Shedding Light on Microfinance Equity Valuation: Past and Present

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Executive Summary

This report is the result of a collaboration between CGAP and J.P. Morgan. CGAP is solely responsible for the printing and distribution of this Occasional Paper. CGAP is not affiliated with J.P. Morgan. Our objective is to provide benchmarks for valuation of microfinance equity, both private and publicly listed. Our analysis is based on two datasets: a sample of 144 private equity transactions, which represents the largest such dataset gathered to date, and data on 10 publicly traded microfinance institutions (MFIs) and low-income consumer lenders.[1]

MFIs will certainly be affected by the financial crisis ricocheting across the globe, but we believe that the sector is fundamentally sound. Larger institutions, especially those with diversified funding sources, such as retail deposits, are best positioned to manage the effects of economic and financial contraction. Valuations may change, but we believe the long-term outlook for equity investment in microfinance is positive.

Private equity valuations for MFIs have varied widely over the past few years. Historical median valuations in our private sample have varied between 1.3x and 1.9x historical book, and between 7.2x and 7.9x historical earnings over the four-year period, as shown in Table 1 on the next page. The considerable range of these indicators may indicate the lack of market consensus on MFI valuation.

Publicly listed low-income finance institutions (LIFIs) have outperformed traditional banks. Since its cre-

ation in 2003, our Low-Income Finance Index has outperformed the Global MSCI World Financials index[2] by 238% (and has outperformed this benchmark by 8% since the Lehman bankruptcy in September 2008). LIFIs now trade slightly higher than traditional banks on price-to-book basis (1.9x 2008 book for LIFIs versus 1.5x for emerging banks as of January 28, 2009). On a 2009 price-to-earnings basis, LIFIs are trading at a 22% discount to traditional banks, as shown in Table 2.

Investors should not value MFIs the same way they value traditional banks. We highlight five characteristics that differentiate MFIs from traditional banks, and justify a slightly different valuation approach: a double bottom line that aims for both social and financial returns, excellent asset quality, high net interest margins (NIMs), high operating costs, and longer term funding available from developmental investors.

Book value and earnings multiples are the most widely used valuation tools but we also recommend the residual income method. Relative value valuation methods, price-to-book, and, to a lesser extent, price-to-earnings multiples remain the most common valuation methods in microfinance equity. An absolute valuation method, the residual income method, would also be appropriate for MFIs because it combines the current book value with future earnings.

Microfinance valuations should benefit from a lower beta than banks in our view, but they also deserve a discount for the limited liquidity of the equity. Be-

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1   Because there are few publicly listed MFIs, we considered a group of 10 financial institutions targeting low-income individuals, and note that their business models are very diverse.

2   The MSCI World Financials Index is a free-float weighted equity index. It was developed with a base value of 100 as of December 31, 1998.

cause of the higher resilience of their business, MFIs' earnings are generally less volatile than traditional banks. At the same time, valuations merit a liquidity discount because of the small transaction size in the microfinance space. Unfortunately, no tools are available to quantify this discount.

Transaction value and net income growth are the main drivers of valuation, as evidenced by our sta-

tistical analysis. The following are eight other factors that we also view as important: (*i*) the type of buyer and its possible social motivation; (*ii*) the country of the MFI; (*iii*) the legal status of the MFI, in particular if it is a fully regulated bank; (*iv*) operating efficiency; (*v*) leverage; (*vi*) the reliance on retail deposits (financial intermediation); (*vii*) asset quality; and (*viii*) profitability (as measured by ROE).

Table 1. Private Transactions: Valuations Rebounded in 2008

Year	Historical P/E		Historical P/BV		Sample #
	Unweighted Average	Median	Unweighted Average	Median	
2005	9.1	7.9	1.6	1.7	28
2006	8.6	7.4	1.5	1.3	37
2007	9.9	7.2	2.5	1.3	37
Sept 2008	10.2	7.9	2.2	1.9	38

Source: CGAP, J.P. Morgan. Valuations rebounded in 2008 mostly due to the high multiples applied to a small number of transactions.

Table 2. Public Transactions: Low-Income Finance Institutions Exhibit Higher P/BV but Lower P/E Than Emerging Market Banks

	P/BV			P/E		
	07A	08E	09E	07A	08E	09E
Low-Income Finance Index	2.3	1.9	1.6	10.4	7.6	6.5
Emerging Markets Banks						
Latin America	2.0	1.9	1.9	8.8	8.6	8.6
Emerging Europe	0.9	1.0	0.9	4.4	5.0	6.4
Africa	1.4	1.2	1.3	6.8	7.2	6.9
Asia	NA	1.5	1.4	NA	8.5	8.7
Average Emerging Markets Banks	1.4	1.5	1.3	6.3	8.1	8.4

Source: Bloomberg, Company data, J.P. Morgan estimates. Prices as of January 28, 2009.

Notes for the Low-Income Finance Index: The Index is a market capitalization-weighted index that includes six financial institutions offering financial services to the lower income segments of the population, namely Bank Rakyat of Indonesia (BRI), Bank Danamon, Compartamos Banco, Financiera Independencia, IPF, and African Bank. We used J.P. Morgan estimates for the stocks covered by J.P. Morgan, and Bloomberg consensus estimates for IPF and Independencia. We reduced to a third the weight of BRI in the Index, as the bank's microfinance portfolio represents only about a third of its total loan book.

Notes for the Global Emerging Markets Banks: We show market capitalization-weighted averages of banks covered by J.P. Morgan analysts, representing a sample of 148 banks in all emerging markets.

Introduction

Equity investment in microfinance is small, but growing fast. As of December 2008, there were 24 specialized microfinance equity funds with total assets of US$1.5 billion under management. Institutional investors are also showing interest in this new market niche. Leading pension funds, such as TIAA CREF in the United States and ABP in Europe, have made microfinance equity allocations of over US$100 million as part of their socially responsible investment (SRI) strategies. Others are researching the field and waiting for clearer market conditions to invest. Venture capital companies such as Sequoia and a few large private equity funds such as Legatum[3] are testing the market with small equity investments in MFIs, with near-term potential for an initial public offering (IPO) in key emerging markets, like India.

While interest in microfinance equity investments soars, the actual microfinance equity market is still in its infancy. Primary issuances are still limited by the small pool of investable MFIs and by the absence of an organized secondary market. A vast majority of transactions are in the form of private placements. To date, only two pure microfinance IPOs have taken place (Compartamos in Mexico and Equity Bank in Kenya), and current market conditions are not favorable to new ones.

The scarcity of information on microfinance valuation is a major challenge to establishing microfinance equity as an investment niche. Investors and MFIs are looking for reliable and accessible market references to improve equity pricing. However, little research has been done on microfinance equity valuation, due to the difficulty in accessing private data.[4]

This paper is an attempt to offer some useful benchmarks to investors, microfinance managers, and analysts and to help build market transparency.

As we write this paper, we are caught up in an unprecedented financial crisis and a truly global economic contraction. Liquidity shortages, currency dislocations, and global recession will all affect MFIs and their clients in different ways.[5] The impact of the crisis should become clearer over the course of 2009. In the short run, we expect to see higher costs of funding due to tighter credit and to weaker emerging markets currencies relative to dollar denominated loans. In the medium term we can foresee slower growth and lower earnings power.

MFIs will have to seek funding from public agencies and development finance institutions (DFIs) to maintain their liquidity as commercial funders withdraw. They will need to strengthen their asset and liability management capabilities and be ever more vigilant about credit standards to maintain their outstanding asset quality. The crisis may force some consolidation in the sector, and it will almost certainly put pressure on valuations. We anticipate no new listings in the short term. As for valuations, we expect multiples of private transactions to drop toward 1x book value in 2009 from a median of 1.9x in 2008. However, the strong fundamentals of the microfinance industry and the commitment of public and private investors should bolster pricing going forward. MFIs with a solid funding base and strong asset quality should emerge stronger from this turbulence, and we can expect valuations to bounce back in 2010.

Our ambition is to provide a benchmark for valuation. In this paper, we intend to address some of the key questions facing microfinance investors and MFIs: What is unique about the microfinance sector that may justify an original valuation approach? What are the valuation methodologies used? What are the key valuation drivers for private placement in microfinance? What is the performance of microfinance on the private and public markets, in both absolute and relative terms? What are the challenges ahead for this new market niche in the context of the financial crisis?

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3   Sequoia invested US$11.5 million in SKS, a leading Indian MFI, and Legatum invested in Share, another microfinance leader in India.
4   Barclay O'Brien, *Valuing Microfinance Institutions,* Savings and Development, Quaterly Review Issue 3-2006, Milan.
5   See CGAP Virtual Conference: "Microfinance and the Financial Crisis," November 18–20, 2008.

This paper consists of four parts. In the first part, we underline what makes MFIs different from traditional banks. We then describe commonly used valuation methods and their applications in the context of MFIs. In a third part, we look at data from our sample of 144 private transactions and discuss the key determinants of valuation. Finally, we look at the performance of publicly listed low-income finance institutions and analyze the impact of listing on the franchise performance.

This report is the result of the collaboration between CGAP and J.P. Morgan. CGAP is bringing its deep microfinance market knowledge and J.P. Morgan its equity research skills and emerging markets expertise.

Table 3. Our Sample Represents the Largest Available Dataset to Date

	Transactions (#)	Transactions (US$)
2005	28	107,969,182
2006	37	19,905,978
2007	37	61,440,959
2008	38	103,893,011
NR	4	3,307,321
Total	144	296,516,451

Source: CGAP. NR: not relevant.

Methodology & Sample for the Study

Our analysis is based on two original samples: a private transaction dataset on the performance of 60 MFIs and a sample of 10 publicly traded low-income finance institutions (LIFIs):

Data on private equity transactions were collected by CGAP in a strictly confidential survey conducted in summer 2008. Four development finance institutions (DFIs), 13 microfinance investment vehicles (MIVs), and 14 MFIs provided data on their transactions from 2005 to September 2008. Some of the survey participants are acknowledged in Appendix III. The sample consists of 144 equity transactions, with 60 MFIs in 36 different countries. This is the most comprehensive dataset on private equity placements in microfinance to date. We estimate that it represents close to 50% of primary transactions and 70% of secondary transactions over the 2005–2008 period. CGAP followed strict procedures to ensure full confidentiality of the data reported. This includes confidentiality agreements with all survey participants and restricted access policies to the database. Only four CGAP staff authorized by CGAP's

CEO had access to the underlying data. CGAP was responsible for quality control of the data and preliminary analysis. Only aggregated benchmarks based on at least five data points were shared with J.P. Morgan. These aggregated data are available on CGAP's Web site, at www.cgap.org. J.P. Morgan had no access to the underlying database.

The sample of publicly traded LIFIs was put together by J.P. Morgan analysts.[6] We identified 10 listed LIFIs with a broad microfinance focus. They include two publicly listed MFIs (Compartamos and Equity), four banks with an emphasis on small- and medium-sized enterprises (SMEs) and microenterprise lending, and four consumer lenders. We recognize that these institutions present a different risk and return profile for investors than traditional MFIs. They do not necessarily have an explicit social agenda, and their loan portfolio is less concentrated on microenterprise lending and more exposed to economic shocks. However, these institutions provide interesting valuation comparables for MFIs because they operate in the same market.

6   CGAP, *Microfinance Investment Vehicles (MIV) Disclosure Guidelines for Reporting on Performance Indicators - Microfinance Consensus Guidelines,* 2007, http://www.cgap.org/gm/document1.9.3140/MIV%20Disclosure%20Guidelines%202007.pdf

Microfinance Equity Market

As of 2007, there were 397 banks and nonbank financial institutions reporting to MIX—the reference database for microfinance performance—with an aggregate equity base of roughly US$5.2 billion. Eighty-five percent of the equity investment is concentrated in the largest 100 MFIs. Eastern Europe and Latin America account for almost two-thirds of the microfinance equity. New share issuance is also increasing rapidly and passed the US$1 billion milestone in 2007.[7]

MFIs have built an impressive track record, and their financial performance has been documented by MIX since 1995. In 2007, the average asset size of microfinance banks grew by a notable 40%.[8] Returns are solid with a median ROE of 14.1% in 2007. Asset quality remains high, with a median portfolio at risk over 30 days (PAR30) of merely 1.4%. However, MFIs are being affected by the global crisis, and the performance of the microfinance industry is likely to deteriorate in 2009.

On the funding side, DFIs such as IFC, KfW, and EBRD have been early equity investors in microfinance. Their aggregate microfinance equity portfolio was valued at US$900 million as of 2007 and growing very fast. The second group of investors consists of 24 specialized funds with an equity focus, private equity funds, or holding companies of microfinance banks. These funds are still relatively small in size, but growing very rapidly. Their total assets under management were estimated at US$1.5 billion in December 2008.[9]

Since 2007, large private equity firms, such as Sequoia and Legatum,[10] have made equity investments in select microfinance markets such as India. We estimate that the total amount invested by these institutions is in excess of US$200 million. Finally, leading pension funds with an SRI focus are making asset allocations in specialized microfinance equity funds.

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7   According to Adrian Gonzalez; analysis based on MIX 2007 data.
8   Adrian Gonzalez et al., MIX, based on microfinance banks reporting to MIX in 2007.
9   Based on CGAP MIV survey 2008 and CGAP estimates for growth projection in 2008.
10 *Blackstone, Carlyle eye microfinance firms,* The Economic Times, India, October 12, 2007.

1. Microfinance versus Traditional Banking

Do MFIs deserve a premium over traditional banks? In this section, we assess the key differences and similarities between mainstream banks and MFIs from a financial analysis perspective.

What Makes Microfinance Financials Different?

Mainstream financial ratios and other factors used in analyzing banks remain relevant when looking at MFIs. However, we believe MFIs are a unique type of financial institution because of their business model and clients. In this chapter, we introduce five major characteristics of microfinance that differentiate MFIs from traditional banks, which are summarized in Table 4.

A. Double Bottom Line

Most MFIs emphasize both their financial profitability and their social impact. The emphasis on this double bottom line varies greatly among MFIs. However, it is a unifying feature of MFIs to recognize the positive benefits that access to financial services brings to clients and the need for responsible lending practices.

A double bottom line helps MFIs attract soft lending and investments from public and socially responsible investors—a positive factor in the evaluation of risk.[11] However, from an equity perspective, a double bottom line justifies a discount to valuations. A socially motivated business may undertake less profitable activities to achieve its social goals, such as expanding to remote areas or working with

Table 4. Key Characteristics of MFIs

What is specific to microfinance?	Rationale	Key Indicator
1 Double bottom line	Most MFIs take pride in having a double bottom line (i.e., both financial and social). The level of emphasis on the social mission varies among institutions.	Average loan balance per borrower as a % of GDP per capita Average cost per customer
2 High net interest margins	MFIs often have higher net interest margins than their mainstream peers, because of the higher rates they charge.	Net interest margins Intensity of competition in the country or region
3 Strong asset quality	The quality of the loan portfolio is a key driver of profitability and requires different ratios than traditional banks, because of the specific nature of MFIs' loans.	Past due loans over 30 days + renegotiated loans divided by gross loan portfolio Write-off ratio
4 High operating cost ratio	The relative smaller size and shorter maturity of loans drives transaction costs higher for MFIs.	Cost per borrower Operating expenses to assets
5 Longer term funding	Leverage of mature MFIs is only slightly lower than that of traditional banks. The main difference is in the liquidity position: MFIs have a favorable asset/liability maturity gap (average maturity of liabilities is larger than the average maturity of assets). Because of their social agenda, MFIs are able to attract long-term funding from public institutions and SRI investors	Duration of liabilities and assets Public funding /Total liabilities Debt/equity

Source: CGAP, J.P. Morgan.

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11 The association of European SRI investors estimated the size of the World SRI market at Eur4.9 billion in 2007 (Eurosif SRI study 2008).

clients who require training before they can become customers. These efforts may be reflected in a higher cost structure for the business, although in some cases, this may also be rewarded with higher yields.

B. High Net Interest Margins Driven by High Lending Rates

MFIs have much higher NIMs[12] than commercial banks in emerging markets. This is because of the relatively high interest rates charged to microfinance clients and limited competition for their business. In 2006, the average worldwide microfinance lending rate stood at 24.8%. We believe that there are three main reasons to justify the level of interest rates in microfinance:

1. **The financial explanation: higher costs (especially operating costs) justify higher rates.** Microlending incurs relatively higher costs than traditional lending, with higher personal and administrative expenses because of the location of clients, small transaction size, and frequent interaction with MFI staff.

2. **The microeconomic explanation: microenterprises are profitable.** Microenterprises have the potential to generate high returns, which enables clients to pay higher interest rates to MFIs.[13]

3. **The macroeconomic explanation: limited competition.** Despite the rapid growth of microfinance in most markets, there are still relatively few financial institutions that serve low-income people, and competition on lending rates is limited.

Additionally, the sector lacks some clear standards for the disclosure of interest rates charged to clients. For example, some MFIs express their interest rate as a flat rate using the beginning balance of the loan. Common disclosures would likely benefit both clients and investors.

Effects of the crisis on NIMs

The financial crisis is having a significant effect on MFI NIMs. MFIs report increased liquidity pressures to CGAP and funding cost increases between 200 basis points (bps) to 500 bps since September 2008, because of tighter credit conditions in the local interbank market and from foreign lenders.[14] To preserve their margins, MFIs are increasing their lending rates, but some are experiencing difficulties in passing the full cost increase onto their clients. These measures are unpopular in the context of the economic downturn and may conflict with the MFI's social agenda.

Figure 1. NIMs Are Higher for MFIs, as of 2007
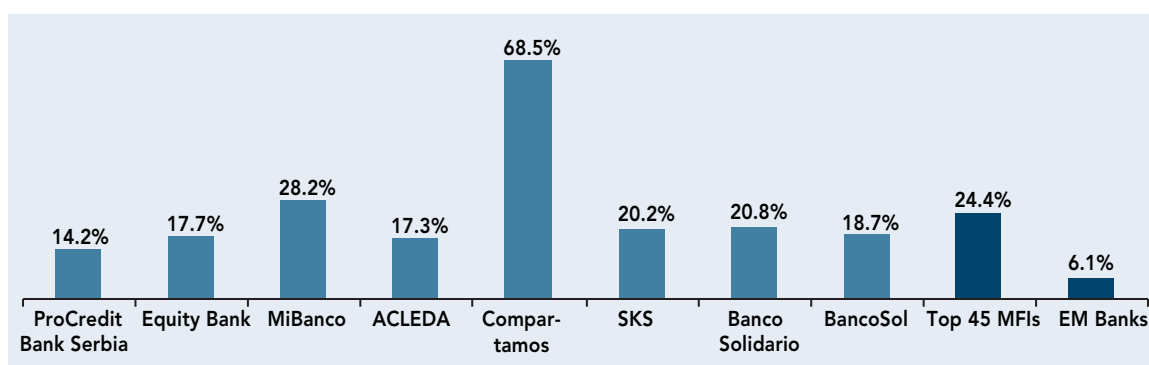
Source: Mix Market, 2007 when available. NIM is the net interest income divided by average total assets (defined as the financial revenue ratio on the MIX Web site). Under the TOP 45 MFIs, we show the unweighted average for all the MFIs with total assets above US$150 million (according to MIX, as of 2007). EM Banks include a cross-section of banks covered by J.P. Morgan analysts for emerging markets (except Asia).

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12 The median NIM for MFIs reporting to the MicroBanking Bulletin is 22%, while the average for emerging markets banks covered by J.P. Morgan analysts (Asia was not included) stands at approximately 6%.
13 Research in India, Kenya, and the Philippines found that the average annual return on investments in microenterprises ranged from 117 to 847%. Helms and Reille, "Interest Rate Ceilings and Microfinance: The Story So Far," CGAP, 2004.
14 In early 2008, most foreign lender under priced country risks (see Reille and Forster, *Focus Note 25*, CGAP).

Not all MFIs will be affected by credit scarcity. MFIs with a large share of demand and savings deposits depend less on bank borrowing. Also, MFIs with access to government funding or concessional funding from development investors should fare better and maintain comfortable NIMs.

C. High Asset Quality Is Driven by Original Collection Method

Historically, MFIs have had stronger asset quality than mainstream banks in emerging markets. MFIs have developed original lending technologies. These include good knowledge of customers, supported by frequent visits to clients' businesses; nontraditional guarantees, such as group guarantees; and excellent information systems that track arrears weekly or even daily. MFIs also have strong incentives for performance: clients who repay loans can build a good credit history and get access to larger loans and better terms. MFI loan officers also have strong financial incentives to ensure repayment, because the variable part of their salaries depend on portfolio quality. All these factors translate into high asset quality. Over the past 10 years, MFIs reporting to the MicroBank-

ing Bulletin have demonstrated high asset quality, with an average portfolio at risk over 30 days (PAR30) consistently below 4%.[15]

PAR30 shows the value of all loans outstanding (principal and interest) that have one payment past due for more than 30 days. It is important to look at PAR30 in conjunction with the write-off ratio, to ensure that the MFI is not maintaining a low PAR30 by writing off delinquent loans.

Effect of the crisis on asset quality

As of January 2009, the effect of the current financial crisis on asset quality is not yet apparent. Microlending has proven to be resilient to economic shocks in the past, such as during financial crises in East Asia and Latin America. This is because microfinance customers tend to operate in the informal sector and to be less integrated into the global economy. They also often provide essential products, such as food or basic services, that remain in high demand even in times of crisis. However, the current financial crisis and the triple effect of economic downturn, fall in remittances, and higher food prices have not been experienced before. It may well translate into lower asset quality for MFIs.

Figure 2. PAR30, as of 2007: Solid Asset Quality
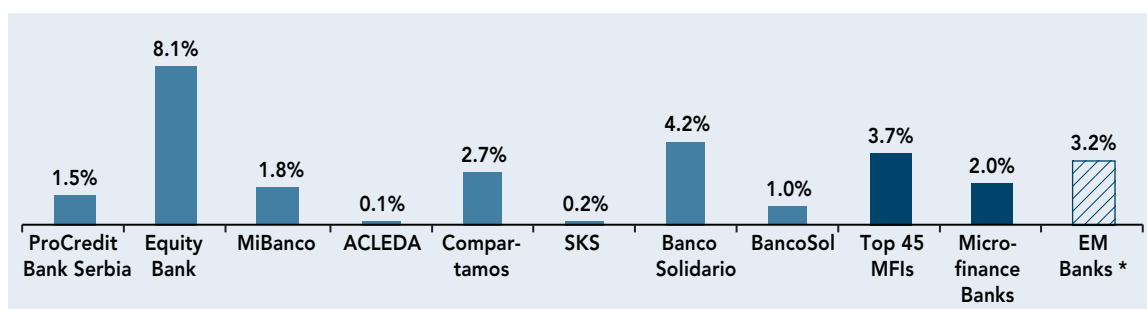
Source: Mix Market. J.P. Morgan. Data as of 2007.

Sample of 10 largest MFIs focusing on loans to microentrepreneurs. BRI and Grameen Bank, respectively the largest and 3rd largest MFIs in the world according to MIX, are not included in our sample, because PAR information is not available. Under the Top 45 MFIs, we show the unweighted average for all the MFIs with total assets above US$150 million (according to MIX, as of 2007). Data for Microfinance Banks are an unweighted average for all microfinance banks, according to MIX. EM Banks include a cross-section of banks covered by J.P. Morgan analysts for emerging markets (except Asia).

* For EM Banks, we show the ratio of nonperforming loans to total loans, which typically shows the ratio of loans that are 90 days past due. Therefore the ratio for banks is not directly comparable with PAR30, but gives an indication of relative asset quality.

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15 Because of the short maturity of the loan (often less than one year) and frequent installments for repayment (often weekly), we look at loans that are past due after 30 days, as opposed to 60 or 90 days, which is common for traditional banks.

Well-managed MFIs that have a conservative credit policy and a focus on microenterprise lending should remain resilient. MFIs with weak credit standards and large exposure to small and medium-sized enterprises (SMEs), housing, and consumer lending are likely to be affected the most.

D. High Operating Costs Are Driven by Small Transactions

The costs of providing microcredit are high because of the small size of loans, the location of clients, and the high level of interaction clients have with MFI staff. Efficiency is a key concern because MFIs require much more staff and administrative efforts per dollar lent than mainstream banks. As can been seen in Figure 3, MFIs exhibit much higher operating costs than mainstream banks.

However, the cost structure of MFIs tends to improve over time as a result of economies of scale, better loan technology, and an increase in the average loan size. Competition also can put pressure on MFI margins and drive efficiency improvements.

In terms of indicators, the ratios of operating expenses to total assets or operating expenses to total loans appear to be the most relevant. Other popular measures are the cost per borrower (Operating Expenses / Average Number of Active Borrowers), staff productivity (Number of Active Borrowers / Total Staff), and the loan officer productivity (Number of Active Borrowers / Number of Loan Officers).

Effect of the crisis on operating costs
MFIs have seen their operating costs increase in the first half of 2008 as a result of inflation and higher input costs. Staff costs and transportation costs have been affected the most, with a spike of over 30% reported in Latin American countries. In 2009, we expect inflation to return to lower levels, thus reducing the pressure on wage increases and transportation costs. However, operational efficiency, as measured by operating expenses to loans, may decrease as a result of slow or even negative growth in the microfinance portfolio. MFI staff productivity might also suffer as credit agents allocate more time to loan monitoring and collection.

Figure 3. Operating Expense to Gross Loan Portfolio Is Higher for MFIs Than for Traditional Banks, as of 2007
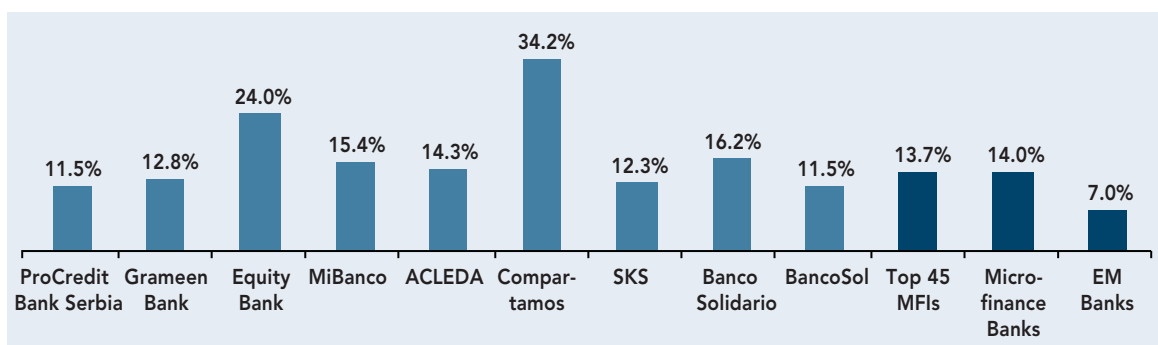
Source: MIX, J.P. Morgan. Data as of 2007. For ProCredit, the percentage indicates operating expenses to total assets. Averages for the top 45 and for EM Banks are unweighted. EM Banks include a cross-section of banks covered by J.P. Morgan analysts for emerging markets (except Asia). Data for microfinance banks are an unweighted average for all microfinance banks, according to MIX.

E. Longer Term Funding

In some markets, the credit squeeze is affecting MFIs by making funds more difficult to obtain, more costly, and available in shorter maturity. Therefore, in our analysis, we paid special attention to the liabilities side of MFIs' balance sheets: equity, deposits, and other funding. Microfinance exhibits three major differences vis-à-vis traditional banks.

MFIs have overall lower leverage than traditional banks

Overall, MFIs tend to have lower leverage (measured as total equity to assets) than traditional banks. Our unweighted average leverage for the 45 largest MFIs (with assets above US$150 million) stands at 19%, significantly lower than the J.P. Morgan emerging markets benchmarks.[16]

However, leverage is increasing over time, and large and older MFIs are reaching equity leverage levels comparable to traditional banks, as shown in Figure 5.

Figure 4. Breakdown of Funding for Microfinance Banks
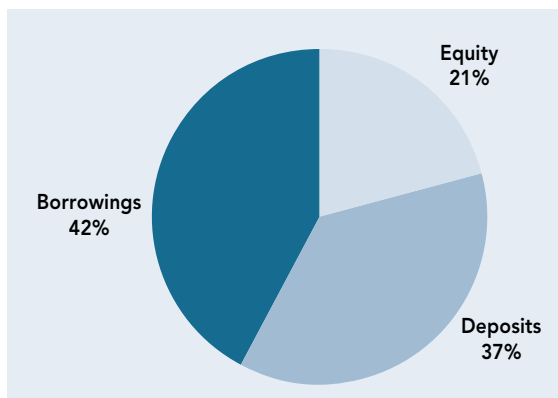
Source: MicroBanking Bulletin data for all banks (2007). Deposits comprise demand, savings, time deposits, and deposits from banks.

Deposits are not necessarily a more stable and less expensive source of funding

The cost of funding through retail deposits (in particular, demand deposits, which typically are not remunerated) is not necessarily cheaper than other funding sources. This is because capturing and serv-

Figure 5. The Largest MFIs Have Similar Leverage to Traditional Banks. However, on Average, the Equity-to-Assets Ratio Is Lower at Banks, as of 2007
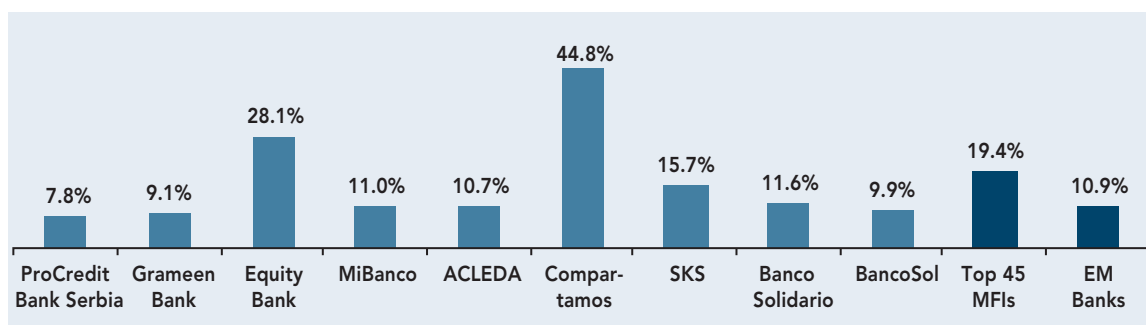
Source: Mix Market. Leverage information for BRI is not available. Sample of 10 largest MFIs focusing on loans to microentrepreneurs. Data for BRI are not available. We also show the average for all the MFIs with total assets above US$150 million (according to Mix, as of 2007). For this extended sample of the 45 largest MFIs, we use the broad definition of microfinance. Averages for the top 45 and for EM banks are unweighted. EM banks include a cross-section of banks covered by J.P. Morgan analysts for emerging markets (except Asia).

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16 Those benchmarks represent a wide selection of banks covered by J.P. Morgan analysts across emerging markets (except Asia).

icing small deposits is costly and requires a more expensive physical infrastructure.

As with traditional banks, some types of MFIs' deposits are less stable than others. Large institutional deposits and interbank deposits can move quickly, whereas retail deposits (both demand and savings) tend to be more stable.

Borrowings: Key feature is longer maturity

Because of their social agenda, MFIs are able to attract longer term funding from public agencies, microfinance specialized funds, and development institutions.[17] This provides MFIs with a favorable tenor mismatch between liabilities (longer tenor) and assets (typically less than a year).

Effect of the crisis on the liquidity position of MFIs

Large MFIs should not face a major liquidity squeeze in 2009 because of their favorable maturity gap and access to emergency liquidity facilities of public investors and governments funds, such as IFC, KfW, and IDB. However, most of this foreign investment is in hard currency, leaving MFIs with large and often unhedged foreign exchange exposure. MFIs exposed to hard currency debts have already suffered severe exchange losses since September 2008 as a result of the depreciation of emerging markets currencies vis-à-vis the U.S. dollar. Unhedged currency exposure will likely be a key theme for MFIs in 2009.

Overall, we think MFIs with access to public funds, and with a strong retail savings base and covered foreign exchange risk exposure, will better weather the current financial crisis.

There are five major characteristics that differentiate MFIs from traditional banks. But the question remains, do MFIs deserve a premium or discount over banks? There are both pros (higher NIMs, higher growth outlook, access to long-term funding from developmental investors, and higher resilience in economic downturn) and cons (social agenda, small size, lower efficiency, and reputation risks of lending to the poor). A premium or discount should be evaluated case by case, based on the MFI characteristics and market environment.

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17 The average maturity of loans from microfinance investment funds is 36 months, and the average maturity of loans from DFIs is 60 months. CGAP MIV Survey, 2008.

2. Technical Overview of Valuation Methods

This section addresses commonly used approaches to equity valuation. The three most widely used valuation techniques involve two types of multiples and future cash flows. Multiples can be based on historical values (trailing multiple) or future estimates (forward multiple) of prior transactions of the same institutions or comparables transactions at other institutions.

Table 5 summarizes four approaches and highlights their relative advantages and limitations. Investors tend to rely on both absolute and relative valuation methods. We recommend residual income analysis as a sound absolute valuation method; we also advise investors to cross-check valuation with multiples of

Table 5. Summary of Pros and Cons of Commonly Used Valuation Methods

Method	Pros	Cons
Multiple: Price to Book	• Simple and most widely used in the industry • Book value being a positive number, P/BV is always meaningful • Looking at multiples is an alternative way to address the issue of premium / discount	• Comparison with other transactions is difficult because of differences in context, accounting standards, tax treatment, and different leverage of the institutions (no true comparable) • Book value does not indicate future earnings power of the institution • Book value could be subject to impairments • Multiples comparison is subject to market exuberance (bubbles)
Multiple: Price to Earnings	• Simple and widely used in the industry • Looking at multiples is an alternative way to address the issue of premium / discount	• Comparison with other transactions is difficult because of differences in context, accounting standards, and tax treatment (no true comparable) • Cannot be used if earnings are negative; mostly used in the case of a stable and predictable earnings stream • Historical earnings do not indicate future earnings power of the institution • Multiples comparison is subject to market exuberance (bubbles)
Discounted Cash Flow Analysis	• Detailed valuation method • Conceptually sound method, because investor should be willing to pay for the present value of future cash flows	• Not appropriate for young MFIs, for which future assumptions may be unrealistic • Valuation is very sensitive to terminal value and discount rate used in the valuation, which by nature are subject to error • Not the best method in the case of minority shareholders, because only majority shareholders can decide the use of future cash flows
Residual Income	• Detailed valuation method • Conceptually sound method, because it adds the present value of expected future residual income to the current book value • Conceptually sound method, because it includes a charge for equity capital • Terminal value represents a smaller portion of total valuation, if compared with discounted cash flow method • Appropriate for young MFIs that may have no earnings in the short term	• Valuation is very sensitive to discount rate • Not appropriate if the capital structure of the MFI is expected to change significantly

Source: J.P. Morgan.

comparable transactions and companies, which stand for the relative approach.

Relative Valuation: P/BV Multiple

The price-to-book value (P/BV) multiple is the ratio of the market price per share to the book value per share of the company. To find book value, we subtract total assets from total liabilities. Since we are looking for the value of common stock only, we also subtract the value of preferred stock. Book value, being a balance sheet item, is cumulative in nature (unlike earnings per share, which is a flow item) and represents the investment of shareholders in the firm over time. The driver of P/BV is the return on equity (ROE) of the institution.

Finance companies typically hold a large share of relatively liquid assets, making P/BV a widely used and relevant valuation measure for the financial services industry. Book value is meant to reflect the net market value of assets. For nonfinancial firms, the balance sheet often reflects historical values for assets. In the case of financial institutions, book value is also referred to as net asset value (NAV).

One of the main limitations of this ratio is that book value ignores some assets that may be critical to the company, such as the value of human capital. In most cases, MFIs tend to have little to no intangible assets or goodwill. However, investors should look at write-off policies (which vary among MFIs) and unhedged foreign exchange exposures to adjust book values, because those two items can significantly impair capital.

The P/BV multiple is by far the most commonly used methodology in microfinance.

Relative Valuation: P/E Multiple

The P/E multiple is the ratio of the market price per share to the earnings per share (EPS) of the company.

Two types of P/E measures are commonly used: the trailing P/E and the forward P/E. The trailing P/E compares the current market price to the EPS of the four most recent quarters of the company. This measure is commonly quoted in newspapers. The forward P/E compares the current market price of the stock to an estimate of future EPS. The driver of the P/E multiple is the estimated EPS growth of the institution.

The main advantage of the P/E multiple is that earnings power (EPS) is the chief focus of analysts and investors. As such, it is widely used and recognized.

The main limitations of the P/E multiple rest in the fact that earnings can be volatile, or even negative, in which case P/E becomes meaningless. This is particularly true for young MFIs. Also, companies can have different accounting rules, which make intertemporal and intercompany comparisons difficult. In particular, different provisioning policies for loan losses and tax credits may have a significant effect on the net income reported by the company. As in the case of book value, analysts are expected to adjust net income figures for variation in accounting policies to reflect the actual earnings power of the company.

A key point to keep in mind with the P/E multiple is the potential dilution of earnings caused by the conversion of options, warrants, and convertible bonds to common stock.

Absolute Valuation: Discounting Future Flows

Defining future earnings flows and discounting them to the present is another common valuation method. The main advantage of this valuation method is that it is more detailed than the multiples analysis. It requires the analysis to make explicit company revenue forecasts over a number of years (most often, forecasts are for 5–10 years). On the other hand, because it is so detailed, it is also a complex methodology

that requires understanding assumptions underlying projections of revenues.

The discounted cash flow (DCF) valuation is appropriate for young MFIs that are growing rapidly. In our private transactions study, the DCF method was used by less than 10% of respondents, while all investors reported using P/BV multiples and most also used P/E multiples.

Different types of earnings flows can be discounted. These depend on the definition of cash flows chosen. The purpose of this method is to define the earnings power of a company and therefore the amount of cash it will generate for investors. Some analysts may choose dividends as a good proxy for cash, while others may look at free cash flow to the firm (FCFF), free cash flow to equity investors (FCFE) described below, or residual income (described below). At the end of the explicit forecast period, a terminal value is calculated assuming a constant growth rate for earnings into the indefinite future. Once defined, those future cash flows are discounted to the present using a discounting factor—in effect, these various calculation approaches find the present value of a future stream of cash.

The difficulty of DCF valuations lies in their dependence on two inputs: (*i*) the terminal growth rate of earnings and (*ii*) the discount rate used (the cost of equity). An important limitation of DCF valuations is that a sizeable part of the final value of equity comes from the terminal value, and this terminal value is very sensitive to changes in those two assumptions. Changes to these estimates lead to large variations in the price calculated.

For MFIs, the most appropriate DCF methods are the FCFE model and the residual income analysis. Dividend discount models are more relevant for stable and mature financial institutions that have a defined dividend policy.

FCFE
FCFE starts with the cash flows available to equity holders in the firm. It consists of the sum of the operational cash flow (net income plus any noncash items, such as provisions), the investing cash flow, and the financing cash flow. Because they represent the cash available to equity holders only, they are discounted at the cost of equity.

Residual income analysis
Unlike the pure DCF techniques, which forecast future cash flow values and discount them back to the present, the residual income model is a hybrid that starts with the current book value and adds the present value of expected future residual income. Residual income is the difference between net income and the opportunity cost to shareholders to invest in the MFI's equity (calculated as the cost of equity multiplied by book value). The main advantage of this method over pure DCF is that the terminal value represents a smaller part of the total valuation.

It is particularly useful in situations where the firm is either not paying dividends or is paying them in an irregular pattern. Also, for young, growing MFIs that will start generating a positive free cash flow only in the future, it is easier to use the current book value as a base for valuation. However, the method may not be appropriate for companies that will see their capital structure change dramatically, in particular in the case of an MFI that increases its leverage or is expected to make acquisitions.

Remarks on the Cost of Equity

The cost of equity (COE) is the return that the providers of equity capital expect in return for their funds. The most commonly used method of finding

COE is the capital asset pricing model (CAPM), where COE is the sum of the risk-free rate (rf) and a premium for bearing the stock's risk. This premium is the product of the stock's beta (β) (sensitivity of the stock price to changes in the market return) and the market risk premium (MRP), which is the expected market return over the risk-free rate.

$$COE = rf + \beta * MRP$$

The risk-free rate is calculated as the yield on long-term government bonds. Investors commonly use the 10-year U.S. government bond as a proxy for the risk-free rate and add to it a country risk. MRP is the expected return of the market (in this case, the equity market) over the risk-free rate on the long run. We follow convention and consider an MRP of 5%, on average. Following a historical approach, the analysis suggests that the equity risk premium gravitates around 5–7%.[18]

Remarks on beta *and Diversification Effect*
The main unknown in this CAPM equation is therefore β. As already noted, beta represents the sensitivity of the stock price to changes in a specific equity market. A beta of 0.9 indicates that the stock price of the company moves by 0.9 when the benchmark index moves by 1. This suggests that adding a stock with lower beta could help minimize the overall volatility of a portfolio.

We believe that in the long run, MFIs should have a lower beta than traditional financial institutions and therefore should offer diversification benefits to portfolio managers. We see three main reasons to support our assumption on the counter cyclicality of MFIs:

1. **MFIs have original risk management techniques.** The following characteristics of microfinance can be seen as effective risk management techniques: disburse small loans, shorten maturities, keep a large client base, maintain intimate/direct knowledge of customer, use dynamic incentives by conditioning new loans on full repayment of a previous ones, require borrowers to deposit a percentage of the loan at a bank, and sometimes rely on peer group knowledge of a borrower's repayment capacity and social pressure for repayment. Based on historical delinquency data, it seems that these techniques more than compensate for the absence of collateral.

2. **Their client base operates in safer sectors.** Microfinance customers tend to operate in the informal sector and be less integrated into the formal economy. They provide small-ticket items and offer essential products, such as food or clothing. Because they serve the needs of their close community, microborrowers are also less dependent on imports and currency fluctuations.

3. **MFIs' funding tends to have a longer maturity than their assets.** As mentioned previously, we believe that MFIs, on average, have a favorable duration mismatch. The main reason for this is that they are able to attract lines of credit from public agencies, DFIs, and social investors, which tend to have long tenures.

Empirical evidence tends to suggest that MFIs fare relatively better than other financial institutions in the event of an economic recession, in particular for asset quality. The resilience of microfinance to economic shocks has been documented in numerous country case studies (including Indonesia, Bolivia, and Mexico).[19] In 2001, a U.S. deceleration affected the traditional banking sector in Mexico but had little effect on Compartamos' operations. Microfinance banks in Indonesia fared much better than mainstream banks during the 1999 crisis, in particular when looking at asset quality. Two recent econometric analyses also found no strong and statistically

18 Dimson, Marsh, and Staunton, *Triumph of the Optimists*, Princeton University Press, 2002.
19 Glenn D. Westley, Microfinance in the Caribbean: how to go further, Inter American Development Bank, 2005, Technical paper.

significant correlation between GDP growth and the financial performance of MFIs, although data availability is still too scarce to draw solid conclusions.[20]

At the same time, we recognize that MFIs are more exposed to regulatory risks. Change in banking regulations, such as caps on interest rates, can undermine the profitability of microfinance. MFIs lending to the poor with relative high interest rates also are exposed to political pressure and media scrutiny.

Overall, however, our view is that MFIs tend to present a lower operational risk than traditional banks, which in turn justifies a lower beta.

Remarks on Liquidity

Most investors in the microfinance space would reduce normal valuation by some liquidity (or illiquidity) discount, reflecting the absence of a liquid market for MFI shares. Based on our conversations with market participants, we believe that reasonable illiquidity discounts would range between 10% and 30% of the normal value of the MFI. The value of the discount would depend on a series of factors, such as the liquidity on the local stock exchange where the MFI would be traded, the percentage of free float, and shareholding structure.

Academic research has tried to apply concepts of option pricing to the problem of liquidity, by valuing liquidity in a similar way as an option to sell a share (put option).[21] We believe this approach is interesting conceptually, but gives limited empirical guidance to investors, because of the limitations of the model's assumptions.

Our view is that relative valuation methods (comparable transactions and companies) allow investors to go around the problem of liquidity discounts (and other discounts for that matter) and, therefore, should be used in conjunction with the absolute methods described above.

Valuation Methods Complement Each Other

In some cases (mostly for Indian MFIs), we came across more original valuation tools, such as multiples of price to loan book or price to number of clients. They remind us of multiples used to value Internet companies (before the bubble burst). The rationale behind those is that an MFI should be able to extract value from its loan book and each of its customers. However, we find those multiples of limited use, because investors have no benchmark to draw conclusions from them and eventually will want to look at current book value and future earnings power.

Valuation models based on an absolute approach (DCF, residual income) or on a comparative transaction approach are all useful frameworks. When the assumptions in the models are consistent, those different approaches should give similar values. In practice, it may not always be possible to forecast every variable with the same degree of accuracy.

In the case of a young, fast-growing MFI, the residual income model may prove more useful because projecting future cash flows could be difficult. For established MFIs with a stable earnings stream, the DCF model is more appropriate. As for most companies, looking at the multiples of comparable companies or comparable transactions in the past is an important and necessary cross-check in the valuation process.

20 Adrian Gonzalez, *Resilience of microfinance institutions to national macroeconomic events: an econometric analysis of MFI asset quality*, MIX discussion paper No 1, Washington DC, 2007; Nicholas Krauss and Walter I., *Can microfinance reduce portfolio volatility?* NYU Stern School of Business, Working paper, New York, 2008.

21 Dyl, Edward and George Jiang, "Valuing Illiquid Common Stock," Financial Analysts Journal, vol.64, Number 4, pp. 40–47.

3. Valuation of Private Equity Transactions—Microfinance Institutions

In this section, we analyze a sample of MFI private equity transactions. Our sample covers 144 transactions that occurred between January 2005 and September 2008 and with an aggregate value close to $300 million (see Table 6). As explained earlier, transaction data were collected and processed by CGAP, and communicated to J.P. Morgan in the form of aggregates. This was done to preserve the confidentiality of the underlying data and the anonymity of survey participants. CGAP tables with aggregated data on equity valuation are available on its Web site (www.cgap.org).[22]

Our analysis focuses on historical multiples (i.e., historical price to earnings and historical price to book value multiples, which are also called trailing multiples). Although forward multiples are also available, we consider our analysis more robust when based on past audited data rather than projected earning estimates.

We conducted a statistical analysis on the dataset and explored the influence of 16 variables on the valuation of MFIs. Although the dataset is limited, our analysis provides insights on market benchmarks for private equity transactions and valuation drivers.

Valuation Between 1.3 and 1.9x Historical Book; 7.2 and 7.9x Historical Earnings

The median P/BV multiples over the past four years ranged between 1.3x and 1.9x for P/BV, and between 7.2x and 7.9x for P/E. As Table 7 shows, these multiples dropped in 2006 and 2007, but recovered in 2008. The peak in 2008 might be explained by the relatively strong fundraising by microfinance funds in 2007 and a shift from debt to equity. The large pool of investible funds applied to a relatively small number of transactions that drove up valuation multiples.

Our analysis is based primarily on median multiples (P/BV and P/E) to compensate for the effects of outliers, but we also present unweighted averages (see Table 7). Table 8 breaks down median historical multiples by region.

The data were collected during summer 2008 (i.e., before the credit crisis hit the financial markets). Our historical multiples are based on the latest book value or the latest 12-month earnings available for the MFI.[23] We recognize that earnings and book value can be distorted by different treatments of taxes and provisions across MFIs.[24]

The current financial crisis will inevitably affect microfinance. Planned microfinance IPOs for 2008 were postponed, and it has been increasingly difficult for MFIs to raise new equity (as well as debt), with the exception of a few notable transactions. The financial performance of MFIs may well deteriorate in 2009 as a result of adverse macroeconomic conditions, in particular the higher cost of funds. Some MFIs could face losses and equity write-downs on the back of rising past due loans and foreign exchange losses. Equity valuation will be affected given that valuations for listed emerging market banks are down roughly 50% since Lehman's bankruptcy. We also think that fewer transactions will take place and that distressed

Table 6. Number and Value of Transactions, by Year

	2005	2006	2007	2008	NR	Total
Transactions (#)	28	37	37	38	4	144
Transactions (US$)	107,969,182	19,905,978	61,440,959	103,893,011	3,307,321	296,516,451

Source: CGAP.

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22 CGAP will continue to maintain and update its confidential database on equity pricing and provide market benchmarks for private transactions.
23 The book value we used in our calculations of P/BV multiples is generally the book value as of the end of the year preceding the transaction.
24 See MicroBanking Bulletin, which attempts to normalize results for differences in accounting policies.

Table 7. Valuations Rebounded in 2008

| Year | Historical P/E | | Historical P/BV | | Sample |
	Unweighted Average	Median	Unweighted Average	Median	#
2005	9.1	7.9	1.6	1.7	28
2006	8.6	7.4	1.5	1.3	37
2007	9.9	7.2	2.5	1.3	37
Jan–Sept 2008	10.2	7.9	2.2	1.9	38

Source: CGAP. Valuations rebounded in 2008 mostly due to the high multiples applied to a small number of transactions.

Table 8. Breakdown, by Region: Eastern Europe and Asia Exhibit the Highest Historical P/BV in 2008

| | Median Historical P/E | | | | Median Historical P/BV | | | |
	2005	2006	2007	2008	2005	2006	2007	2008
Africa	5.6	6.2	17.1	11.8	0.9	1.2	1.6	1.7
Asia	NA	NA	NA	6.0	1.7	2.0	7.0	2.4
ECA	9.3	8.6	13.8	9.3	1.8	1.3	1.0	2.0
LAC	NA	6.7	5.6	7.8	1.4	1.2	1.1	1.2

Source: CGAP. NA = less than 5 transactions.

deals to rescue failing MFIs may bring down the average multiple of transactions. However, we do anticipate that well-managed MFIs will demonstrate impressive resilience to the crisis.

We expect valuations for private transaction to move toward a median of 1.0x book value in the next 12 months, mirroring the drop of approximately 50% in the valuation of traditional banks since September 2008. But the business fundamentals of microfinance remain strong. We expect valuation to bounce back in 2010–2011 as economic conditions and credit markets improve.

Back to Basics: Drivers of Valuation Are Usually Profitability and Income Growth

Profitability and earnings growth usually drive valuations. We tested this assumption on the dataset by plotting ROE against P/BV and net income growth against P/E, using country and regional averages.[25]

No link between profitability and valuation
In the case of the P/BV multiple, a higher ROE, which is a measure of profitability, should coincide with a higher multiple. But to our surprise, this is not the case for microfinance transactions. Table 9 shows no relation between the current profitability of an MFI and its value.[26] The wide disparities between region and country averages indicate the immaturity of the microfinance private equity market and the lack of market consensus for MFI valuation.

India is a clear outlier, with an average P/BV of 6.7. This can be explained by (*i*) the large market and growth potential for microfinance in India, (*ii*) the strong demand for Indian equity investments from leading private equity funds, and (*iii*) the lack of market benchmarks.

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25 We present country data only when our sample includes 5 or more transactions (for more details, see methodology of the study at the beginning of this report).
26 An analysis of disaggregated data confirms this finding.

On the other hand, Africa commands a relatively high P/BV valuation (1.5x), despite a negative median ROE. This surprising result might be influenced by the dearth of MFIs with strong return in Africa and the skyrocketing growth in the supply of capital (+100% in 2007) from DFIs and social investors for microfinance equity deals in Africa.

Table 9. Historical P/BV Multiples and Median ROE

	Average		Median	
	P/BV	ROE (%)	P/BV	ROE (%)
Africa	1.9	−3	1.5	−1
Asia	3.3	−3	2.1	13
ECA	1.7	15	1.7	16
LAC	1.5	23	1.2	21
Ghana	2.3	8	1.7	13
Uganda	1.5	6	0.9	−4
India	6.7	9	7.0	17
Cambodia	2.1	23	1.9	23
Mongolia	1.8	19	1.8	18
Tajikistan	1.4	−3	1.4	3
Bolivia	1	22	1.1	23
Nicaragua	1.7	26	1.3	29
Peru	1.3	21	1.2	21

Source: CGAP.

Figure 6. Scatterplot Reveals No Correlation between P/BV Multiple and Current Profitability (ROE)
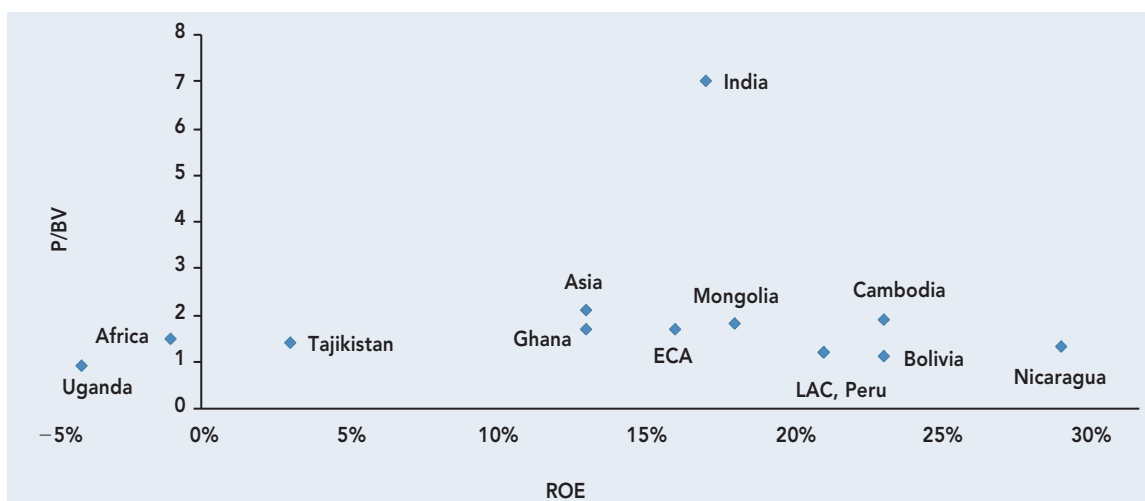
Source: CGAP. Median numbers are shown in this chart. Numbers correspond to medians. LAC: Latin America and the Caribbean; ECA: Eastern Europe and Central Asia.

Positive Correlation between Income Growth and Valuation

For P/E multiples, higher earnings growth should command a higher multiple. This relationship is evidenced in Figure 7 and Table 10, though Asia is a clear outlier.[27] In our view, investors are assigning a premium to MFIs with strong earning growth prospects.
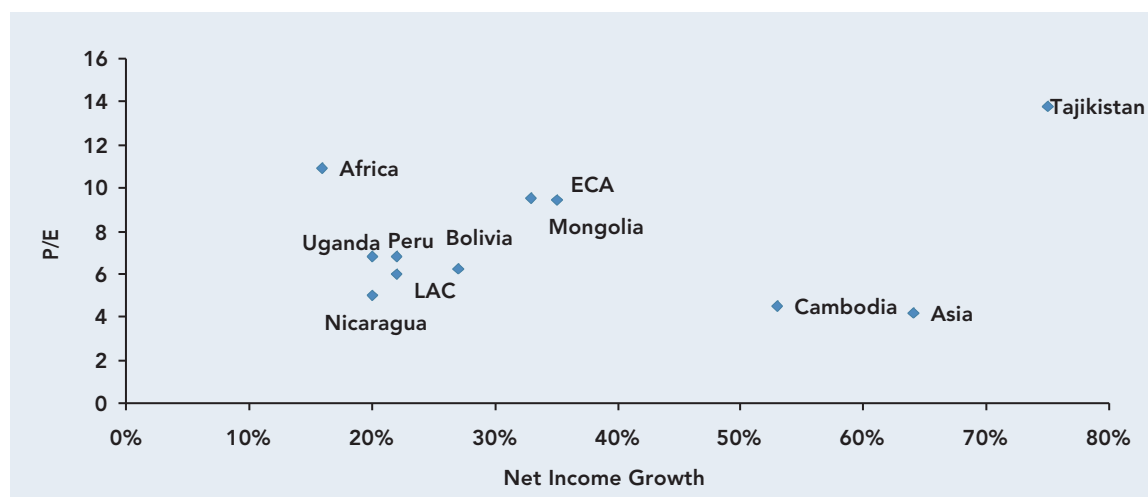
P/E multiples were not available for Indian transactions, which explains the relatively low reading for Asia as a whole on a P/E basis, versus the high P/BV for the region. Also note that this analysis does not take into account the variation in the number of shares and the effect of equity dilution.

Table 10. Historical P/E Multiples and Net Income Growth

	Average		Median	
	Income Growth (%)	P/E	Income Growth (%)	P/E
Africa	−1	+11.8	+16	+10.9
Asia	+126	+6.5	+64	+4.2
ECA	+53	+11.6	+35	+9.4
LAC	+60	+7.9	+20	+6.8
Uganda	−6	+8.1	+22	+6
Cambodia	+57	+7.4	+53	+4.5
Mongolia	+51	+10.2	+33	+9.5
Tajikistan	+61	+17.9	+75	+13.8
Bolivia	+22	+5.7	+27	+6.2
Nicaragua	+19	+6.7	+20	+5
Peru	+64	+9.1	+22	+6.8

Source: CGAP.

Figure 7: Scatterplot of Historical P/E and Earnings Growth Shows Some Correlation

Source: CGAP. P/E multiples for India are not available, which is why the country does not appear in this chart. Net income growth corresponds to the net income growth projected at the time of the transaction by the participant to our survey. Numbers correspond to medians. LAC: Latin America and the Caribbean; ECA: Eastern Europe and Central Asia.

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27 This is also confirmed by an analysis based on disaggregated data (see correlation analysis below).

Transaction Size and Net Income Growth Are the Main Drivers of Valuations

We selected 16 variables, including geographic distribution, deal features, and MFI characteristics, and conducted a statistical analysis to identify valuation drivers for private transactions in the microfinance space.

First, we looked at correlations between each individual variable and the valuation of the institution measured through either P/E or P/BV (see Table 11). The indicator we use measures the strength of a linear correlation between the two variables and is interpreted in the following way:

Table 11. Bivariate Correlations

	P/E	P/B
Leverage	−0.29 **	+0.53 ***
Operating Expense Ratio	+0.29 **	−0.07
PAR30	+0.15	−0.13
Net Income Growth	+0.46 ***	+0.46 ***
ROE	−0.32 **	−0.14
Avg. Loan Balance	0.08	−0.12
Avg. Savings Balance	0.06	−0.03
Savings/Assets	0.08	−0.18
Age	−0.41 ***	−0.1
Gross Loan Portfolio ($m)	−0.20 *	+0.12
Legal Type: Bank†	−1.84	1.96
Avg. Loan Size (GNI)	0.08	−0.12
Transaction Value ($m)	+0.21 *	+0.25 **
Market Capitalization ($m)	+0.37 ***	+0.54
Buyer is DFI †	−5.54 *	−0.53

Source: CGAP. Operating expenses ratio is calculated as operating expenses divided by gross loan portfolio.
Note: * significant at 5% ** significant at 1% *** significant at 0.1%
Correlations are measured through the Pearson Correlation Coefficient r. Its values are interpreted as 0<r<0.2: no or negligible correlation; 0.2<r<0.4: low degree of correlation; 0.4<r<0.6: moderate degree of correlation; 0.6<r<0.8: marked degree of correlation; 0.8<r<1: high correlation
+ and − indicate the direction of the correlation
† t-test (value equals difference in means)

- Only significant correlations are considered (these are all values marked with one or more asterisks).
- The sign of the correlation measure indicates the direction of the correlation. A + stands for a positive correlation, while a - stands for a negative correlation.
- The closer the indicator is to zero, the weaker the correlation; the closer the indicator is to 1, the stronger the correlation.

Overall, we observe more significant correlations of the selected variables with P/E than with P/BV. Three variables show significant correlations with both multiples:

- **Leverage.** The evidence on leverage, measured as the ratio of debt-to-equity, is inconclusive. While it is negatively correlated to P/E, it is positively correlated to P/BV.
- **Net income growth.** The indicator clearly has a moderate positive effect on valuation, either measured as P/E or as P/BV.
- **Transaction value.** It has a low, but significant correlation with valuation. Larger transactions lead to higher valuations.

In a second step, we conducted a regression analysis testing the influence of a subset of variables[28] on valuation, *controlling for the influence of other variables.* Table 12 summarizes the regression outputs. The results corroborate our findings from above: net income growth and transaction size exert a significantly positive effect on valuation. As in the case of bivariate correlations (see Table 11), we find more significant effects on P/E than on P/BV.[29] We also conducted an analysis on the impact of each variable on historic P/E and P/BV (see Appendix II).

Table 13 summarizes our findings. Out of the 16 variables presented in Table 13, **we identified 10 variables that we view as critical to justify the val-**

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28 For reasons associated to the process of statistical modeling, we had to restrict our analysis to eight variables.
29 The unweighted averages and medians for our full set of variables are available in Appendix II.

uation of an MFI. For the other six variables in our analysis, the relationship with transaction price does not appear to be significant.

Our conclusions are supported by data from the survey but are also driven by our knowledge of the microfinance universe. Our dataset is still limited: correlations alone do not necessarily give the full picture and can sometimes be misleading. We therefore recognize that our findings are subject to discussion.

Table 12. Regression Results, with Limited Set of Independent Variables

	P/E	P/BV
Debt/Equity	no	no
Operating Expense Ratio (log)	+	no
PAR30 (log)	no	−
NI Growth	+	+
ROE	−	no
Age	−	no
Gross Loan Portfolio (log)	+	no
Transaction Size	+	+

Source: CGAP. Operating expense ratio is calculated as operating expenses divided by loans.
Note: + indicates significant positive effect, − indicates significant negative effect. Some variables have been linearized (indicated by "log") for a better model fit.

Table 13. We Believe 10 Variables Are Important for Valuations

Variable	Referenced Data	Statistical Analysis		Our View: Is the Variable Relevant Overall? Conceptual Considerations	Yes/No
		Correlation	Regression		
Size: Transaction size (US$mn)	Table 22	+	+	Larger transactions command a higher multiple, in particular for transactions above US$2 million, because they allow for a more diverse pool of investors. Institutional investors typically have a minimum investment threshold. For smaller transactions, we believe that the scarcity of investors can put pressure on valuations.	yes
Financial Intermediation: Savings to total assets	Table 30	n/a	n/a	The level of financial intermediation (reliance on savings) is a key variable. We feel that retail deposits help diversify the funding base of an MFI, which is positive, and savings-based in-stitutions have proven to be more resilient in times of economic shocks. However, to nuance this statement, we note that deposits are not always cheap to attract.	yes
Buyer Type: Buyer is a DFI	Table 24	unclear	n/a	DFIs tend to pay more than MIVs in transactions. Our view is that the investment rationale of some DFIs (such as AFD and NORFUND) can be less geared toward pure profitability, and they may assign a greater value to microfinance because of its social agenda. However, we note that this holds true for socially oriented DFIs only.	yes
Geography: Country	Tables 8–10	n/a	n/a	This is possibly the most relevant variable for investors. Four country-specific factors are influencing valuation: (*i*) favorable regulations, (*ii*) country outlook (macroeconomic stability and political risk), (*iii*) market structure (size of the market and competition), (*iv*) the supply of capital (the presence of large private equity funds in some countries can affect valuation). Those four aspects are eminently country specific.	yes
Legal Status: MFI is a bank	Table 27	no	n/a	Our statistical analysis suggests no clear relationship between the legal status of the MFI and valuations because the P/BV multiples do not differ, while the P/E multiple is noticeably higher for banks. However, we believe that MFIs that are banks should trade at a higher multiple for two reasons: (*i*) in most countries, only fully regulated banks are allowed to capture demand and savings deposits, providing a stable funding base and (*ii*) being regulated imposes some disclosure requirements, which are likely to make investors more willing to take a stake in the company.	yes
Asset Quality: PAR30	Table 29	no	unclear	A low PAR30 indicates high asset quality and therefore should command higher valuation. The statistical analysis shows no significance because 90% of the surveyed institutions have a PAR30 below 5.4%, which limits the variation within the sample considerably. We believe that equity investors will be concerned as soon as PAR30 is over 3%, and MFIs will have great difficulty to raise capital if PAR30 is over 10%.	yes

(continues)

Table 13. We Believe 10 Variables Are Important for Valuations (continued)

Variable	Referenced Data	Statistical Analysis		Our View: Is the Variable Relevant Overall? Conceptual Considerations	Yes/No
		Correlation	Regression		
Efficiency: Operating expenses/ Average gross loan portfolio	Table 28	unclear	unclear	Even though the statistical analysis shows no correlations, we think this is a very important variable. We do not focus too much on P/E, because earnings are impacted directly by opera-ting expenses. Therefore P/E multiples look higher for MFIs with a higher ratio of expenses-to-loans, because of the lower earnings base. On a P/BV basis, MFIs with a lower ratio demand a higher multiple. We note that a limitation of this ratio is that it benefits MFIs that offer larger loans.	yes
Leverage: Debt-to-equity	Table 31	unclear	no	Less leverage commands a higher premium in the current context of scarce funding. We believe that a ratio of debt-to-equity below 3x (equity-to-assets ratio above 25%) commands a premium. However, we recognize that this is not reflected in the statistical analysis.	yes
ROE	Figure 6	unclear	unclear	Our statistical analysis shows no effect on valuation, but a high ROE indicates high profitability; positive effect on the price-to-book multiple is expected.	yes
Net Income Growth	Figure 7	+	+	High net income growth indicates a young institution at the beginning of its growth path; positive effect expected.	yes
Outreach: Average loan balance	Table 32	no	n/a	We do not find any clear conclusions based on our sample. MFIs with lower loan balances exhibit a higher P/BV but a lower P/E than MFIs with larger balances. A smaller average loan size causes higher expenses but is compensated by higher NIMs. The lower loan balance could indicate that the MFI is putting a bigger emphasis on its social agenda, justifying a premium for some DFIs or a discount for buyers focusing on profitability only.	no
Size: Market capitalization	Table 23	n/a	n/a	Our statistical analysis shows no clear correlation. We believe that the size indicator that is most relevant is the size of the transaction.	no
Outreach: Average savings balance	Table 33	n/a	n/a	We do not find any clear conclusions based on our sample. MFIs with lower savings balances per customer exhibit a higher P/BV but a lower P/E than MFIs with larger balances.	no
Geography: Region	Table 8–10	n/a	n/a	We do see patterns in the averages per region. However, to us, the country of the MFI is more relevant because of the large disparities among countries within the same region.	no
Scale: Number of borrowers	Table 25	n/a	n/a	We do not find any clear conclusions based on our sample. MFIs with a smaller scale exhibit a higher P/BV but a lower P/E than MFIs with larger scale.	no
Age of MFI	Table 26	unclear	unclear	What matters is growth outlook, not so much the age of the MFI, in our view. Our sample suggests that new MFIs (not older than 4 years) command a higher P/E multiple. We think this is mostly driven by a lower earnings base rather than by a higher price, making P/E an inappropriate multiple to look at in this case. Median P/BV multiples show no clear differentiation among new, young, and mature MFIs.	no

Source: CGAP and J.P. Morgan.

4. Valuation of Public Transactions—Low-Income Finance Institutions

In this section, we analyze data on low-income finance institutions (LIFIs). These institutions provide financial services (consumer and microenterprises loans, payments, and insurance) to low-income segments of the population but do not necessarily have a double bottom line. They offer interesting comparables for MFI valuation as they operate in the same market. We identified 10 listed LIFIs with a broad microfinance focus. They include two publicly listed MFIs (Compartamos and Equity), four banks with an emphasis on SME and microenterprise lending, and four consumer lenders.

We attempt to answer three key questions:

1. What is the performance of LIFIs' stocks in absolute and relative terms?
2. How does a listing impact the franchise of a LIFI?
3. Do we see evidence that valuations of LIFIs converge toward valuations of traditional banks?

Table 14. Sample of 10 LIFIs

BRI
Danamon
Equity Bank
Capitec
African Bank
Blue Financial Services
BRAC
IPF
Compartamos
Financiera Independencia

Source: J.P. Morgan.

Introducing the Low-Income Finance Index

The Low-Income Finance Index regroups six listed LIFIs

The Low-Income Finance Index was used to track historical performance. As Table 15 shows, the index consists of a market capitalization-weighted index of six LIFIs.

We used only six institutions, as opposed to the 10 mentioned earlier in this section, because financial forecasts are not available for the other four. In our index, BRI was assigned only a third of the weight that its market capitalization implied, because its relatively larger market capitalization would have distorted the index, and only about a third of BRI's loans can be considered microfinance.

Overall, we find that the Low-Income Finance Index trades at a premium on a P/BV basis over traditional banks, though this premium has declined considerably since its peak in November 2007. However, on a 2009 P/E basis, the Index trades at a discount of 22% to traditional banks (see Table 15).

Low-Income Finance Institutions outperformed traditional banks in the long run, and performed in line since its peak in 2007

In Figure 8, we back-tested the index since November 2003 with the first set of three LIFIs (African Bank, BRI, and Danamon). The index incorporates more LIFIs as they become listed: Compartamos (April 2007), IPF (July 2007), and Independencia (November 2007). Over the long run, the index outperforms traditional banks by 238%, as reflected by the MSCI Financials Index (see Figure 8).

Since the index peaked on November 2, 2007, at 801, it performed in line with MSCI Financials until October 2008 (see Figure 9).

Table 15. Valuation Summary: Comparing Our Index with Traditional Banks

Company	Ticker	Country of Listing	Mkt. Cap (US$ MM)	3M ADTV (US$ MM)	Local Price	P/BV			P/E			ROE		
						07A	08E	09E	07A	08E	09E	07A	08E	09E
African Bank	ABL SJ	S. Africa	2,143	9.42	2,495.0	1.6	1.5	1.4	9.9	8.0	6.8	27%	23%	20%
BRI	BBRI IJ	Indonesia	4,931	7.17	4,250.0	2.7	2.4	2.0	10.8	9.1	7.7	27%	28%	28%
Danamon	BDMN IJ	Indonesia	1,003	1.38	2,225.0	1.0	1.0	0.9	5.3	4.6	4.2	21%	22%	22%
IPF	IPF LN	UK	473	0.92	128.8	1.6	1.2	1.1	10.2	6.5	5.9	20%	20%	18%
Compartamos	COMPARTO	Mexico	829	1.39	27.7	5.2	4.1	3.1	13.8	11.2	9.5	47%	41%	37%
Independencia	FINDEP*	Mexico	258	0.24	5.8	1.8	3.1	2.1	7.2	6.7	5.5	NA	33%	40%
Low-Income Finance Index						**2.3**	**1.9**	**1.6**	**10.4**	**7.6**	**6.5**			
Emerging Markets Banks						**07A**	**08E**	**09E**	**07A**	**08E**	**09E**			
Latin America						2.0	1.9	1.9	8.8	8.6	8.6			
Emerging Europe						0.9	1.0	0.9	4.4	5.0	6.4			
Africa						1.4	1.2	1.3	6.8	7.2	6.9			
Asia						NA	1.5	1.4	NA	8.5	8.7			
Average Emerging Markets Banks						1.4	1.5	1.3	6.3	8.1	8.4			

Source: Bloomberg, Company data, CGAP equity survey, J.P. Morgan estimates. ADTV = average daily trading volume. OW = Overweight. N = Neutral rating. Prices as of January 28, 2009.
Notes for the Low-Income Finance Index: We used J.P. Morgan estimates for the stocks covered by J.P. Morgan and Bloomberg consensus estimates for IPF and Independencia. The Lower-Income Finance Index is a market capitalization-weighted index, with the weight of BRI reduced to a third, because its microfinance portfolio represents only about a third of its total loan book. We did not include BRAC, Equity Bank, Blue Financial Services, and Capitec because financial forecasts are not available.
Notes for Global Emerging Markets Banks: We show market capitalization-weighted averages of banks covered by J.P. Morgan analysts, representing a sample of 148 banks across all emerging markets.

27

Figure 8. Low-Income Finance Index Outperforms in the Long Run
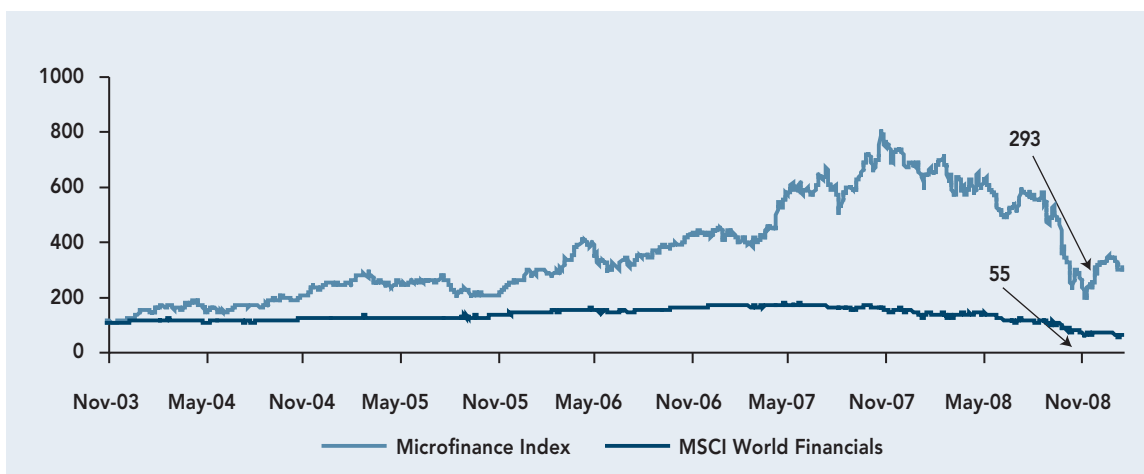
Source: Bloomberg, J.P. Morgan.

Base = 100 as of November 10, 2003. The index at inception consisted of only three MFIs (BRI, Danamon, and African Bank) and included the other three MFIs (Compartamos, Financiera Independencia, and IPF) when they went public in 2007. Priced as of January 28, 2009.

Figure 9. The Low-Income Finance Index Performed in Line with MSCI Since Its Peak in November 07
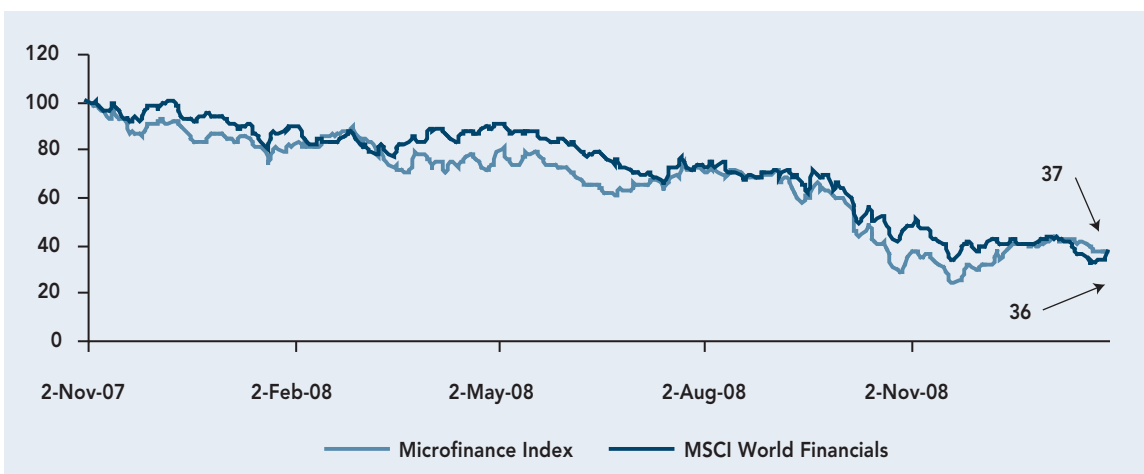
Source: Bloomberg, J.P. Morgan.

Base = 100 as of November 10, 2007. Priced as of January 28, 2009.

Figure 10 shows the relative performance of the Low-Income Finance Index and MSCI World Financials since Lehman's bankruptcy (September 15, 2008). Since the beginning of the crisis, the Low-Income Finance Index outperformed the MSCI Financials Index by 8%. We believe that LIFIs with a low average trading volume and a large foreign investor base are more affected.

Performance of Individual LIFIs Post Listing

Most individual LIFIs outperform their country indices...

We compared the price performance of each LIFI post-IPO with the local stock index, the local MSCI index (where available), and the local MSCI Financials index (where available).

We see a clear trend of outperformance of LIFIs relative to their country index. Blue Financial Services outperformed the country MSCI index by over 100%. And on average, for the 12 months following the IPO, our sample outperformed by 45% relative to the local stock exchange index and by 38% relative to the country MSCI financials. We believe that part of the success of some listings is due to the limited

Figure 10. The Low-Income Finance Index Overperformed by 8% Since Lehman Bankruptcy (Sept 15)
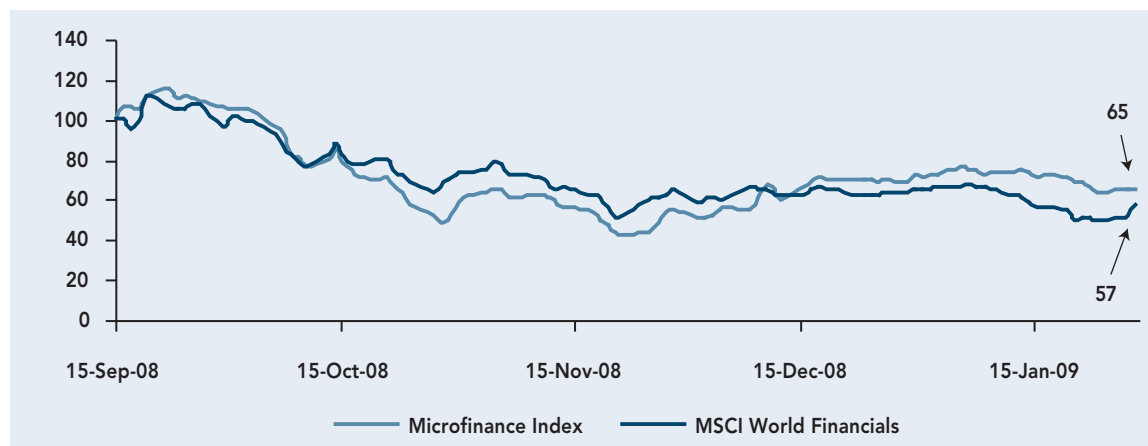
Source: Bloomberg, J.P. Morgan.

Base = 100 as of September 15, 2008. Priced as of January 28, 2009.

Table 16. Absolute and Relative Performance (%), Post Listings

Listing Date	Comparto Apr-07	BRI Nov-03	Financiera Nov-07	Capitec Feb-02	Blue Fin Serv Oct-06	BRAC Jan-07	Equity Bank Aug-06	IPF Jul-07
Absolute								
1M after listing	11	5	−18	−49	154	2	11	−21
3M after listing	28	69	−25	8	83	7	18	−15
6M after listing	17	62	−16	6	114	107	85	−26
12M after listing	−6	110	−61	33	136	227	10	2
Relative to Local Stock Exchange								
1M after listing	8	1	−13	−51	151	0	3	−13
3M after listing	21	45	−14	4	74	6	−9	−15
6M after listing	11	47	−16	20	91	74	54	−18
12M after listing	−13	65	−26	55	99	161	−7	23
Relative to Country MSCI Financials								
1M after listing	12	6	−16	−49	149	n/a	n/a	−14
3M after listing	33	37	−11	−5	65	n/a	n/a	−11
6M after listing	19	37	−17	11	82	n/a	n/a	−4
12M after listing	2	44	−24	50	108	n/a	n/a	45

Source: Factset. Performance is relative to the local stock exchange where the MFI is listed. A country MSCI Financials is available for all companies, except BRAC (Bangladesh) and Equity Bank (Kenya). We treat IPF as a U.K. company and compare its stock performance against the MSCI UK Financials Index, although we note that its operations are mostly in Eastern Europe and Mexico. We do not include information on Danamon and African Bank, because their listing happened before 2000, making the data less relevant. Data as of January 28, 2009.

availability of IPOs in some countries (e.g., Compartamos in Mexico) and the scarcity of IPOs of LIFIs in general.

IPF, a spin-off from Provident that operates in Mexico and Eastern Europe, provides an interesting example. While it underperformed its local indices at the time of the listing, it now outperforms the MSCI U.K. Financials (January 2008 onwards) and the MSCI UK/FTSE (March 2008 onwards). We note that its IPO occurred in summer 2007, which corresponded to the beginning of the subprime crisis and most notably to the distress of Northern Rock in the United Kingdom. Since the beginning of the year, while IPF's performance has dipped below that of the MSCI UK/FTSE, it continues outperforming the MSCI UK Financials Index, and appears relatively isolated from the financial crisis.

… but foreign ownership and liquidity are key concerns for valuation

We highlight the relatively disappointing performance of the two Mexican LIFIs: Compartamos and Financiera. We believe the shareholder structure (82% of foreign investors in the case of Compartamos' IPO, 65% in the case of Independencia) helps explain their poor performance relative to their stock markets. In our view, more foreign shareholders and more institutional investors translate into higher price volatility.

Table 17. Foreign Ownership May Impact Stock Performance

LIFI	Listing Date	% of Foreign Ownership at Time of Listing
Capitec	February 2002	0
BRI	November 2003	0
Blue Financial Services	October 2006	0
Equity Bank	August 2006	n/a
BRAC	January 2007	37
Compartamos	April 2007	82
IPF	July 2007	17
Financiera Independencia	November 2007	65

Source: J.P. Morgan estimates.

As usual for IPOs, the average daily trading volume is strong at the time of the listing and then tends to decline sharply, as evidenced in Table 18. In the case of LIFIs, we note that the relatively smaller float (Financiera's float is 19%) is a constraint for trading volume. In our sample, only three institutions have an average daily trading volume above US$1 million.

Convergence of Multiples

Should LIFIs converge toward the levels of domestic financial institutions? In some markets, we are seeing

Table 18. Average Daily Trading Volume Decreases After the Listing and Varies Largely by Institution, in US$ million

	Comparto	Financiera	Capitec	Blue Fin Services	Equity Bank	BRI	BRAC	IPF
Listing Date	**Apr-07**	**Nov-07**	**Feb-02**	**Oct-06**	**Aug-06**	**Nov-03**	**Jan-07**	**Jul-07**
1M post Listing	20.45	4.93	0.03	0.10	0.22	12.37	2.03	8.12
3M post Listing	10.92	2.12	0.02	0.12	0.28	8.93	0.95	4.96
6M post Listing	6.61	1.65	0.02	0.09	0.34	6.84	1.32	3.43
12M post Listing	4.64	1.04	0.02	0.10	0.55	5.30	1.78	2.65
Last 6M	**1.28**	**0.29**	**0.08**	**0.18**	**0.71**	**8.73**	**0.49**	**4.04**

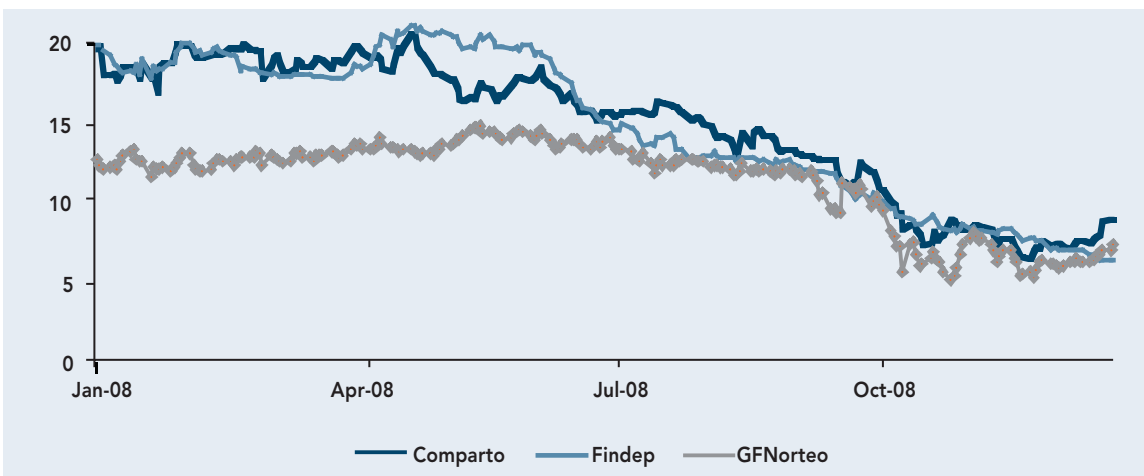*Source: Bloomberg, J.P. Morgan. Data as of January 28, 2009.*

LIFIs converging toward domestic bank multipliers overtime. In others, the trend remains divergent.

Our analysis confirms theses two trends. Mexican institutions are seeing their P/E multiples converge to levels similar to Banorte's (a traditional commercial bank in Mexico). (See Figure 11.) In the case of South Africa, the trend of convergence is a lot less clear between Capitec's multiple and Standard's, suggesting that the convergence hypothesis could be country and company specific. (See Figure 12.)
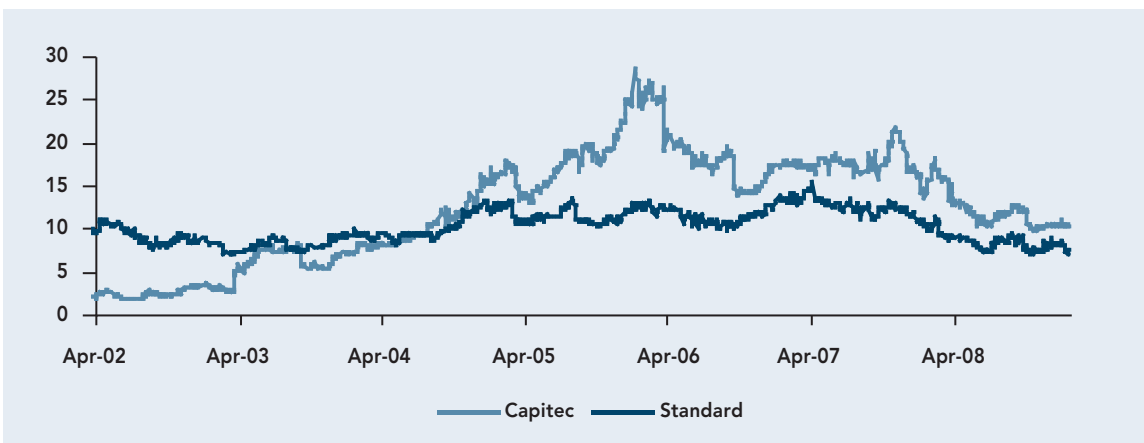
How long does it take to converge? We believe convergence depends on the market structure, in par-

Figure 11. Convergence of the P/E Multiples Compartamos and Independencia to the Levels of Banorte since January 2008

Source: Bloomberg, J.P. Morgan. Data as of January 28, 2009.

Figure 12. Convergence of P/E of Capitec to the Levels of Standard Bank is Unclear

Source: Datastream. Data as of January 28, 2009.

ticular the level of competition, and on the evolution of the company post IPO. Looking at Bolivia, we observe that NIMs at Bancosol (the leading provider of microloans in Bolivia) went from what we consider high levels of 28% in 1997 to a long-term stabilized level of 15–20%, in 2006–2007, leading to a convergence in risk-adjusted return expectation with banks. This observation is indicative of only one market, and we acknowledge that this convergence could be much faster in other markets or for some specific institutions, depending on the level of competition and their strategy.

Impact of a Listing on a LIFI's Operations

In this section, we analyze the impact of a listing on our sample of LIFIs. Overall, our data show that a listing does not significantly affect the operations of LIFIs. We analyzed the growth of the institution (with loan growth and branches), the asset quality of its loan book (with NPL ratio), profitability (with NIMs and ROA), and earnings power (EPS growth).

There is no evidence that a listing has a clear impact on LIFIs' operations
As Table 19 shows, loan growth does not consistently increase for LIFIs the year after the IPO. Equity Bank's

loan growth increased from 88% in the year of the listing to 110% in the following year, while loan growth decreased significantly for Compartamos and Independencia.

We see no clear trend for asset quality either. However, we note that in some instances, NPLs can increase as a result of the diversification of the LIFI's product offering, which sometimes leads the institution into uncharted territory.

We see no clear trend for NIMs (see Table 20). NIMs are impacted positively by declining funding cost and negatively by lower interest rates charged on loans.

As evidenced in Table 21, LIFIs experienced a different evolution of their EPS growth after their listing. Some institutions, such as Equity and BRAC, saw a dramatic increase in EPS growth after the IPO while others, such as Compartamos and Blue, saw a decline.

Despite the considerable effort to prepare for an IPO and the expected increased focus on financial performance, there is no clear trend emerging from our analysis on the impact of a listing on a LIFI perform-

Table 19. Franchise Metrics, before and after listing

	Loan Growth (%)			Branches			NPL Ratio (%)		
	IPO-1	IPO	IPO+1	IPO-1	IPO	IPO+1	IPO-1	IPO	IPO+1
Comparto*	46.6	40.7	27.3	187	252	308	0.7	1.6	1.6
Findep*	16.5	49.2	53.6	117	152	187	6.2	8.4	6.7
Equity	92.2	88.1	110.2	42	52	81	1.9	0.5	2.0
Blue	n/a	n/a	132.5	33	106	170	n/a	n/a	n/a
Capitec	n/a	n/a	5.0	n/a	315	266	n/a	n/a	22.4
BRI	20.9	31.1	21.1	n/a	n/a	n/a	6.0	4.2	4.7
BRAC	102.6	65.9	66.0	361	467	519	3.0	12.8	7.7
IPF*	n/a	33.8	35.7	n/a	n/a	n/a	n/a	n/a	n/a

Source: J.P. Morgan estimates, Bloomberg, Company data.
* September 2008 data, annualized.

Table 20. Franchise Metrics, before and after listing

	NIM (%)			Avg Interest Rate (%)			Funding Cost (%)		
	IPO-1	IPO	IPO+1	IPO-1	IPO	IPO+1	IPO-1	IPO	IPO+1
Comparto*	65.1	65.0	64.9	71.3	69.1	68.4	12.7	11.2	8.5
Findep*	59.6	65.7	61.0	61.1	56.3	57.3	11.0	15.4	6.8
Equity	8.5	8.7	5.6	9.3	9.5	6.6	0.9	0.8	1.4
Blue Financial Services	n/a	40.0	26.1	n/a	51.3	27.2	n/a	32.5	16.6
Capitec Bank	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
BRI	10.3	12.9	12.5	30.0	24.6	21.5	9.0	5.1	5.1
BRAC	4.7	5.4	5.8	9.0	9.8	10.4	5.7	6.7	6.5
IPF*	90.9	85.4	88.6	97.3	77.0	89.6	6.2	6.0	7.2

Source: Bloomberg, Company data, J.P. Morgan estimates.

* September 2008 data, annualized.

Table 21. Franchise Metrics, before and after listing

	ROA (%)			EPS growth (%)		
	IPO-1	IPO	IPO+1	IPO-1	IPO	IPO+1
Comparto*	22.6	20.7	20.0	66.0	36.5	19.9
Findep*	17.2	16.4	14.5	n/a	11.5	12.8
Equity	3.8	4.8	5.2	n/a	−27.1	148.4
Blue Financial Services	2.5	7.6	7.2	n/a	335.7	37.3
Capitec Bank	n/a	11.8	7.1	n/a	n/a	n/a
BRI	2.8	3.6	3.3	65.1	22.2	3.6
BRAC	1.4	1.4	1.6	66.4	−23.7	87.0
IPF*	4.4	5.2	4.4	n/a	41.3	−4.6

Source: Bloomberg, Company data, J.P. Morgan estimates.

* September 2008 data, annualized.

ance. However, the picture is more clear on the investor side. We estimate that 85% of the total capital raised in recent microfinance IPOs corresponded to secondary transactions (IPO proceeds go to investors rather than to the MFIs). Early equity investors, such as DFIs or microfinance funds, are using listing as an exit mechanism.

Conclusions

This report sheds new light on equity valuation in microfinance and offers some of the first industry benchmarks for microfinance valuations.

Our view is that MFIs differ from traditional banks and justify a different valuation approach. MFIs are double bottom line institutions aiming for both social and financial returns. They exhibit better asset quality, higher net interest margins but higher operating costs than emerging market banks. They also benefit from longer term funding available from development investors.

The private equity market for microfinance is still young and is lacking consensus over valuation approaches. Valuation for microfinance has varied widely over the past three years. Net income growth and transaction size appear to be the main valuation drivers considered by investors although we also identified eight other important factors.

The median multiples in our private sample varied between 1.3x and 1.9x historical book and 7.2x and 9.2x historical earnings from 2005 to September 2008. These relatively high valuations compared to emerging market banks reflect the strong business fundamentals of microfinance and increasing investor interest in microfinance.

Publicly listed low-income finance institutions (LIFIs) are interesting comparables for MFIs. LIFIs outperformed their country indices by 238% since the creation of the index in November 2003. Also, since the Lehman bankruptcy in 2008, they have overperformed the Global MSCI World Financials index by 8%.

The financial crisis is already taking its toll on microfinance, but the full impact will likely be seen later this year. Adverse economic conditions should lead to slower growth and deterioration in MFI financial performance. The coming year will also test the assumption that microfinance is more resilient than traditional banking to economic shocks and can maintain high asset quality in times of turmoil.

We believe 2009 will be a transformational year for microfinance. MFIs will have to refocus on their fundamentals, increase credit standards to maintain high asset quality, diversify their funding sources, close their currency mismatch, and keep expenses on track. Investors will also push for higher corporate governance and public disclosure standards. The crisis should also be an opportunity for restructuring and consolidation in the sector.

In 2009, we expect private transactions valuations to decrease toward 1x historical book value in the private market. However, the strong fundamentals of the microfinance industry and the commitment of public and private investors should bolster pricing going forward. MFIs with a solid funding base and strong asset quality should emerge stronger from this turbulence, and we can expect valuation to bounce back in 2010. The long-term outlook for equity investment in microfinance remains positive.

Appendix I: Glossary

Development finance institutions (DFIs) are the private sector arms of government-owned bilateral agencies and multilateral institutions, such as the World Bank. DFIs have been established to provide investments and advisory services to build the private sector in developing countries. DFIs include multilateral organizations, such as IFC (International Finance Corporation, a subsidiary of the World Bank), and bilateral financial institutions, such as the German KfW (Kreditanstalt für Wiederaufbau).

DFIs have been early investors in microfinance. Most DFIs started financing microfinance in the late 1990s following on the grant funding of donor agencies since the 1970s. DFIs are bringing a commercial approach to the microfinance industry, providing quasi-commercial loans, equity, and guarantees to MFIs. There were 19 DFIs active in microfinance in 2007. Their total microfinance portfolio is in excess of US$4 billion and is growing at an annual rate of 55%. Most of DFIs' investments are in fixed income (60%) and are concentrated in the largest MFIs. But DFIs' equity investments are also on the rise and reached US$890 million in December 2007. According to CGAP's 2008 Funder Survey, four DFIs—KfW, IFC, FMO, and EBRD—account for 80% of the total DFI equity investments in microfinance.

Microfinance investment vehicles (MIVs) are specialized microfinance funds or investment vehicles intermediating capital between investors and MFIs. There were 93 active MIVs in 2007 with total assets under management of US$5.4 billion. MIVs comprise a diverse range of organizations in terms of investor base, instruments, and legal set up. The largest MIV groups are regulated mutual funds, structured finance vehicles, and holding companies. MIV investments have quadrupled since 2005, and this growth is set to continue. Individual investors and foundations were early backers and continue to provide one-third of MIV capital. DFIs were also early subscribers and drove several MIV start-ups, such as the equity fund Profund. Today, institutional investors are providing the mainstay of MIVs' funding with a 40% share. MIVs are invested primarily in fixed income (78%) in large MFIs in Eastern Europe and Latin America. But equity investments are growing rapidly (+95% in 2007) and passed the US$1.5 billion milestone in 2008. The largest fund is Procredit, a German holding of 19 greenfield banks. According to CGAP's 2008 MIV survey, the average return for private equity funds in microfinance is 12.5 % (average gross internal rate of return for funds with 2002 vintage year).

Socially responsible investment (SRI) is a generic term covering ethical investments, responsible investments, and sustainable investments that combine investors' financial objectives with their concerns about environmental, social, and governance (ESG) issues. SRI investors can use a broad range of investment strategies, including ethical exclusion, negative screening, positive screening, and shareholder engagements. Institutional investors, such as pension funds integrating ESG factors in their investment decisions, are part of the broad SRI markets. According to the Eurosif SRI study 2008, the broad SRI market is estimated at Eur5 trillion, including Eur2 trillion in the United States and Eur2.6 trillion in Europe.

Microfinance institutions (MFIs) provide microloans specifically for low-income borrowers who are typically self-employed or owners of tiny informal businesses, rather than salaried workers. The loan size is small (on average US$3,000 in Europe and Central Asia[30] and less than US$1,000 elsewhere), and lenders rely on alternative lending techniques that generally do not rely on conventional collateral. Most of the 1,300 institutions that report to MixMarket—the industry information exchange—have microenterprise lending as a core product but are increas-

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30 MicroBanking Bulletin 7, MicroBanking Bulletin average for 2007.

ingly offering other types of loans, such as mortgage loans and consumer loans for salaried workers, and savings accounts. MFIs exist in a variety of legal forms, from credit unions and NGOs to formal non-bank financial institutions and regulated banks. Many of them are increasingly moving away from donor subsidies to leverage commercial capital (usually debt, deposits, and equity investments). Most MFIs see themselves as having a double bottom line, aiming for both profit and social impact.

Appendix II: Multiples for Private Equity Transactions (CGAP Survey)

Table 22. Transaction Size

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<$500k	8.3	6.7	1.8	1.4	64
$500k–$1m	9.3	7.4	1.5	1.4	29
$1m–$2m	9.3	5.2	1.6	1.3	29
>$2m	14.0	12.2	3.5	2.5	21

Source: CGAP.

Table 23. Market Capitalization

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<$5m	8.9	6.2	1.7	1.5	61
$5m–$10m	11.1	9.1	1.5	1.3	28
$10m–$20m	7.4	6.9	1.6	1.3	31
>$20m	11.6	9.7	3.6	2.3	23

Source: CGAP.

Table 24. Buyer Type

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
MIV	9.2	7.2	1.9	1.3	71
IFI	14.3	8.6	2.4	1.8	36
Other	7.8	7.4	1.8	1.5	28

Source: CGAP.

Table 25. Scale: Number of Borrowers

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
Small	10.9	8.2	1.6	1.3	31
Medium	11.5	7.8	1.8	1.4	27
Large	8.0	7.3	2.3	1.5	66

Source: CGAP.
Small=<10,000 borrowers, medium=10,000–30,000 borrowers, large=>30,000 borrowers.

Table 26. Age of the MFI

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
New	14.7	13.0	1.9	1.7	38
Young	8.7	8.1	2.6	1.5	36
Mature	7.1	5.8	1.6	1.2	51

Source: CGAP.
New=0–6 years, young=6–10 years, mature=>10 years

Table 27. Legal Status

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
Bank	10.6	9.3	1.8	1.4	59
Non-Bank FI	8.8	6.4	2.1	1.4	81

Source: CGAP.

Table 28. Efficiency

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<10%	6.6	6.8	5.8	5.1	6
10%–20%	8.6	7.3	1.8	1.4	76
20%–30%	8.9	9.3	1.4	1.1	10
>30%	13.1	11.3	2.0	1.5	22

Source: CGAP. Operating Expense / Period Average Gross Loan Portfolio.

Table 29. Asset Quality: PAR 30

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<1%	9.9	8.3	2.5	1.7	51
1%–3%	7.0	6.8	1.4	1.2	41
>3%	10.9	7.5	1.9	1.4	29

Source: CGAP.
Outstanding balance of loans (principal and interests) with at least one payment > 30 days overdue / Gross Loan Portfolio.

Table 30. Financial Intermediation: Savings to Total Assets

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
Non FI	8.3	6.5	2.5	1.3	36
Low FI	9.5	6.0	1.9	1.6	35
High FI	10	8.2	1.7	1.4	52

Source: CGAP.

Non FI = Voluntary Savings / Total Assets=0, medium FI = Voluntary Savings / Total Assets > 0 and <20%, high FI=Voluntary Savings / Total Assets>20%.

Table 31. Leverage: Debt to Equity

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<3	13.3	11.1	1.9	1.6	30
3 to 6	9.8	7.9	1.7	1.3	45
>6	7.2	6.6	2.3	1.4	49

Source: CGAP.

Total Liabilities / Total Equity.

Table 32. Outreach: Average Loan Balance

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<50%	8.6	6.6	2.7	1.5	37
50%–150%	9.3	7.9	1.8	1.6	40
>150%	10.1	7.8	1.6	1.3	45

Source: CGAP.

Average Loan Balance per Borrower / GNI per capita (Gross National Income).

Table 33. Outreach: Average Savings Balance

	Historical P/E		Historical P/B		
	Unweighted Average	Median	Unweighted Average	Median	Sample
<50%	12.6	6.6	2.5e	1.8e	22
50%–100%	8.9	8.9	1.6	1.4	37
>100%	8.6	7.4	1.5	1.3	25

Source: CGAP.

Average Savings Balance per Borrower / GNI per capita (Gross National Income).

Appendix III: CGAPs Private Equity Transaction Survey, Survey Participants

CGAP's private equity transaction survey was completed in summer 2008. Thirty-one organizations partici-
pated, including 4 development finance institutions (DFIs), 13 microfinance investment vehicle (MIVs), and 14
MFIs. CGAP is grateful to these organizations for their support of CGAP's public research on microfinance
valuation. The survey is strictly confidential, but the following organizations have authorized CGAP to list them
as survey participants.

DFIs
BIO
FMO
PROPARCO

MIVs
ACCION INTERNATIONAL
ADVANS SA
AKAM
INCOFIN
INVESTISSEUR ET PARTENAIRE POUR LE DEVELOPPEMENT (I&P)
MECENE INVESTMENT, ADVISOR OF AFRICAP
MICROVEST
OMTRIX
OPPORTUNITY INTERNATIONAL
RESPONSABILITY
SHORECAP MANAGEMENT
SIDI

Financial Institutions
BANCO DEL EXITO (BANEX)
CENTENARY BANK
COMPARTAMOS BANCO
FUNDATION D-MIRO MISION ALIANZA-ECUADOR
UGANDA FINANCE TRUST
XACBANK