of these must be covered by income from lending if an MFI's operations are to be sustainable.
- *Loan losses:* The higher the rate of nonperforming loans and related provisions, the lower the profit margin, all else equal. If loan losses are high, an MFI may have to raise interest rates to maintain the expected profit margin. If the entity is regulated and authorities demand a high level of provisioning even though default rates are minuscule (the average for MFIs worldwide was 1.9 percent in 2006), compliance will increase the cost of lending and thus interest rates.
    - *Expected profit:* For-profit operations have shareholders or investors who expect a certain level of return; thus, the interest rates they charge will tend to be higher, all else equal. Nonprofit operations may not need to generate revenue above their costs at the same level as for-profits, but they still need to increase their capital base to fund investments in infrastructure, technology, equipment, staff remuneration, and training so that they can enhance their performance and grow.
    - *Credit and Operational Risks:* MFIs face a host of risks, most of which are out of their control. MFIs can however take steps to protect themselves from credit risk and operational risks (lost data, errors in calculations, fraud, and embezzlement). MFIs can take different measures such as meticulous credit evaluations, overcollateralization, credit bureaus, adequate internal controls and regular audits to mitigate these risks.

Many factors that might increase microfinance interest rates are external to the organization and therefore beyond the control of the microfinance manager, including:

- *Lack of macroeconomic stability:* When governments run large public deficits that force them to finance a growing debt, average rates of interest will be higher in the domestic financial market affecting cost of funds for financial intermediaries and contributing to inflationary pressures. Likewise, if the government is facing balance of payments problems, the domestic currency may depreciate or be devalued, and microfinance operators that have borrowed abroad may be forced to raise their interest rates and to avoid unhedged foreign indebtedness. Weak macroeconomic management directly increases the cost of funds within a national market for MFIs. Limited bank competition exacerbates this effect. To maintain the purchasing power of loanable capital, interest rates must account for the eroding effects of inflation as well. Obviously, the higher the inflation rate, the higher the interest rates that must be charged, all else equal.
- *Poor physical infrastructure:* Electrical service may be sporadic and unreliable, roads may be in poor condition, and Internet connectivity may be expensive, making outreach to potential MFI clients difficult and costly.
- *Weak business environment:* The public institutions that serve micro-, small, and medium-size enterprises may be weak, and the cumulative effect of economic policies can be unfavorable to the sectors to which an MFI has lent, thereby reducing profitability.
- *Low human capital:* The clients of MFIs tend to have low levels of education and to be poor record keepers. This affects their ability to understand financial products and to evaluate the viability of projects for which they might borrow. MFI staff must to be able to compensate for these deficiencies. They must be able to construct financial statements, explain the institution's policies and products clearly, evaluate the merits and risks of each loan proposal, and service loans. Sometimes it can be hard to recruit and retain highly educated and motivated staff, especially in rural areas. Investments must be made in staff training, and often these become fully productive only with a lag.
- *Lack of adequate collateral or substitutes:* Low-income households often lack secure title to real property that can be pledged as collateral, and substitutes, such as moveable property or documented evidence of an excellent repayment history, are often lacking as well. As a result, MFIs must engage in labor-intensive screening of prospective clients and their businesses and monitor their behavior closely after the loan is extended.

- *Weak contract enforcement capability:* Creditor rights tend to be attenuated in countries whose legal systems are based on the Napoleonic code compared with those based on English common law. When combined with weak legal institutions for the creation, implementation, and enforcement of secured interests, these attenuated rights can pose great risks for lenders.
- *Political and other risks:* When governments change the rules, policies, and regulations affecting financial operations, they may increase costs for the microfinance industry. The four main political risks that MFIs face are mandatory debt forgiveness, interest rate ceilings, unfair competition from publicly owned financial entities offering subsidized interest rates, and an inadequate regulatory environment. Other external risks include foreign exchange risk associated with international debt instruments; interest rate risks where in mismatches may arise between liabilities and assets; property damage due to fire, theft, and natural disasters; business disruption due to civil disorder; and political risks such as changes in regulations or economic policies that affect the cost and nature of doing business. To protect themselves, MFIs usually add risk premium to their interest rates.

Research Objectives and Methodology

Objectives. The research project reported in this paper had four objectives. The first was to document the range of interest rates charged in LAC and compare them with rates in other regions. The second was to discover which key variables seem to explain or drive high interest rates in microfinance. Specifically:

- What is the impact on interest rates of serving more women as clients?
- Do institutions with better operating efficiency ratios charge lower interest rates?
- Are younger or older institutions more efficient and therefore able to charge lower interest rates?
- What is the effect of loan size on interest rates?
- What is the effect of the size of the institution?
- Do profit-making MFIs charge lower interest rates?
- How does competition affect interest rates and operational efficiency?

The third objective was to assess whether clients can afford the interest rates charged by MFIs. The fourth was to use the information collected to develop recommendations to inform discussions and policy dialogue and design better projects to strengthen microfinance.

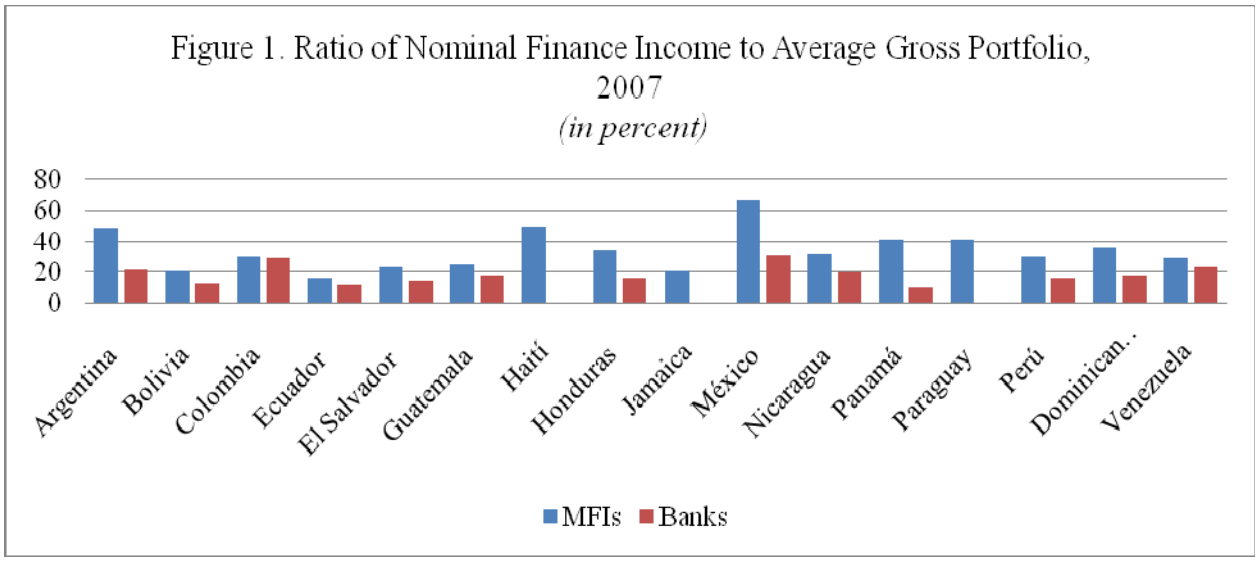
Methodology. The research used three main sources of primary data. First, to learn more about interest rates through financial and operational analysis of MFIs, extensive, high-quality financial data was collected from 35 MFIs from seven LAC countries (Bolivia, the Dominican Republic, Ecuador, Haiti, Mexico, Nicaragua, and Peru) for the years 2005 through 2008. Six of the MFIs submitted incomplete data; hence the final analysis uses only data from the remaining 29. These MFIs are representative of the different types of MFIs active in LAC, including microfinance banks, savings and loan cooperatives, nonbanking financial institutions, and nonprofits. The selection of institutions was based in large part on the quality and extent of data available for them. All the MFIs in the sample regularly report data to the MIX market and reported additional data directly to this study. The dataset is thus biased in that it includes only MFIs that are dedicated to institutional transparency. These MFIs, however, collectively serve a larger fraction of microfinance customers in Latin America than do the less transparent ones, which are more numerous but on average smaller.

The second source of information was qualitative and consisted of telephone interviews with 12 microfinance managers, using the questionnaire reproduced in Annex C. These interviews provided insights into how microfinance managers set and manage interest rates and the innovations they have undertaken to reduce rates. The third source of information, also qualitative, was field visits and client interviews in two countries, Haiti and Nicaragua. In total, 24 clients were interviewed, half from urban and half from rural areas. The client sample was small and nonrepresentative and intended only to provide some insights that would help in interpreting findings from the regression analysis.

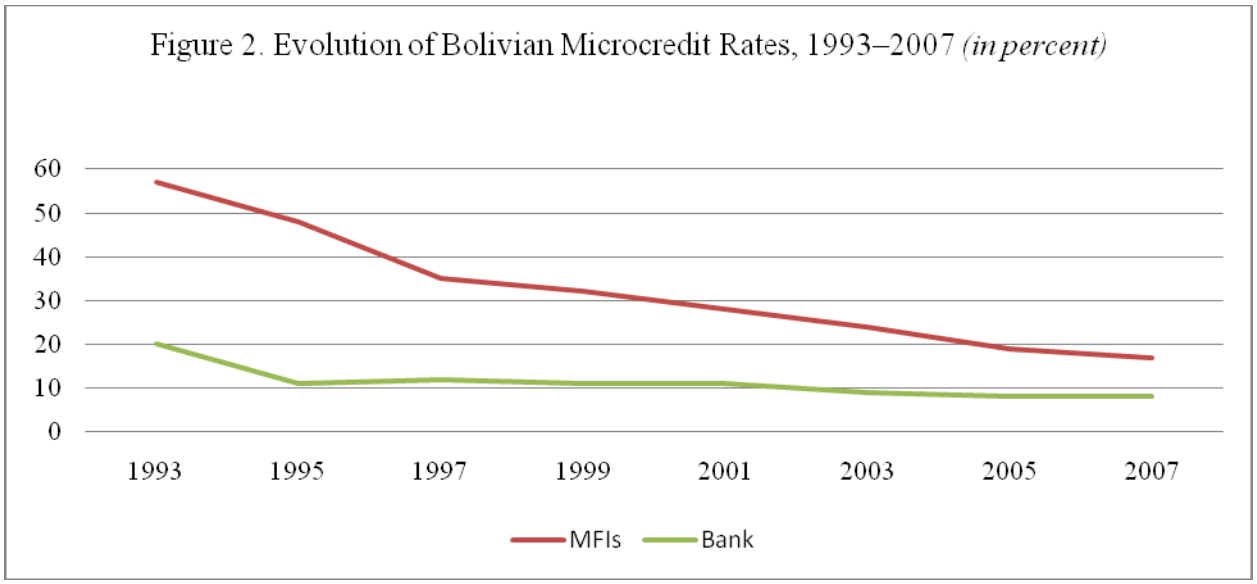
II. Overview of Microfinance Interest Rates in LAC

It is challenging to compare interest rates across different types of financial institutions in different countries, because rates are affected by many variables. Average effective microfinance

interest rates in a group of LAC countries in 2007 ranged from about 20 to about 70 percent per year (Figure 1). These rates are high compared with bank interest rates in the same countries, which ranged between 10 and 32 percent per year. However, microfinance interest rates have been falling steadily in many countries. Bolivia is one of the best examples of this trend. In December 1992 effective interest rates at Bolivian MFIs averaged 60 percent per year. By June 2007 they had come down to under 20 percent (Figure 2). In our sample, the 4-year average portfolio yield across the seven countries in our study is 36 percent.



Source: Economist Intelligence Unit (2007).



Source: Rosenberg et al. (2009) adapted from Gonzalez-Vega, Claudio, and Villafani-Ibarnegaray (2007) and Banking Superintendency data.

There is no one best way of comparing interest rates across institutions. We use portfolio yield as a proxy for average effective interest rate charged by an MFI. Portfolio yield is measured by dividing an institution's earned income by its 2-year average gross portfolio. Portfolio yield combines the interest and fees earned on a portfolio in a way that makes a fairer comparison than a straight comparison of interest rates. According to the 2007 and 2008 MIX MFI Benchmarks (Table 1), average portfolio yields at Latin American MFIs were the highest of five developing regions in those years.

Table 1. Real Yields on Gross Portfolios of MFIs by Developing Region, 2007 and 2008 *(in percent)*

Region	2007	2008
Africa	23.4	23.1
Asia	18.1	20.3
Europe and Central Asia	19.7	19.3
Latin America and Caribbean	26.2	26.8
Middle East and North Africa	22.5	22.7

Sources: Microfinance Information Exchange (2008a, 2008b).

Table 2 reports the average portfolio yield in 2008 in each of the seven countries examined in this study. Bolivia and Ecuador have the most competitive portfolio yields, and Mexico the least. For our sample, the average portfolio yield across the seven countries studied for four years was 36 percent.

Table 2. Real Yields on Gross Portfolio of MFIs in Countries in the Sample, 2008 *(in percent)*

Country	Average yield
Bolivia	20
Ecuador	24
Haiti	48
Mexico	74
Nicaragua	32
Peru	36

Source: Economist Intelligence Unit (2008).

Given that commercial loans are generally much larger than the average microfinance loan, it is easy to understand why relationship-intensive MFIs must charge higher interest rates than banks charge on their commercial loans. Assuming an average term of 12 weeks for a microloan, it would take 400 microloans of $1,000 to achieve the same return as a single one-year commercial loan of $100,000, if the interest rates were the same. Even with the most efficient evaluation systems, the process of identifying, processing, and collecting a large number of microloans will be considerably more costly than processing one large loan, even when factoring in the collateral registration and third-party valuations often required for larger loans.

A plethora of reports document that MFIs generally charge far less than informal moneylenders. According to the Consultative Group to Assist the Poor (CGAP; Rosenberg et al., 2009), median informal rates were 10 to 25 percent per month, or 120 to 300 percent annualized, far above the 22 percent global MFI average and the 26 percent average among MFIs in LAC in 2007 (Microfinance Information Exchange, 2007). Nonetheless, informal moneylenders continue to have a place in the financial markets. According to conventional wisdom and recent studies (see Collins et al. [2009]), informal moneylenders including credit from stores are utilized primarily for their expedient processing, which is often more important to microloan clients than cost when emergencies occur.

There remains a wide range of interest rates even among MFIs and their products. As competition expands, so does the range of products designed to serve specific market niches in LAC. Gone are the days when the main distinction between microloan types was whether the loan was made using an individual or a group guarantee. Today, many MFIs offer multiple loan products, including loans for working capital and fixed assets, loans for longer-term investments such as in a home or a commercial building, and loans for small home improvements. Many MFIs now offer consumer loans, which are mixed in with their microenterprise loan portfolios, and several offer second and third loans to the same client, sometimes considered seasonal or emergency loans. In addition, most MFIs now offer a range of pricing for the same loan type, depending on the loan size, the productive sector or loan purpose, the length and quality of the borrower's credit history, and what kind of collateral or other guarantee secures the loan. All these factors add to the complexity of setting interest rates. This paper explores the many reasons

for the disparity in interest rates among MFIs in LAC and their products, as well as the influences that impact interest rates and how they are set.

IV. Results: Factors Affecting Microfinance Interest Rates

The research reported here considers a number of the drivers of microfinance interest rates cited above, including some that are within the control of microfinance providers and others that are not. Among the former are the MFI's mission and strategy (for example, whether they focus on women, rural clients, or the extreme poor), operational efficiency, portfolio quality, age, operational self-sufficiency (OSS), profit margin, average loan size, the scale of the institution, and portfolio at risk. Among the latter are inflation, the cost of funds, competition, and regulation and other forms of government intervention (interest caps, credit quotas, debt forgiveness, and general financial sector regulation). Summary statistics for these indicators are presented in Annex Table A1 for all the MFIs in our sample.

The drivers of interest rates were studied by analyzing financial and portfolio data for the 29 MFIs in our sample using two different regression models. In model 1 portfolio yield is the dependent variable (see Annex Table A2 for results); the independent variables (all lagged by one year) are the MFI's age in years, operating expense ratio operating expense weighted by average gross loan portfolio), percentage of total borrowers who are women, OSS (financial revenue / (financial expense + loan loss provision expense + operating expense), the profit margin, the cost of funds, portfolio at risk greater than 30 days, a measure of competition (defined below), and the average loan size. In both models, some variables have been log-transformed to normalize their distribution.

Model 1: $\ln(\text{portfolio yield}_t) = \beta_0 + \beta_1(\ln(\text{age}_{t-1})) + \beta_2(\ln(\text{operating expense ratio}_{t-1})) + \beta_3(\ln(\text{women}_{t-1})) + \beta_4(\text{OSS}_{t-1}) + \beta_5(\text{profit margin}_{t-1}) + \beta_6(\text{cost of funds}_{t-1}) + \beta_7(\text{portfolio at risk} > 30_{t-1}) + \beta_8(\text{competition}_{t-1}) + \beta_9(\ln(\text{average loan size}_{t-1})) + \epsilon_t$.

In model 2 the operating expense ratio is the dependent variable (see Annex Table A3 for results). The independent variables are the institution's age in years, the percentage of total borrowers who are women, OSS, the profit margin, number of borrowers, average loan size, portfolio at risk> 30 days, and competition:

Model 2: $\ln(\text{operational expense}) = \beta_0 + \beta_1(\ln(\text{age})) + \beta_2(\ln(\text{women})) + \beta_3(\text{OSS}) + \beta_4(\text{profit margin}) + \beta_5(\ln(\text{borrowers})) + \beta_6(\ln(\text{average loan size})) + \beta_7(\text{portfolio at risk}) + \beta_8(\text{competition}) + \epsilon$.

Factors under the MFI's Control

Institutional Mission. Is there a trade-off between social and financial performance? In the 1990s, donors and microfinance support networks emphasized good financial performance and pushed MFIs to become financially self-sufficient (FSS). In the past few years, the emphasis has moved toward making microfinance an increasingly double-bottom-line industry, where donors and investors demand not only good financial performance but also good social performance.

This study investigated two of the most common social goals for MFIs: increased lending to women, and increased lending to rural areas. Women have often been the target clients of MFIs, but many Latin American MFIs offer their services to men as well. Women are targeted both to overcome traditional biases against them and because they are believed to be more likely to invest the earnings from their enterprises in their children's health and education (ILO, 2008). Women, however, tend to take smaller loans than men, which tends to increase the operating costs of any lender that caters to them. Other observers have noted that serving clients in rural areas, which have infrastructure deficiencies and greater client dispersion, is more labor and resource intensive for MFIs, which also drives up costs.

Do interest rates rise when MFIs focus on women clients? In 2008, 59.6 percent of all clients in the average MFI in LAC were women. The average for the MFIs in our sample was similar, at 60.2 percent. The model 1 regression suggests that a 1 percent increase in the share of women clients in the previous year increases an MFI's portfolio yield by 0.015 percent in the current year, keeping all other variables constant. The model 2 regression suggests that the same 1 percent increase in women clients raises an MFI's operating expense ratio increases by 0.53 percent, keeping all other variables constant. The regression coefficient is significant at the 10 percent level for model 2. Figure 3 reports results of a simple regression of portfolio yield on the share of women clients, without controlling for other variables. This regression also shows a positive relationship between the two variables**.**

The research thus does not find support for the hypothesis that MFIs that have a stronger social mission, as measured by the percentage of women served, are more inclined to charge lower interest rates. Interviews with microfinance managers also suggest that MFIs that have a higher percentage of women clients are usually nonprofit and unregulated institutions. As nonprofit organizations, they have a strong social motivation to serve women and provide them access to financial services. Some of these nonprofits also offer nonfinancial business development services, which add to their costs per client.

Figure 3. Relationship between Share of Women Clients and Portfolio Yield

This is a simple two-way graph that shows the relationship between percent of women clients and portfolio yield of the MFIs included in the analysis. The blue line in the graph is the regression line with a quadratic fit. The white band shows the 95 percent confidence interval. This graph does not control for other variables.

Source: Authors' regressions.

Affordability. Along with their institutional mission, MFIs have to pay attention to their clients' ability to repay their loans. By doing so, MFIs ensure that their portfolio quality stays strong and that their social mission is fulfilled.

To understand the perspectives of microfinance clients on interest rates, the study surveyed 12 clients of one MFI in Haiti and 12 clients of another MFI in Nicaragua. The two MFIs were chosen for their presence in both rural and urban areas. Because the sample size is quite small, it is hard to draw definite conclusions; however, some patterns emerged.

The interviews show that clients have a limited understanding of interest rates and focus more on their monthly payment schedules. All clients interviewed in Nicaragua said that they knew the term of their loan and the monthly payment but were unaware of the annual percentage rate and fees. For 8 of the 12 clients, ease of access to credit was the most important factor in selecting an MFI.

Table 3. Loan Characteristics of Microfinance Clients Interviewed in Nicaragua *(in U.S. dollars)*

Client	Amount of loan	Interest rate (percent per month)	Total monthly payment to MFI	Term of loan (months)	Net profit per month	Monthly payment as percent of net profit
			Rural branches			
1	3,500	2	110	36	396	27.8
2	5,000	2	200	48	401	49.9
3	600	4	120	6	593	20.2
4	7,500	1.75	756	12	1,667	45.4
5	1,200	4	98	18	767	12.8
6	5,000	3	250	36	1,088	23.0
Avg.	3,800	2.79	256	26	818	29.9
			Urban branches			
7	4,500	2.5	176	48	475	37.1
8	700	2.5	30	30	6,296	0.5
9	500	5	100	6	726	13.8
10	3,000	2.5	130	36	1,484	8.8
11	5,000	2	179	48	514	34.8
12	500	2.5	50	12	178	28.1
Avg.	2,367	2.83	111	30	1,612	20.5

Source: Client interviews and authors' calculations.

Table 3 demonstrates that all of the Nicaraguan clients were well able to service their loans from the profits they generated and had money left over for family expenses. For the average rural client, close to 30 percent of net business profits went to repaying the loan; the same figure for urban clients was lower, at 20.5 percent. Additionally, 8 of the 12 clients were supported by supplemental income from other family members. Eleven of the 12 said that the credit had improved their quality of life; only one person claimed no change in quality of life.

Table 3 also suggests that loan size and term are important factors in determining the interest rates charged by MFIs. Smaller, shorter-term loans generally carry higher interest rates than larger, longer-term loans. The rural borrowers in our Nicaraguan sample had a higher average loan size ($3,800) than the urban borrowers because of some very large loans to commercial farmers and rural shopkeepers. These rural clients took out bigger loans for shorter periods and made a smaller profit per month than the average urban client. Urban clients seem to

be wealthier and rely less on loans to smooth their consumption. Loan service absorbed a smaller proportion of urban clients' total monthly net business profits (20.5 percent).

Client interviews in Haiti yielded similar findings, but some clients were too poor to repay their loans. An assessment of monthly household revenue and expenses (cash flow) among the Haitian clients indicated that two of them could not afford to make their loan payments. As indicated in Table 4, the six rural microfinance clients interviewed in Haiti spent a much larger portion of their net business profits on loan payments than the six urban clients interviewed (40.3 percent versus 24.2 percent).

Table 4. Loan Characteristics of Microfinance Clients in Haiti *(in U.S. dollars)*

Client location	Average loan size	Average payment	Average net profit	Average payment as percent of net profit
Urban	558	82.65	341	24.2
Rural	568	76.62	190	40.3

Source: Client interviews and authors' calculations.
Note: Dollar figures are based on an exchange rate of 40 Haitian gourdes to the dollar.

Operating Efficiency. The efficiency of the typical MFI has improved substantially over the past decade. According to CGAP (Kneiding, Al-Hussayni, and Mas, 2009), the average operating expense ratio for MFIs globally dropped from 28 percent in 2000 to 19 percent in 2007. CGAP attributes the improvement to MFIs achieving maturity, as reflected in a greater number of borrowers or of loans advanced , larger average loan size (resulting in lower transaction costs per loan, but also in mission drift for some MFIs), and better knowledge of customers, allowing them to streamline their processes. According to the MIX (Microfinance Information Exchange, 2008), mature MFIs in LAC achieved an average operating expense ratio of 22.3 percent in 2008. South American MFIs (with an average ratio of 17.9 percent) were more efficient than Central American MFIs (21.5 percent), which in turn were more efficient than Caribbean (40.2 percent) and Mexican MFIs (57.4 percent).

Does improved efficiency lead to lower interest rates? Our regression analysis using model 1 shows that as costs increase, portfolio yield tends to increase significantly as well. With every 1 percent increase in the operating expense ratio in the preceding year, portfolio yield increases by 0.24 percent in the current year, keeping all other variables constant. The coefficient

on the operating expense ratio variable was significant at the 1 percent level. Table 5 demonstrates that countries with low average operating expense ratios (that is, high efficiency) have lower average portfolio yields as well.

Table 5. MFI Operating Expense Ratios and Portfolio Yields in Countries in the Sample *(in percent)*

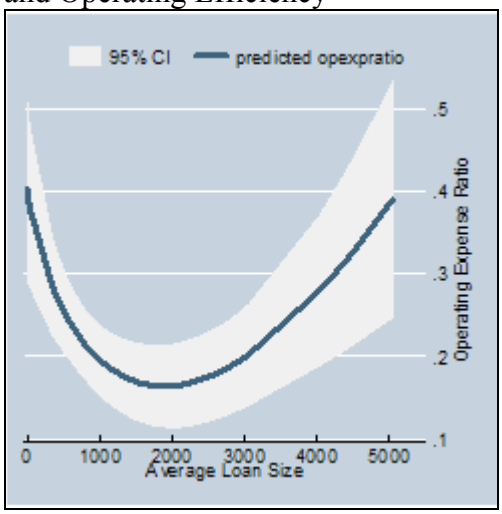
Country	Average operating expense ratio, 2007	MFI portfolio yield	
		2007	2008
Bolivia	13.5	20.5	20.6
Dominican Republic	Not available	35.7	33.6
Ecuador	15.6	16.8	21.1
Haiti	Not available	49.4	48.9
Mexico	47.7	66.6	82.2
Nicaragua	20.6	32.4	31.5
Peru	17.2	30.8	30.5

Sources: Microfinance Information Exchange (2008a); Economist Intelligence Unit (2007, 2008).
Note: Caribbean MFIs had an average operational efficiency ratio of 40.2 percent in 2008, according to the MIX.

MFIs in Ecuador have slightly poorer operating efficiency on average than some of their counterparts in other South American countries, but also a lower average portfolio yield. This departure from the pattern just described can partly be explained by the fact that the Ecuadoran government sets interest rate caps, which limits market-based price setting. The higher average portfolio yield in Peru can be explained in part by the country's lower level of microfinance market saturation, which was estimated at just 24.4 percent versus Ecuador's 40.8 percent. Weaker competition allows Peruvian MFIs to achieve higher profits: their average profit margin in 2007, according to the MIX MFI Benchmarks report, was 18.1 percent, compared with 8.2 percent for Ecuadoran MFIs.

Average Loan Size. Does increasing the average loan size improve operating efficiency? According to MFIs themselves, the small size of the average MFI loan is one of the most important reasons for the high interest rates they charge. MFIs cater mainly to low-income people, whose credit needs are small. As noted above, it takes more small loans to earn the same gross return as a few large loans, but because each loan transaction goes through a similar process, one would expect that total processing costs will be higher for the many small loans

Figure 4. Relationship between Average Loan Size (in U.S. dollars) and Operating Efficiency



Note: Line shows fitted values from a simple quadratic regression of the operating expense ratios of MFIs in the sample on MFIs' average loan size, omitting other control variables. Shaded band indicates the 95 percent confidence interval of the estimate.

than for the few large ones. Our regression analysis, however, suggests that the story is not so simple: over part of the range of loan size, we found a *positive* correlation between average loan size and the operating expense ratio (and between loan size and portfolio yield).

Figure 4 shows that, in our sample, up to an average loan size of about $1,800, the operating expense ratio drops steadily as the average loan size rises. Thereafter, however, the operating expense ratio steadily increases with loan size. Across all MFIs in our sample, the average loan was $1,560; the largest loan was for $5,473. We infer that the gains from increasing the average loan size are lost at a certain point, which some of the Latin American MFIs in our sample have already crossed.

Source: Authors' regressions.

Table 6. Average Loan Size in Countries in the Sample, 2007
(in U.S. dollars)

Country	Average loan size
Bolivia	1,502
Dominican Republic	1,066
Ecuador	1,629
Haiti	423
Mexico	779
Nicaragua	953
Peru	1,184

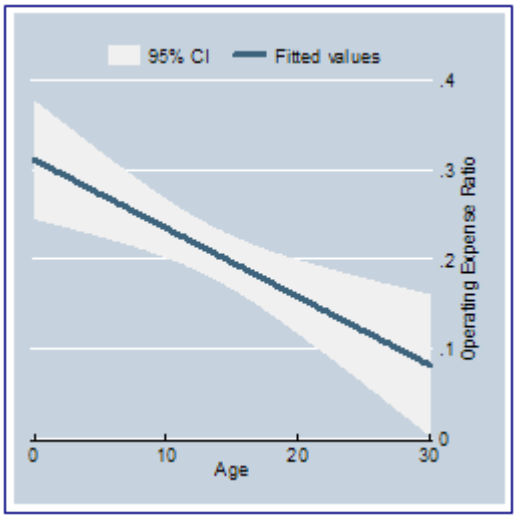
Source: Microfinance Information Exchange (2008a).
Note: Average loan size is calculated as the gross loan portfolio divided by the number of borrowers.

Table 6 shows that Ecuador has the highest average loan size of the countries covered by our sample, at $1,629. As noted above, Ecuador also has interest rate caps, which have been squeezing MFIs and their ability to reach out to more clients. This statistic is consistent with the idea that interest rate caps can hurt the poor, because it is difficult to serve them when MFIs are restricted by interest rate ceilings.

Institutional Size. What is the impact of institutional scale on the operating expense ratio? We measure the scale of an institution as its total number of borrowers. Our regression results suggest that, as in the case of increasing average loan size, the gains made by increasing institutional scale dissipate after a certain point. Rosenberg et al. (2009) suggest that scale economies are exhausted once an MFI's client base grows to 2,000. The Rosenberg study suggests that MFIs cannot reduce their costs just by increasing scale, because microfinance is a labor-intensive industry—salaries make up a majority of the typical MFI's operating expenses—so that fixed costs are relatively low compared with variable costs.

The average MFI in our study had 73,044 borrowers. Results from our model 2 suggest that with a 1 percent increase in the number of borrowers, the operating expense ratio increases by 0.16 percent, keeping all other variables constant. This coefficient was significant at the 1 percent level.

Figure 5. Relationship between Institution Age (in Years) ad Operating Efficiency



Note: Line shows fitted values from a simple quadratic regression of the operating expense ratios of MFIs in the sample on MFIs' average age, omitting other control variables. Shaded band indicates the 95 percent confidence interval of the estimate.

Source: Authors' regressions.

Age of the Institution. Microfinance has a long history in LAC. The age of an MFI, because of the learning that comes with experience, is likely to be one of the most important drivers of efficiency. Over time, MFIs learn more both about their clientele and about how to cut costs while providing increasingly better services. In our sample, the oldest MFI is a cooperative that has been operating for 44 years; the average age of MFIs in the sample is 14.4 years. The 2008 MIX Market Benchmarking report (Microfinance

Information Exchange, 2008) reported that the average real portfolio yield for new MFIs (0 to 4 years old) in LAC was 56 percent; for young MFIs (5 to 8 years) it was 44 percent, and for mature MFIs (over 8 years) the figure was 31 percent. The operating expense ratio followed a similar pattern, with averages of 56 percent for new MFIs, 27 percent for young MFIs, and 18 percent for mature MFIs.

Are older institutions in fact more efficient? Regression analysis using model 1 suggests that with every 1 percent increase in institutional age in the previous year, the portfolio yield decreases by 0.15 percent in the current year, keeping all other variables constant. The coefficient is significant at the 1 percent level. Model 2 yields similar results: for every 1 percent increase in age in the previous year, the operating expense ratio decreases by 0.06 percent in the current year, keeping all other variables constant. Figure 5 reports results of a simple regression of operational expense ratio on institutional age, without controlling for other variables, which confirms that the age of an MFI is one of the strongest determinants of its operating efficiency.

It can be assumed that the efficiency gains that an MFI achieves with age are related to the knowledge it acquires by serving clients and to its
adjusting its products to meet their needs—both these processes occur over time. But MFIs might be able to gain some of the advantages of age more quickly by investing in market research and responding to the client feedback thereby acquired.

Sustainability and Profitability. Determining the appropriate level of profit is at the core of the debate over MFIs' setting of interest rates. Profits speak to an MFI's ability not only to recover its costs but also to increase its capitalization so that it can serve more clients, and to provide a competitive return to shareholders. There is general agreement that MFIs should strive to at least break even, but opinions differ regarding how much profit is acceptable.

Regression analysis using model 1 found that with a 1 percent increase in OSS (defined as financial revenue divided by the sum of financial expense, loan loss provision expense, and operating expense) in the previous year, portfolio yield increases by 0.46 percent in the current year, keeping all other variables constant. The coefficient is significant at the 1 percent level. Using model 2, we found that with a 1 percent increase in self-sufficiency, the operating expense ratio falls by 0.48 percent, keeping all other variables constant. This coefficient is significant at

the 5 percent level. This suggests that more operationally self-sufficient MFIs are also more successful in keeping their costs down.

We measured an MFI's profit margin as its net operating income divided by its total financial revenue. Using model 1, we found that with a 1 percent increase in profit margin in the previous year, portfolio yield decreases by 0.06 percent in the current year, keeping all other variables constant. Using model 2, we found that for every 1 percent increase in profit margin, the operating expense ratio decreases by 0.17 percent, keeping all other variables constant. Neither coefficient was statistically significant; however, both suggest that increases in profit margin may contribute to lower interest rates and lower operating expense ratios.

A simple comparison of mean portfolio yields shows that financially self-sufficient (FSS)[4] MFIs usually charge higher interest rates than non-FSS MFIs, perhaps because the latter are not subject to pressure to recover their costs through earned income as long as they have donor support. This finding is in line with industry averages of portfolio yield for FSS and non-FSS MFIs in LAC. Table 7 shows that in 2007 non-FSS MFIs of all sizes charged lower interest rates on average than FSS MFIs. In 2008, however, this pattern changed: except among large MFIs, non-FSS MFIs saw huge jumps in interest rates. For small non-FSS MFIs, this increase was nearly 10 percentage points.

Table 7. Average Real Portfolio Yield by MFI Size and Financial Self-Sufficiency in LAC, 2007 and 2008 *(in percent)*

	FSS MFIs		Non-FSS MFIs	
MFI size	**2007**	**2008**	**2007**	**2008**
Small (<10,000 borrowers)	35.9	35.2	29.6	39.3
Medium (10,000–30,000 borrowers)	27.3	29.9	27.8	34.2
Large (>30,000 borrowers)	21.2	23.5	18.4	15.8

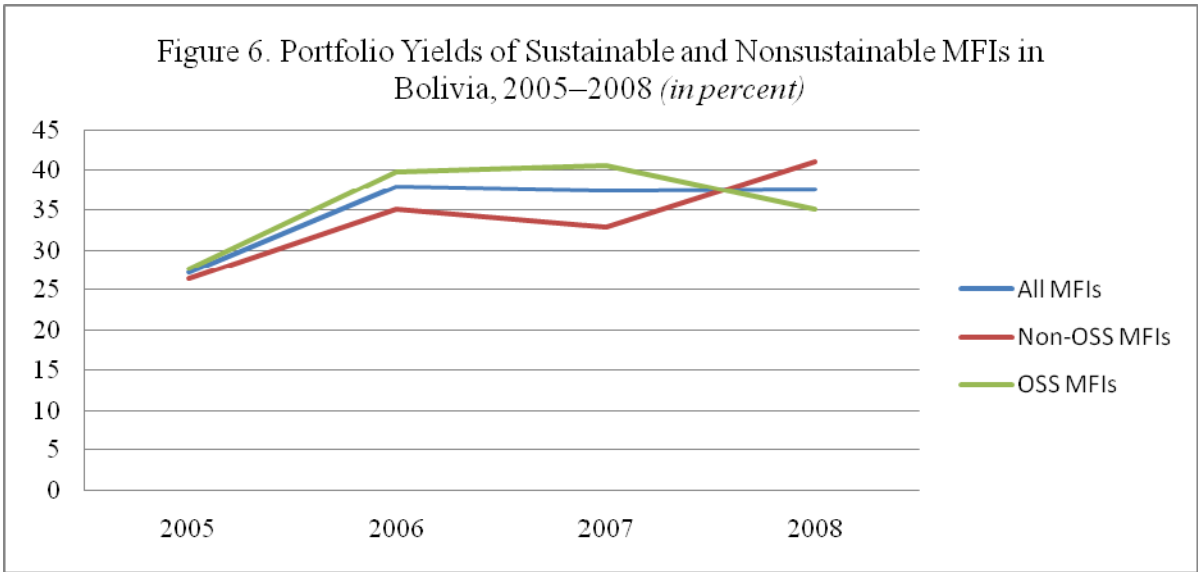
Sources: Microfinance Information Exchange (2008a, 2008b).

Within our sample, non-OSS MFIs charged higher interest rates in 2008 than in 2007: their average portfolio yield increased from 33 percent to 41 percent (Figure 6). At the same

[4] An institution is financially self-sufficient when it has enough revenue to pay for all administrative costs, loan losses, potential losses and funds.

time, OSS MFIs reduced their average portfolio yield from 40 percent to 35 percent. That the two groups average portfolio yield has moved in opposite directions can be attributed to the global financial crisis and the emergence of microfinance as a less risky asset class, which has helped channel capital market funds at low interest rates to sustainable and profitable MFIs.

Figure 6. Portfolio Yields of Sustainable and Nonsustainable MFIs in Bolivia, 2005–2008 *(in percent)*



Source: Authors' calculations.

Despite these findings, the difficult questions remain: what level of profits is acceptable for an MFI, and how should MFIs use those profits? Additional research is also needed to determine the extent to which profit motives result in greater investment in expanding outreach to unserved clients.

Portfolio Quality. The quality of an MFI's portfolio was measured by a standard industry indicator: the share of an MFI's loans that are more than 30 days past due (portfolio at risk > 30). Regression analysis using model 1 suggests that a 1 percent increase in this measure in the previous year leads to a 0.75 percent decrease in portfolio yield in the current year, keeping all other variables constant. Analysis using model 2 finds that the same 1 percent decrease in portfolio quality leads to a 1.4 percent increase in the operating expense ratio, keeping all other variables constant. As expected, this indicator suggests that for an MFI to be able to contain its operating expense ratio and to keep its portfolio yield at its normal levels, it has to maintain good portfolio quality.

Factors Not under the MFI's Control

As noted above, among the important external factors that influence interest rates are inflation, the cost of funds, and competition. Here we analyze in turn the impact of each of these factors on the interest rates charged by the MFIs in our sample.

Inflation. Inflation is an important variable in determining the market cost of funds, and MFIs must factor in anticipated inflation when setting their interest rates. We have not included inflation in our model, but data (Table 8) shows that microfinance institutions are not able to quickly adjust interest rates to react to inflation swings. Table 8 shows that MFIs in Ecuador and Mexico seem to have reacted to inflation spikes and increased their interest rates more than MFIs in other countries. One of the reasons for which microfinance institutions are not able to quickly react to inflation hikes is that the average loan term of clients in Latin America are increasing along with loan sizes.

Table 8. Inflation and Average Portfolio Yield of MFIs in Countries in the Sample
(in percent per year)

	Inflation		Average portfolio yield	
Country	**2007**	**2008**	**2007**	**2008**
Bolivia	8.7	14	20.5	20.6
Ecuador	2.3	8.3	16.8	21.1
Nicaragua	11.1	19.8	32.4	31.5
Mexico	4.0	5.1	66.6	82.2
Peru	1.8	5.8	30.8	30.5
Haiti	8.5	15.5	49.4	48.9
Dominican Republic	6.1	10.6	35.7	33.6

Sources: Central Intelligence Agency (2007, 2008); Economist Intelligence Unit (2007, 2008).

Cost of Funds. Some would argue that the cost of funds should be included among the controllable variables that impact interest rates. Good MFI managers can lower their cost of funds by shopping among multiple loan providers, and by working to improve the terms on which they receive credit by reducing their risks and making themselves more attractive in other ways to savers and investors. Nonetheless, many determinants of the cost of funds are outside the control of the MFI, at least in the short term. One way to reduce the cost of funds is to mobilize deposits, but depending on the size of the MFI and the regulatory environment, this is not always an option. Most MFIs try to develop a diverse funding base, but there are usually a limited number of credit providers available to an MFI, depending on its size, risk profile, and institutional type.

The funding terms and conditions available to an MFI are often dictated by the alternative opportunities that lenders and investors have for those funds and by the interest rates prevailing in the market. Although the availability of funds has improved for the largest and strongest MFIs, most are primarily price takers, especially in local markets. The ongoing credit crunch in the wake of the global financial crisis has only made this situation more difficult.

The average cost of funds for 554 sustainable FSS MFIs from all over the globe, as reported in the Rosenberg et al. (2009) study, was 8.3 percent in 2006; for Latin American MFIs the figure was 8.5 percent. The cost of funds for our sample, averaged over four years was likewise 8.5 percent. Our regression analysis finds that with a 1 percent increase in the cost of funds in the previous year, MFIs increase their portfolio yield by 1.27 percent in the current year, keeping all other variables constant. This coefficient was significant at the 5 percent level. Hence the cost of funds does have a strong impact on the interest rates that an MFI charges. However, it seems that the cost of funds is largely out of the hands of MFI managers and instead is dictated by the financial markets.

Competition. Our research shows that competition and its impact on institutional development are important influences in improving MFIs' operating efficiency, which, as we have already shown, correlates with lower interest rates. In interviews, MFI managers said that competition was often the largest factor in determining the interest rates they charged, as well as in driving institutional development investments. The countries experiencing the greatest competition in their microfinance industry, such as Bolivia and Peru, generally had the lowest interest rates.

Although pressure from competition is outside of an MFI's control, many MFIs respond by undertaking institutional development, such as increasing the range of services provided and investing in innovative technologies to help them stay ahead of the curve. Anecdotal evidence from interviews with microfinance managers indicated that as competition increases, MFIs are driven to expand into new markets, and especially to attract more rural and more lower-income clients. To achieve the efficiencies needed to serve those markets, many MFIs turn to information technologies to reduce their transaction costs per client. For example, some cited the use of credit scoring systems to better price loans according to the borrower's profile. Another MFI has begun using mobile banking to reach its rural loan clients at lower cost; it also hires loan officers with agricultural backgrounds to reduce the risks (and therefore the costs) of its rural and agricultural loan portfolio.

To see which markets covered by our sample were most competitive, we calculated a measure of country market saturation by dividing the total number of microfinance clients by the population of poor adults (above the age of 18) who might need credit. The study used national definitions of poverty and assumed that 70 percent of poor adults could use access to credit. Based on this measure, Ecuador is by far the most saturated microfinance market of the countries covered in our sample, with nearly 41 percent of the potential clientele already served (Table 9). Given the higher interest rates on MFI lending in Mexico, it is not surprising to learn that it has achieved only 13 percent market saturation to date. This finding suggests that competition among microfinance providers remains limited in Mexico and that there is still significant potential for market expansion.

Table 9. Estimated Saturation of Microfinance Markets in Countries in the Sample

Country	Total population	No. of poor over 18 who could use credit	Population currently served by microfinance	Estimated market saturation (percent)
Bolivia	9,517,537	2,434,44	655,887	26
Dominican Republic	9,725,569	1,246,89	274,239	21
Ecuador	13,339,580	2,202,38	899,744	41
Haiti	9,611,554	3,024,30	239,000	7
Mexico	105,280,515	9,923,72	1,330,858	13
Nicaragua	5,604,596	1,062,98	419,156	39
Peru	27,898,182	5,490,24	1,340,476	24

Sources: World Bank and UNICEF data; Economist Intelligence Unit (2008); and authors' calculations.
Note: It is assumed that 70 percent of the poor in a given country could use credit.

For our regression analysis we used Microscope's indicator of institutional development (Economist Intelligence Unit, 2008) to measure competition. This is a composite index of level of competition, the condition of credit bureaus, and the range of microfinance services. In regressions using model 1, we found that a one-unit increase in this variable in the previous year leads to a 0.72 percent decrease in portfolio yield in the current year, keeping all other variables constant. In regressions using model 2, a one-unit increase in the competition variable leads to a 1.36 percent decrease in the operating expense ratio, keeping all other variables constant. The coefficients are significant at the 1 percent level in both regressions.

Government Regulations and Interventions. The stance of LAC governments toward microfinance has been mixed. For example, as noted above, the No Payment Movement in Nicaragua led to violence and protests against MFIs, resulting in some branches temporarily shutting down and in increasing delinquencies. At the same time, the Nicaraguan government instituted a regulatory commission to help increase transparency and removed interest rate caps. Bolivia has historically had a reputation for sound microfinance regulation, but recently it passed a law allowing nonprofit MFIs to take intermediate deposits with extremely low capital reserve

requirements. Such a policy risks the reputation of the country's entire microfinance industry if one of those MFIs should fail as a consequence.

How do government regulation and intervention affect interest rates? In general, a sound regulatory environment should help decrease interest rates, by increasing the confidence of savers and investors in MFIs so that they are willing to provide funds at lower cost. On the other hand, inappropriate government interventions, especially those that distort the market, generally result in negative unintended consequences, such as reduced client access to microfinance. Anecdotes from microfinance managers in Ecuador suggest that the interest rate caps imposed by that that country's government are keeping MFIs from serving the poor, contrary to its stated intentions. The larger average size of MFI loans in Ecuador supports the managers' claim.

V. Conclusions and Implications

General Conclusions

The research reported in this paper shows that many factors can have either a direct or an indirect impact on microfinance interest rates. Perhaps the most important generalizable finding, however, is that improved operational efficiency—a key driver of lower rates—comes primarily from five sources: competition, reinvestment of profits, learning by doing, pressure from donors and investors on MFIs to be socially responsible, and the absence of interest rate caps.

Competition puts the greatest downward pressure on the cost of microfinance to clients. To attract and maintain clients, MFIs have to lower pricing and realize efficiency gains because in expanding their lending to lower-income clients, including rural clients and women, who are often the targets of donor and government interventions, the cost of serving this population is naturally higher. All stakeholders interested in bringing down the costs of microfinance should keep an eye on what actions and interventions will be most beneficial to supporting competition and the development of natural market mechanisms to respond to the diverse consumer demand for financial services in developing countries.

When an MFI's *profits* are channeled back into the company, the result is not only to improve operations, capacity, and technology, but also to directly or indirectly lower interest rates. Our regression analysis suggests that MFIs that made profits in one year are likely to

decrease their portfolio yields and their operating expense ratios in the next. Maintaining high portfolio quality is key to improving profitability.

Learning by doing also seems to improve efficiency. Older MFIs tend to have greater success in lowering their operating expenses than younger ones, most likely because they have accrued comparative advantage from the knowledge they have gleaned over time by serving clients and adjusting their products to meet those clients' needs . Older MFIs also tend to be larger, which also confers competitive advantage. To make up for their age disadvantage, younger MFIs can invest in market research, listen and respond to client feedback, and initiate training programs such as learning trips to older MFIs.

Pressure for social responsibility from donors and investors, including governments, can play a major role in shaping the microfinance industry. Currently, donors are seeking improved performance from MFIs in three areas: social responsibility, environmental protection, and consumer education and protection. Operational efficiency can be added to this list, but doing so raises issues of consistency and prioritization. Microfinance has emerged as the "platform of choice" for all sorts of interventions: in health, education, training, and the environment, among others. Although these are all worthy causes, using MFIs to achieve them adds to their costs. If operational efficiency is a high priority, MFI managers must have the power to decide what services it can effectively deliver, and how to deliver them, while continuing to lower lending costs. There is a clear and inherent conflict between piggybacking other services on MFIs and lowering their lending interest rates. One key step in helping MFIs improve their operational efficiency would be to assist them in installing activity-based cost accounting. Without knowing the cost associated with each line of business, product, and branch office, it is difficult to realize technical efficiency.

Interest rate caps reduce outreach to women and to poor and rural clients. Our regression analysis suggests that MFIs with a higher percentage of women clients tend to charge higher interest rates. The likely reason is that women typically take smaller loans, which increases total administrative costs. Also, MFIs that cater primarily to women tend to offer other, nonfinancial services as well, which can increase costs and raise portfolio yield. Our findings from field visits to Nicaragua suggest that poor rural clients depend more on credit to smooth consumption than do urban clients. When interest rates are capped, poor clients in rural areas are the first to be eliminated, because of the higher costs of serving them. Ecuador, which

imposes interest rate caps, has the highest average loan size among all the countries studied, which suggests that the poor are being underserved.

Implications for MFIs

Our findings point to several practices that MFIs can adopt that will allow them to offer lower interest rates to clients while remaining competitive in the market:

- *Price according to the market and the institutional mission.* MFIs that focus heavily on targeting women or the rural poor might have to charge slightly higher interest rates to cover their costs, cross-subsidize from higher-income market segments, or seek donor assistance to reach those markets.
- *Pass profits on to clients in the form of reduced interest rates.* This will help MFIs ensure that they maintain their double-bottom-line commitment and avoid being accused of rent seeking.
- *Operate in a fair and transparent manner*. MFIs should make sure that their clients understand the cost of their loans and can afford to repay them; they should especially avoid practices that are likely to lead to seizure of collateral. As financial institutions with a social mission, MFIs ideally should apply the emerging best practices related to social performance management, as highlighted in Campion, Linder, and Knotts (2008). At a minimum, MFIs should adhere to the consumer protection principles highlighted in Table 10.

Table 10. Principles of Client Protection

Core principle	Interpretation
Avoidance of overindebtedness	Do not entice clients to take products they do not need or cannot afford.
Transparency of pricing	Pricing, terms, and conditions should be easy to access and understand.
Appropriate collections processes	Debt collection practices should not be abusive or coercive.
Ethical staff behavior	Staff should comply with high ethical standards, seeking to provide services that improve their clients' lives.
Mechanisms for redress of grievances	Create a way for clients to voice their problems and concerns and address them quickly and effectively.
Privacy of client data	Clients' personal data should not be shared externally without their authorization.

Source: Based on The Smart Campaign, "Smart Microfinance and the Client Protection Principles," www.smartcampaign.org/about-the-campaign/smart-microfinance-and-the-client-protection-principles.

- *Improve operational efficiency*. MFIs can improve staff productivity by using appropriate incentive systems and maintaining the right ratio of staff to clients. They can also enhance efficiency by lowering general administrative costs, keeping portfolio quality high, and implementing new technologies that reduce transaction costs.
- *Strengthen portfolio quality.* Although some struggling MFIs with weak portfolio quality are kept afloat with donor dollars, in general MFIs should maintain asset quality, as it is a key factor that investors use to determine whether to invest and on what terms. Since the cost of funds directly contributes to interest rates, MFIs should manage portfolio quality and identify efficient risk reduction strategies that will assist in negotiating the best investment terms. MFIs should diversify their portfolios by penetrating rural areas, since maintaining a good balance between rural and urban lending enhances operational efficiency and increases access by the poor.
- *Monitor influences within the external operating environment.* Although MFIs lack full control over some of the variables that affect interest rates, such as inflation, competition, regulation, and other forms of government intervention, they should monitor these variables and assess their pricing accordingly. In addition, by working with local and regional

microfinance networks and associations, MFIs can help their industry inform the government and lobby against policies, such as interest rate caps, that could damage market mechanisms. The Nicaraguan microfinance network ASOMIF (Asociación Nicaragüense de Instituciones de Microfinanzas) played a key role in helping the Nicaraguan government back down from its tough stance against the MFIs.

Box 1. Regulating Microfinance

Microfinance requires adaptations to traditional bank regulations, such as:

- Lower minimum capital requirements, to facilitate the transformation of microfinance NGOs into regulated entities and to spur competition
- Higher capital adequacy ratios than the 8 percent of risk-weighted assets required under the Basel Capital Accord
- Faster scheduling of provisions, because a microloan that is 90 days past due is at high risk of default
- Statistical sampling of a portfolio for audit purposes, since a full portfolio audit would be too expensive
- Less rigorous documentation requirements for business loans

Implications for Government Policymakers

It is the government's responsibility to ensure a stable political and macroeconomic environment in which both financial and other businesses can thrive, and to provide core social services to populations not adequately served by the private sector. Given the need to balance these responsibilities, the primary implications from this research for government policymakers are that they should:

- *Ensure a sound economic and political environment.* The presence or absence of such an environment has a significant influence on a country's ability to attract investors and lower the cost of funds available to MFIs and their local wholesaling institutions.
- *Install a solid regulatory framework.* An effective regulatory framework inspires public confidence in the financial sector and assures investors and depositors that there is adequate oversight, especially to protect their savings. In particular, regulatory authorities need to understand how microfinance portfolios differ from the larger collateralized portfolios of traditional banks. (Box 1 highlights key regulatory adaptations for the effective oversight of microfinance portfolios.) The regulatory framework, however, should not be so extensive that it becomes overly expensive, or so restrictive that it limits the number of institutions available to provide financial services. Ideally, a sound regulatory environment would facilitate the creation of a credit bureau or credit information agencies, which MFIs could use to better assess client risk profiles and levels of indebtedness. With such information, MFIs can make better lending and pricing decisions.

- *Encourage the creation of and competition between multiple providers of microfinance*. Increased competition within the microfinance sector increases access and lowers costs. Therefore, governments must be careful to avoid implementing policies—such as sharp curbs on international capital flows—that would hinder investment in MFIs. Governments might also consider creating a mechanism to facilitate the transformation of nongovernmental organizations engaged in microfinance into regulated financial institutions. One such mechanism, the Fondos Financieros Privados structure in Bolivia, seems to have been successful at facilitating expanded outreach and competition among microfinance providers.
- *Create laws to protect consumers and ensure transparent pricing.* Clients often have difficulty understanding the interest rates charged on their loans and other financial products. Governments can play a role in protecting clients from abusive practices by, for example, prohibiting deceptive marketing campaigns that hide the true costs of a financial transaction, and guarding against the misuse of clients' private information. Consumer protection efforts generally require a public communications initiative to raise awareness of client rights. Such initiatives can also be paired with efforts to increase general financial literacy.
- *Avoid intervening in a way that distorts microfinance markets.* Although it can be politically tempting to intervene in ways that seem likely to help the poor, government officials need to carefully consider the short- and long-term implications of such initiatives. There are countless stories of well-intentioned governments intervening in financial markets in ways that ultimately worked against the very group the policy was intended to benefit (see Von Pischke, Adams, and Donald, 1983). For example, "in a number of countries, governments have forgiven categories of small loans under their own programs or by state commercial banks. These episodes have created major problems for MFIs. Clearly, failure to ensure high repayment rates in other parts of the financial system reduces overall borrower discipline and makes it harder for MFIs to maintain high repayment rates" (McGuire, Conroy, and Thapa, 1998, p. 36; Table 11 lists several financial policies that have had unintended adverse consequences). To avoid broad policy failure, government policymakers should, at a minimum, discuss any potential interventions with industry leaders, such as leading MFIs or

microfinance networks or associations, before implementing new financial policies, to ensure they understand the full repercussions on the industry.

Table 11. Common Market Distorting Policy Interventions

Policy	Expected result	Actual result	Reason
Creation of state entity to lend directly to the poor	To increase access to underserved	Low repayment rates; discouraged investment by private sector	Creates mentality of entitlement by the poor, poor selection process, and management
Targeted lending (e.g., to specific agricultural sectors)	To improve access to underserved	Discouraged investment by private sector	Money is fungible, so such programs are costly and difficult to track and enforce
Subsidized lending	To reduce interest rate costs to the poor	Lower-cost loans went primarily to wealthy clients; slowed growth of MFIs	Wealthy clients have connections; difficult for MFIs to compete
Interest rate ceilings	To reduce interest rate costs to the poor	Reduced access to rural areas; greater emphasis on larger loans	MFIs unable to recover all costs associated with rural markets
Debt forgiveness of small loans	To reduce burden of the poor	Increased delinquency across entire financial sector	Creates moral hazard among all small loan clients

Source: Authors' elaboration.

Implications for Donors

The unique role of donors is to assist the poor where markets on their own fall short and to provide incentives that encourage markets to serve the poor without damaging market mechanisms. This can be tricky business. Nonetheless, some important findings from this research can guide the work of donors in developing countries.

- *Support governments in building a solid regulatory framework for microfinance markets.* The framework needs to be sophisticated enough to oversee the key risks related to the solvency of the financial sector and its ability to build trust and protect savings. Donors must be careful to avoid supporting the creation of a system that will prove overly burdensome to

maintain. Regulation and supervision of microfinance can be expensive, given the large number of transactions involved. Many countries with well-reputed regulatory frameworks for microfinance, such as Bolivia and Peru, use a risk-based approach, which also allows for the larger banks to cross-subsidize some of the expenses related to supervising microfinance providers. Donors considering supporting the creation of national credit bureaus should be aware of international experience with such institutions; that experience suggests that such institutions should be comprehensive, which often requires mandatory participation by all regulated financial institutions (Campion and Valenzuela, 2001). Rather than create a separate credit bureau for microfinance, it is generally preferable to facilitate MFIs' access to a single national credit bureau, to ensure the widest possible availability of credit risk information to lenders. The existence of a credit bureau reduces moral hazard by creating credit histories and improving repayment rates, which reduces the costs and risks of lending. The savings should be passed on to borrowers in the form of lower interest rates.

- *Avoid intervening in ways that distort functioning microfinance markets.* Donors as well as government policymakers should avoid engaging in practices that distort market mechanisms, such as targeted lending and conditional interest rate subsidies. In many countries, donor subsidies have been helpful and even necessary in establishing a viable microfinance sector. Once this is accomplished, however, as it has been in most of LAC, donors should cease providing operational subsidies to MFIs. If subsidized loans are to be offered to MFIs—for example, to expand lending to rural areas—then donors should allow the MFIs themselves to determine the end cost (fees and interest rates) to the borrower, since they are best placed to determine the full cost of serving those markets.
- *Support governments in implementing pro-competitive policies and cost reduction strategies.* These include allowing for a variety of service delivery platforms, adopting moveable property laws, and using innovative technologies such as electronic and mobile banking. Given our finding that improved efficiency is linked to reduced financial costs to clients, donors should support the use of technology to improve efficiency and create alternative distribution channels. Mobile branches, for example, have been used by MFIs in Peru to reduce transaction costs in especially difficult-to-serve rural areas.
- *Assist the spread of knowledge among microfinance providers so that the learning process can be shortened.* Our findings indicate that older institutions tend to outperform younger

ones. This suggests that the knowledge gained from experience matters. An aggressive campaign to disseminate lessons learned, evaluate performance, promote transparency, and train the staff of all microfinance providers should help steepen the learning curve.

Implications for Investors

Private investors generally seek to maximize profit by selecting the best investments within their target risk profile. Socially responsible investors seek to maximize social impact within their target profit and risk tolerance profiles. The past decade has seen increased interest in investing in MFIs, mainly from socially responsible investors, but also from other private investors who perceive significant growth and income prospects from investing in microfinance. Deutsche Bank Research (2007) predicts that worldwide investment in microfinance will rise from $5 billion in 2006 to $25 billion by the end of 2015. Private investment in microfinance is expected to outweigh investment by international financial institutions by 2015, at $20 billion and $5 billion, respectively. This does not, however, mean that supply will be sufficient to meet global demand. Indeed, Deutsche Bank Research also estimates that the gap between the two will widen, to approximately $250 billion (Dieckmann, 2007). New players continue to enter the microfinance investment market: the MIX Market listed 104 funds on its website in 2008, up from 75 in 2006—a 39 percent increase in just two years. As they play increasingly important roles on the boards of MFIs, private investors need to consider the following:

- *There are limits to the interest rates and fees that MFIs can charge their clients.* In Haiti, MFIs interviewed for this study were struggling to recover all costs, and even with cross subsidies, some of the rural clients interviewed could not afford their loan payments. Even when high profits appear feasible, this tends to be a short- to medium-term phenomenon, as other financial institutions become attracted to microfinance markets where high profits are being earned, increasing competition and driving down portfolio yields. In addition, excessively high interest rates can attract negative publicity, and potentially the intervention of governments seeking to protect the poor against usurious practices.
- *A large number of microenterprises remain unserved by microfinance providers in LAC.* The majority of the potential expansion for microfinance lies in serving rural areas. This research demonstrates that rural markets are more costly to serve and often have lower income potential. While these markets can still be profitable, they are best served by

financial institutions that have broad geographical coverage and a significant urban portfolio already established.

- *Socially responsible investors should conduct due diligence to ensure that the MFIs they are considering investing in are operating in compliance with their stated social mission.* For example, if the MFI's mission is to empower low-income women, the investor needs to see how the MFI ensures that its clients comprise a significant number of women and that their lives are in fact being improved as a result of the MFI's services. Socially responsible investors should also make sure that the MFI does not engage in any practices that could be counter to that mission. For example, a social performance audit would check to make sure that the MFI's loan collection practices are not coercive and that women are not being forced by male relatives to take out loans for their benefit.

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Annex A: Summary Statistics and Regression Results

Table A1. Variables and Summary Statistics

Variable	Definition	Mean	Standard deviation	Minimum value	Maximum value
Portfolio yield	Financial revenue as a share of average gross loan portfolio	36.0	17.9	0.5	95.0
Operating expense ratio	Operating expense as a share of average gross loan portfolio	24.0	22.7	2.7	122
Age	Age of institution in years	14.4	7.9	1	44
Percent of women clients	No. of female clients as a share of number of active clients	60.2	17.8	25.8	99.5
Operational self-sufficiency	Financial revenue as a share of the sum of financial expense, loan loss provision expense, and operating expense	110.1	31.5	2.6	184.1
Profit margin	Net operating income as a share of financial revenue	19.2	34.3	-88.0	112.7
Cost of funds	Financial expense as a share of average gross loan portfolio	8.6	5.4	0.02	25.2
Portfolio at risk > 30	Loans past due more than 30 days as a share of gross loan portfolio	4.1	4.6	0	33.8
Competition	Institutional development variable from Economist Intelligence Unit (2008) (composite measure of range of MFI services, credit bureaus, and level of competition)	61.9	20.2	16.7	83.3
Average loan size	Gross loan portfolio divided by number of loans	1,560.7	1,054.6	164.36	5,743.2
Borrowers	No. of borrowers	73,044	154,109	130	1,155,850

Source: Authors' dataset.
Note: The number of observations for all variables is 112.

Table A2. Results of Regressions Explaining Portfolio Yield (Model 1)

Independent variable	Estimated coefficient
Logarithm of institutional age	-0.1520444
	(−2.69)***
Logarithm of operating expense ratio	0.2474923
	(4.58)***
Logarithm of percent women clients	0.0151848
	(0.10)
Operational self-sufficiency	0.0045703
	(4.20)***
Profit margin	-0.0005983
	(-0.67)
Cost of funds	0.0127781
	(1.99)**
Portfolio at risk > 30	-0.0075399
	(-1.07)
Competition	-0.007191
	(−3.56)***
Average loan size	0.0291656
	(0.55)
Constant	2.825738
	(3.32)***
Observations	83
***R*-squared**	Within: 0.0790 Between: 0.8799 Overall: 0.7571

Source: Authors' regressions.
Note: The dependent variable is the logarithm of portfolio yield. Numbers in parentheses are z-statistics. Asterisks indicate statistical significance at the *10 percent, **5 percent, and *** 1 percent level; no asterisk means the coefficient is not statistically significantly different from zero.

Table A3. Results of Regressions Explaining Operating Expense Ratio (Model 2)

Independent variable	Estimated coefficient
Logarithm of institutional age	-0.0642925
	(−.48)
Logarithm of percent women clients	0.5362085
	(1.91)*
Operational self-sufficiency	-0.0048842
	(-2.08)**
Profit margin	-0.001683
	(-1.03)
Logarithm of no. of borrowers	0.1586199
	(2.94)***
Logarithm of average loan size	0.0490108
	(0.40)
Portfolio at risk > 30	.0140074
	(1.24)
Competition	-0.0135798
	(−3.26)***
Constant	0.3019781
	(0.17)
No. of observations	112
***R*-squared**	Within: 0.0466
	Between: 0.5870
	Overall: 0.4862

Source: Authors' regressions.
Note: The dependent variable is the logarithm of the operating expense ratio. Numbers in parentheses are *t*-statistics. Asterisks indicate statistical significance at the *10 percent, **5 percent, and ***1 percent level; no asterisk means the coefficient is not statistically significantly different from zero.

Annex B: Telephone Interview Questions for Microfinance Managers

Date:
Name of Institution:
Contact Person:
Contact information:

Qualitative Data: mostly from telephone interviews conducted after sending out questionnaires

1. We understand that it's difficult to differentiate between urban and rural, but we'd like to know how [organization name] makes that distinction and whether you keep track of the percentage of borrowers who are rural (clients outside large urban centers).
2. What interest rates, fees and terms does your organization currently charge on your microfinance loan products?
3. What are the main factors that cause the interest rates and fees to vary? (For example, do the rates vary for rural vs. urban clients? By loan size? Amount of time with the MFI, etc.?)
4. What policies and procedures does your organization have in place related to interest-rate setting? (Can you share anything written?)
5. What are the policies and procedures for assessing fees (e.g., application fee, loan origination fee, late payment fees, etc.)? (Can you share anything written? How flexible are these policies?)
6. How and how often does your organization review your interest rate and fee structure? What decisions has your organization made in response to those reviews in the past?
7. Who is involved in interest-rate and fee-setting decisions (board, senior management, branch managers, etc.)?
8. How does the cost of your organization's loans compare to that of the competition's loans?
9. What changes has your organization made to improve productivity or efficiency in the past few years? What were the results? (If improvements were made, were these passed on to clients through reductions in interest rates?)
10. What commitments does the MFI have to its shareholders (e.g., is a certain annual return expected, etc.)?
11. What are your provisioning and write-off policies? How do these compare to minimum legal requirements?
12. Are there any ways that the government or central bank influences your MFI's interest-rate setting? If so, how?
13. How does your organization ensure that clients can afford to repay the full cost of their loans?
14. How does your organization ensure that the clients understand the full cost of their loans?
15. How does your organization inform clients of changes in fees and interest rates?
16. Can you share any market research or point me to the person with whom I can talk about recent studies on what matters most to your clients (especially anything relevant to the cost of loans)?
17. Would your MFI be willing to have us visit and meet with some of your rural clients to get information on their realities and perspectives related to their loans?

Annex C: Survey Questionnaires

Inter-American Development Bank: Interest Rates in Latin America and the Caribbean

Background data:

1. Institution name:
2. Type of institution (bank, NBFI [nonbank financial institution], NGO, cooperative, credit union, etc.):
3. Country:
4. Name and title of person completing the survey:
5. Contact information (phone):
6. Contact information (email):

Quantitative data from the institution's audited financial statements for the past 4 years

Answers 7–18 expressed in $000s	2008	2007	2006	2005
Exchange rate				
7. Total assets				
8. Total outstanding portfolio (micro only)				
9. Total liabilities				
10. Total equity				
11. Total revenues				
12. Total financial income (interest and fee income)				
13. Total financial expense				
14. Total operating expenses: salaries, benefits, administrative costs				
15. Total provisions				
16. Losses on loans or bad debt expense				
17. Write-offs				
18. Total expenses				
19. Portfolio at risk 30 + days (percent)				
20. Portfolio at risk 90 + days (percent)				
21.Percent of women clients				
22. Percent of rural clients				
23. Total number of loans outstanding				
24. Total number of borrowers				
25. Number of savers				
26. Total mobilization of savings ($000s)				
27. Total personnel				

Annex D: Client Field Interview Questionnaire

a) Demographic Information

1. Name:
2. Gender:
3. Age:
4. Address:
5. Branch:
6. Rural/urban/semi-urban:

b) Microenterprise Information

7. Describe business:
8. Is this the primary business of the household?
9. Annual revenues from business:
10. Annual expenses of business:
11. Net income from business:
12. Other sources of household income (annual revenue and expense of household):

c) Loan Information

13. Microfinance institution's name:
14. Amount of loan:
15. Loan product (with interest rate and term):
16. Use of loan:
17. What percentage of your capital needs is fulfilled by this loan?
18. What is your greatest cost/difficulty associated with borrowing (e.g., money spent on transport to reach MFI, clients lost because you are away from business, etc.):
19. Client's cost of receiving loan (in local currency):
20. Has the loan improved your and your family's quality of life?
21. Reason for borrowing from this particular MFI:
    a. Only one I know
    b. Ease of access
    c. Lowest cost (how?)
    d. Most relevant loan product
    e. Customer service
    f. Other
22. If you could change something about this loan, what would it be?
23. What would you like the government to do for you to increase and ease access to financial services?
24. Do you have any other loans from other microfinance institutions, local money lenders, family and friends, etc.? If yes, what are the loan size, term, interest rate and purpose?
25. Is there anything else you would like to add about your experience with accessing financial services?