

GROWTH IN  
COMMERCIAL MICROFINANCE:  
2005-2008

**Preetesh Kantak**

*Winter 2011*

**An Update to**  
*Characteristics of Equity Investments in Microfinance,*  
April 2004



**Council of Microfinance Equity Funds**

## TABLE OF CONTENTS

Acknowledgements	2
About the Council of Microfinance Equity Funds	2
Introduction	3
I. Study Methodology	3
MFI Identification and Scope	3
Missing Data and Interpolation/Extrapolation	4
Weighted Average	4
II. Organic Growth of MFIs: 2005 to 2008	4
III. Trends by Region, Highlights from the ‘2006 MFIs’	6
Africa	6
East Asia and Pacific	7
Eastern Europe and Central Asia	7
Latin America	7
Middle East and North Africa	7
South Asia	7
IV. Characteristics of MFIs: 2008 Snapshot and Trends	8
Size and Distribution Metrics	8
Equity, Assets, Borrowers and Depositors	9
Relative Concentration	10
Loan and Deposit Sizes	11
Risk Management	11
V. Components of ROE: Trends Analyzed	13
Inverse Capital Asset Ratio	13
Financial Revenue Ratio	13
Profit Margin	13
Attribution	14
VI. MFI Ownership Structure	15
Annex 1: Equations	18
Annex 2: Tables, Figures and Graphs	19
Annex 3: Herfindahl Values for Various Countries	20

This study is the second update of the original 2004 CMEF study, *Characteristics of Equity Investment in Microfinance* and seeks to illustrate the changes in growth, expansion and maturity of the commercial microfinance industry between 2005 and 2008. Note that data spreadsheets have not been annexed to the study, but are available upon request. The study quantifies the explosive organic growth, in terms of equity, assets, number of borrowers and depositors in the industry. This growth has been particularly vibrant in Asia. It further highlights structural changes in the industry. First, there is a general trend of mean reversion of leverage. That is, as the industry matures, higher levered regions are deleveraging versus lower levered regions. Second, there is evidence that greater financial intermediation is taking place. Microfinance Institutions (MFIs), especially in the African region, are clearly using deposits as a way to fund their loans. Third, using the Herfindahl equation, we were able to see concentration effects, particular in high growth regions such as India and Africa. This has clear impacts on competition and ultimately on the interest rates charged. Fourth, we developed an alternative risk ratio to better illustrate the effectiveness with which MFIs are managing their portfolio risk. We see that although Africa has traditionally had the highest PAR-30 ratios, African MFIs are managing their risk prudently from a historical perspective. Asia fares much worse with this kind of metric. Fifth, we do a simple Dupont breakdown of return on equity (ROE) in order to ascertain the main drivers of profitability between 2005 and 2008. Profit margin determined the greatest percentage of variability in return on equity between MFIs. This dependence has clear implications in terms of what type of investor will succeed in the MFI industry. Finally, we present an update on the ownership structure of characteristic MFIs. We see evidence of acceleration in transformations, an increased willingness of local capital to fund MFIs, and a continued effort by NGOs to divest their original holdings.

## **ACKNOWLEDGEMENTS**

I am grateful for the help of the various MFIs and funds that responded to the surveys that helped inform this study. Special thanks are due to the Council of Microfinance Equity Fund members who answered the survey about the ownership structures of their investments. The vast majority of information provided in this study came from the Microfinance Information Exchange (MIX). I'd also like to thank Elisabeth Rhyne of the Center for Financial Inclusion, Deborah Drake and Stephanie Dolan of the Council of Microfinance Equity Funds, and Willem Enklaar of Triodos Bank for their input.

## **ABOUT THE COUNCIL OF MICROFINANCE EQUITY FUNDS (CMEF)**

The CMEF is a membership organization of private entities that make equity investments in MFIs throughout the developing world. Council members seek both social and financial returns from their investments in these MFIs. The Council's purpose is three-fold: (1) to articulate and disseminate the knowledge and expertise about equity in microfinance of the Council's members among themselves and to other MFI stakeholders, (2) to present guidelines and principles for effective investment in MFIs, and (3) to conceive of a future strategy for the role of investment capital in microfinance with a particular emphasis on attracting private investors to microfinance. ACCION International, the Council Coordinator, originally brought together the group to create the Council in 2002 and it was formally launched in 2003.

Other CMEF publications, including the original (2004) and first update (2006) of this study, are available online at [www.cmef.com](http://www.cmef.com).

## INTRODUCTION

This study illustrates the significant changes in the commercial microfinance industry over the past four years. Traditionally, growth studies, such as MicroRate’s annual microfinance investment vehicles (MIVs) survey<sup>1</sup>, have focused on growth in the assets of MIVs. This growth has been phenomenal, and of course strongly influences the MFIs in which they invest. The *Growth in Commercial Microfinance* series, of which this is the third publication, dissects and clarifies growth in the MFIs themselves – the actual investment opportunity-set. With this study we gauge the opportunities available to investors in MFIs.

The first study of this series, published in 2004, focused on the transformation process of NGOs and start-up MFIs into regulated, for-profit entities. A large part of this effort was the enumeration of guiding corporate governance principles and the impact that this new business model had on the sustainability of the institutions and industry. The second study, published in 2006, examined industry growth in the preceding two years, and explored the distribution of MFIs, borrowers and depositors by region.

In this latest installment, we first analyze the internal, “organic” growth of MFIs presented in the 2006 study. We explore the increasing and more pervasive efforts at financial intermediation and how the growth of saving products have matched, if not exceeded, the growth of loan products.

By analyzing changes in the distribution of loan sizes on a regional and aggregate basis we also look into an interesting phenomenon occurring in the distribution of loan sizes within larger and smaller MFIs. We then construct our own risk management metric to better visualize the tradeoff between high losses on loans and proper risk management provisions. Overall, even with the explosive growth that characterized the sector through 2008, it seems as though MFIs improved their commitment to low income borrowers and their investors.

Through a breakdown of the Dupont Formula, we further illustrate the rapid maturing of the industry. MFIs have shown improvement in return on equity, profit margin, and the use of leverage between 2005 and 2008. This increased maturity, however, has also led to some increased concentration, as evidenced by our Herfindahl analysis.

Finally, we present an updated composition of ownership of characteristic commercial MFIs. The composition of ownership is an important determinant of an MFI’s mission and direction, as well as the effectiveness of corporate governance.

## I. STUDY METHODOLOGY

*MFI Identification and Scope.* A commercial MFI, for the purposes of this study, is defined as a specialized, regulated, and for-profit MFI. We therefore exclude cooperatives, NGOs and non-shareholder owned entities. We identified 619 commercial MFIs, of which, for any given dataset, approximately 500 provided the MIX and other public sources (financial statements, audits, etc. ) with data up to either 2007 or 2008. To be clear, each dataset does not necessarily represent the same 500 MFIs. However, in each case, the MFIs not represented in a dataset were a very small portion (<1 percent) of total assets. We therefore felt comfortable using the datasets for our analysis. To put in perspective the scale of concentration within our dataset, the largest 310 MFIs represented 98 percent of all assets.

1. “State of Microfinance Investment: The Microrate 2010 MIV Survey.” Web. July 2010.

There were 15 total variables analyzed for this study. Each series was grouped in one of three categories (metrics): growth, hybrid, and sampling. Growth metrics included series on the number of borrowers, loan portfolio size, number of depositors, deposit portfolio size, total assets, and total equity. Hybrid metrics included average loan balance and deposit balance size. Sampling metrics included total loss provisioning contra account per assets, PAR-30 ratio, capital asset ratio, finance revenue ratio, return on equity, return on assets and profit margins. The growth category variables were used to compare year over year changes in different size metrics of the industry. The datasets were therefore aggregated across all MFIs. Hybrid and sampling dataset categories are characteristics of individual MFIs and, in this context, aggregating them would be meaningless.

*Missing Data and Interpolation/Extrapolation.* Intra-year points were defined as data missing between years. This missing data skewed growth and hybrid datasets downward for a given year and upward for year over year variation. For intra-year missing data we therefore interpolated between given data points (see Annex 1 for method).

For terminal-year missing data, which involved a large percentage of assets, we did not manipulate the data for hybrid or sampling category datasets. For the growth category, two options were considered. First, we looked at extrapolating data according to implied growth rates within each country. This was deemed risky because missing data included several very large MFIs (e.g. Bank Rakyat Indonesia, Banco Caja Social Colombia). We also looked at a combination of (1) removing outliers (disproportionately large MFIs) and (2) using 2007 data for terminal, 2008, missing data. After these adjustments, 2008 data ‘extrapolated’ from 2007 represented <7% of total assets and <14% of total MFIs. We removed three MFIs from the dataset: Bank Rakyat, Banco Caja Social Colombia, and KMB Russia.

*Weighted Average.* With sampling metrics, we also considered how to calculate an average. We used a weighted average, using the denominator of the ratio for each dataset represented. For example, with the loss provision, capital asset, and financial revenue ratios, we multiplied each MFI data time-series by its 2008 weighted average assets (see Annex 1 for method). Summing these quantities for each year provided an average for that given year and region.

We also present a simple median of available data. By removing the influence of outliers and potential miscomputed figures, this method often showed trends in the data more clearly than the weighted average.

## **II. ORGANIC GROWTH OF MFIs: 2005 TO 2008**

We were able to capture information on almost three times as many MFIs in 2008 then in 2006. This growth reflects an increase in the number of MFIs reporting due both to newly formed MFIs and to increased capture of reports by MIX and other data sources. To examine what we call “organic” growth trends among existing MFIs, we analyzed those institutions that were part of the 2006 study. Of the 239 MFIs represented in the 2006 study, two had shut down (SAMBALI Philippines, Bank Dagang Bali Indonesia), six had merged (Caja Sur, Caja Nur, Epdyme Crear Tacna into CRAC Nuestra Gente in Peru and Ai-Ken, various NGOs into Kompanion in Kyrgyzstan), and 12 had been removed from the public MIX database. Of these 12, some had closed (e.g. Citi Savings and Loans Ghana) and some had folded into larger organizations that were no longer supplying unconsolidated information (e.g. Banque Union Haitienne and Solucion Financiera de Credito Peru). As above, we also removed Bank Rakyat Indone-

sia, Banco Caja Social in Colombia, and KMB in Russia from the list. Thus, of the original 239 MFIs presented in 2006, we were therefore comfortable using data from 211 for this section of today's study.

Microfinance institutions grew rapidly between 2005 and 2008 in all regions except the Middle East and North Africa (see Table 1). Both assets and equity increased substantially. The 2006 study identified a clear aggregate trend towards higher leverage, with total assets tripling while total equity only doubled. This trend seems to have abated with a nearly balanced 172 percent increase in assets and 162 percent increase in equity. With aggregated, weighted average information, however, the data are biased towards larger MFIs. The median capital asset ratio of MFIs shows a different picture. The median capital asset ratio of these MFIs was 20.5 percent in 2005 and 15.6 percent in 2008. This might reflect the migration to an 'optimal' size and leverage ratio as the industry matures. As discussed below, an even stronger indication of this phenomenon is seen on a region-by-region basis.

TABLE 1: GROWTH IN ASSETS AND EQUITY OF THE '2006 MFIS'

Regions	2006 MFIs	Total Assets (US\$ millions)		% Change	Total Equity (US\$ millions)		% Change
		2005	2008		2005	2008	
<b>Africa</b>	39	756	2,276	201	173	521	201
<b>EA&amp;Pac*</b>	64	302	1,705	465	91	356	291
<b>EE&amp;CA*</b>	34	2,862	7,139	149	325	844	160
<b>LA*</b>	50	2,900	7,090	144	466	994	113
<b>ME&amp;NA*</b>	3	23	37	61	20	25	25
<b>SA*</b>	21	535	1,833	243	86	305	255
<b>Total</b>	<b>211</b>	<b>7,377</b>	<b>20,080</b>	<b>172%</b>	<b>1,161</b>	<b>3,046</b>	<b>162%</b>

TABLE 2: GROWTH IN LOAN PORTFOLIOS OF THE '2006 MFIS'

Regions	2006 MFIs	Loan Portfolio (US\$ millions)		% Change	Number of Borrowers (Thousands)		% Change
		2005	2008		2005	2008	
<b>Africa</b>	39	459	1,449	216	1,775	3,124	76
<b>EA&amp;Pac</b>	64	231	1,231	433	627	1,238	97
<b>EE&amp;CA</b>	34	1,815	5,068	179	685	1,449	112
<b>LA</b>	50	2,321	5,662	144	2,537	5,157	103
<b>ME&amp;NA</b>	3	17	31	82	24	42	75
<b>SA</b>	21	340	1,089	220	2,754	9,550	247
<b>Total</b>	<b>211</b>	<b>5,184</b>	<b>14,528</b>	<b>180%</b>	<b>8,402</b>	<b>20,754</b>	<b>147%</b>

TABLE 3: GROWTH IN DEPOSIT PORTFOLIOS OF THE ‘2006 MFIS’

Regions	2006 MFIs	Deposit Portfolio (US\$ millions)		% Change	Number of Depositors (Thousands)		% Change
		2005	2008		2005	2008	
Africa	32	376	1,282	240	2,370	7,100	200
EA&Pac	36	99	605	511	419	951	127
EE&CA	18	1,100	3,978	262	1,506	4,829	220
LA	27	1,208	3,137	160	1,308	3,147	140
ME&NA	1	0. 032	0. 013	(40)	0. 84	15	1,700
SA	18	64	251	292	2,005	1,735	(13)
<b>Total</b>	<b>132</b>	<b>2,847</b>	<b>9,254</b>	<b>225%</b>	<b>7,609</b>	<b>17,764</b>	<b>133%</b>

\* EA&Pac = East Asia, Pacific; EE&CA = Eastern Europe, Central Asia; LA = Latin America; ME&NA = Middle East, North Africa; SA = South Asia

The data show a continued trend towards larger loan sizes, but here too the trend has slowed substantially. The 2006 study showed a tripling of loan portfolio size, next to a less than doubling of the total number of borrowers. The 2005 to 2008 period showed a more balanced picture with an increase in portfolio size of 180 percent and in number of borrowers of 147 percent. This would imply a steady, slowly increasing average loan size for the aggregate. The median loan portfolio size, however, again shows a significantly different picture. The median average loan balance for the global aggregate was \$593 in 2005 and \$958 in 2008, an increase of 62 percent. This is further evidence of unequal ‘growth’, perhaps due to different structural or institutional pressures between different sized and maturity MFIs.

There has also been much discussion of an increased effort in using deposits to fund MFI loan portfolio, and the 132 deposit-taking institutions represented in the 2006 list of MFIs show some evidence of this. The past three years have seen a 225 percent increase in the size of deposit portfolios, but only a 180 percent increase in the size of loan portfolios. There is also some evidence of a steady increase in the average deposit size, reflected in the only 133 percent increase in depositors over the three year period. The median deposit balance showed a similar trend, increasing from \$238 in 2005 to \$316 in 2008, an increase of 32 percent. One of the problems with average deposit balance series, however, is the high degree of annual variability intra-region and even year-to-year at a given institution. This may reflect the need for MFIs to improve the quality of their reporting on deposits, which lags that of credit.

### III. TRENDS BY REGION, HIGHLIGHTS FROM THE ‘2006 MFIS’

*Africa.* Relative to other regions, the lag between loan portfolio size and growth in number of borrowers was greatest in Africa. This is also reflected in the median loan balance, which increased from \$194 to \$393, a 105 percent increase (27 percent annually). African MFIs, however, seem to have maintained a relatively strong commitment to low-income depositors. Median deposit sizes increased from \$65 to \$92, a 40 percent increase (12 percent annually), which is in keeping with the broader trend described above. African MFIs have also shown maintenance and even a reduction of overall leverage. The median capital asset ratios decreased from 32 percent in 2005 to 26 percent in 2008. This is still below the aggregate median and median of other regions (except Middle East, North Africa).

*East Asia and Pacific.* This region has shown the most explosive growth and in some ways greatest change over the past three years. East Asian MFIs' growth in number of borrowers significantly lagged the growth in loan portfolio size. This is also reflected, but not quite to the same extent, in the median loan balance, which increased from \$366 to \$519, a 42 percent increase (12 percent annually). Similarly, growth in the number of depositors significantly lagged the growth in the deposit portfolio size. Here, too, the median deposit balance, which increased by 50 percent (15 percent annually), from \$180 to \$270, lagged the average rate of growth. East Asian MFIs also heavily embraced leverage during this period. Assets increased substantially, while total equity growth lagged. The median levered MFI in this region, however, followed the aggregate global trend, increasing their leverage by 26 percent (approximately 8.0 percent annually). This implies that the larger MFIs within the region significantly increased their leverage during this period, while smaller MFIs followed the general aggregate trends. It is possible that this reflects the ability of larger MFIs in this region, perhaps due to implicit government support, to disproportionately benefit from economies of scale.

*Eastern Europe and Central Asia.* This region continues to issue the largest average loans. The asset-weighted average and median loan size increased at a similar rate as the aggregate global average and median loan size. However, the increase in deposit portfolio size outpaced the global average deposit portfolio size rate, evidence that the region's MFIs are expanding their deposit operations to fund loan portfolios (financial intermediation). The median deposit balance increased from \$656 to \$1,476, a 125 percent increase (31 percent annually) over the period, however, shows a tendency for Eastern European and Central Asian MFIs versus those of other regions to target larger depositors. On average, the MFIs in this region maintained a fairly constant leverage between 2005 and 2008. The median MFI, however, shows an increasing leverage, with the median capital asset ratio decreasing from 24.6 percent to 14 percent over the period. Of all regions, this was the starkest evidence of migration to an 'optimal' leverage ratio.

*Latin America.* The Latin American MFI sector continues to show itself to be the most mature. The MFIs showed a moderate increase in median loan balance of 57 percent (16 percent annually), from \$926 to \$1,454, which is in-line with the global aggregate. Interestingly, while the average deposit balance showed an increase, the median deposit balance showed a 34 percent (13 percent annually) decrease from \$1,416 to \$933 over the period. This, coupled with the general trend of increased financial intermediation, is evidence of a 'healthy' increase in deposit activity. Latin American MFIs seem to be more successful in expanding their deposit services to lower income individuals than the other regions. The average and median leverage ratio were also relatively stable (see Table 1). The median capital asset ratio was at 13.8 percent in 2005 and 14.1 percent in 2008. This statistic fits into the 'optimal' leverage ratio thesis described above; the Latin American MFI sector was the earliest to develop and therefore the earliest to equilibrate.

*Middle East and North Africa.* This region continues to be the least developed microfinance sector. Interpreting data between 2005 and 2008 was difficult because we were only able to obtain data from three commercial institutions. Leverage continues to be extremely low, with the capital asset ratio of the MFIs decreasing from 92 percent to 82 percent during this period. Although MIX does not provide credible information on the breakdown of raised versus donated equity, this attribute could signify a heavy reliance on donations to fund operations.

*South Asia.* South Asian MFIs have shown a consistent commitment to low-income borrowers and depositors. Average loan balances increased only slightly, while median loan balances actually decreased

4 percent (1 percent annually), from \$140 to \$135 over the period. Average deposit balances increased significantly, albeit from a small base, while median deposit balances rose 65 percent (18 percent annually) from \$31 to \$51. South Asia has also consistently been the most levered of the regions represented. Leverage, however, has been relatively stable over the period. The asset weighted capital asset ratio rose from 16 percent to 16.6 percent, while the median capital asset ratio fell from 13.3 percent to 12.6 percent, indicating that smaller MFIs in the region are more heavily levered than larger MFIs and going against our ‘optimal’ leverage thesis. This might reflect regulatory and political considerations by larger, more public MFIs in India and Pakistan, or reflect the explosive growth projected in the region.

#### IV. CHARACTERISTICS OF MFIs: 2008 SNAPSHOT AND TRENDS

For the remainder of this study, we characterize the commercial microfinance industry from 2005 to 2008 using the core analytic base of 619 MFIs described in the MFI Identification and Scope Section. To reiterate, for a given variable we were able to find up-to-date information on approximately 500 MFIs. However, each variable’s time series does not represent the same 500 MFIs and there are no clear differences between the MFIs represented in each time series. As mentioned above, differences in representation only occur in smaller MFIs, which collectively represent less than 1 percent of total MFI assets. We therefore felt comfortable in presenting aggregate and regional data without normalizing for these differences.

*Size and Distribution Metrics.* All regions showed an increase in the number of MFIs represented and assets under management. This picture shows a substantial increase in the size of MFIs, giving further evidence of the industry’s explosive organic growth. Ignoring MENA, which, as described above, seems to have institutional barriers to commercial microfinance, the variability in growth rates correlate well to the relative maturities of the markets in 2005. Asia showed the most robust growth, while Latin America and Eastern Europe, the markets with the longest development history, showed lower growth in assets. This trend is also shown in Figure 1, where Asia (and to a lesser extent Eastern Europe) have expanded their share of total equity at the expense of Latin America.

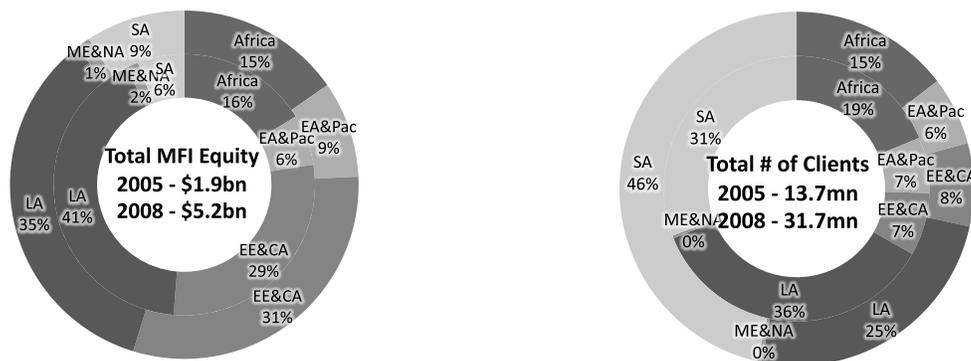
TABLE 4: GROWTH IN ASSETS

Regions	Number of Institutions 2008	% Change from 2005	% Change		Assets (US\$ Millions)		% Change
			2005	2008	2005	2008	
Africa	93	19	1,123	3,337	197	7,100	200
EA&Pac	101	40	475	2,362	397	951	127
EE&CA	127	12	3,677	9,931	170	4,829	220
LA	112	27	4,920	11,823	140	3,147	140
ME&NA	9	29	40	185	363	15	1,700
SA	55	19	834	2,815	237	1,735	(13)
<b>Total</b>	<b>497</b>	<b>23%</b>	<b>11,068*</b>	<b>30,453</b>	<b>175%</b>	<b>17,764</b>	<b>133%</b>

\* This includes MFIs which listed data on MIX ex-post their first submission to MIX (i. e. some data is not included in 2006 study)

*Equity, Assets, Borrowers and Depositors.* As we can see in Table 4 and Figures 1 and 2, South Asia has gone from representing a third to half of borrowers, while its asset and equity bases comprise a much smaller percentage of the global total. This trend was highlighted in the 2006 study. South Asia has rapidly grown its loan portfolio, asset and equity base, while maintaining its relatively low average and median loan balances. This growth reflects the dynamism of Indian organizations and well-known techniques for scale-up of group lending in the region. As described earlier, South Asia has also demonstrated higher leverage than other regions. The leverage reflects the easy access to loan capital by Indian MFIs due to private sector lending target efforts by the government.

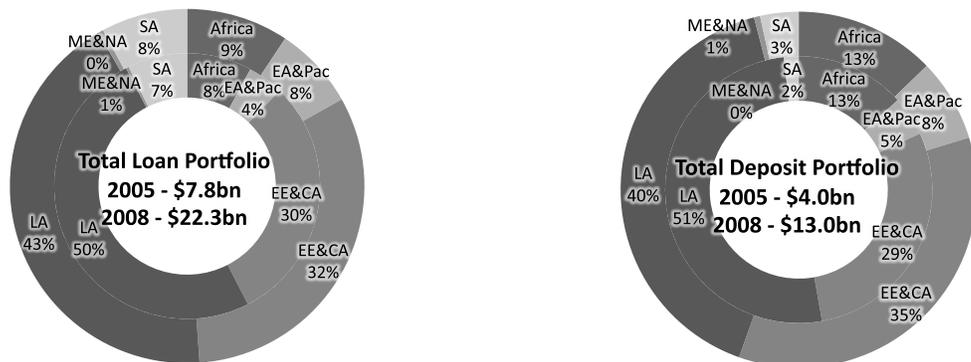
FIGURES 1-2: TOTAL EQUITY & CLIENTS (2005 INTERNAL, 2008 EXTERNAL CIRCLE)



Figures 3 and 4 also give an indication of each region’s relative commitment to financial intermediation. Comparing Figure 4 to Figure 3, we see that South Asia has an underrepresented deposit versus loan portfolio, reflecting the regulatory restrictions on deposit-taking by MFIs and the prioritization of savings products in Africa.

Above we described how deposit growth outpaced loan growth in the Eastern Europe, Central Asia regions for the 2006 study MFIs. We claimed that this is evidence that the region is successfully pushing financial intermediation. Figures 3 and 4 illustrate this phenomenon, but not to the same extent as indicated in Tables 2 and 3. Digging deeper, one notes that 50 percent of MFIs from the 2006 study are deposit-taking institutions, while only 17 percent of today’s broader list take deposits. Assuming that the MFIs in the 2006 study are more mature, one can surmise that deposit-taking is more prevalent and more successful among larger, more established MFIs than among newer MFIs.

FIGURES 3-4: TOTAL LOAN AND DEPOSIT PORTFOLIOS (2005 INTERNAL, 2008 EXTERNAL CIRCLE)



*Relative Concentration.* In the 2006 study, we looked at the size distribution of MFIs in totality and on a regional basis. Overall, the study showed a steep increase in the number of ‘small’ MFIs (i. e. those MFIs with less than \$2M in equity) and the number of ‘large’ MFIs (i. e. those with greater than \$20M in equity). In particular, Asia, which included both East Asia and South Asia in 2006, and South America showed substantial concentration of MFIs with a large number of borrowers.

In today’s study, we have created a modified Herfindahl Index (see Annexes 1 and 3), which is often used to analyze the ‘degree’ of concentration of companies and monopolistic potential in particular countries and industries. As a proxy for the traditional metric used (i.e. market share), we used assets (Table 5). As we are summing the squared weights of metrics for individual MFIs, a more highly concentrated MFI industry would exhibit a higher Herfindahl Value (HV). Traditionally, the United States Government, for example, has used a HV of > 0. 18 to flag the potential for high concentration and monopolistic behavior [<http://www.justice.gov/atr/public/testimony/hhi.htm>].

TABLE 5: HERFINDAHL VALUES FOR VARIOUS COUNTRIES

Regions	Countries	Metric Used: Assets	
		2005	2008
Africa	Ghana	0. 146	0. 155
	Kenya	0. 380	0. 795
EA&Pac	Indonesia	0. 340	0. 661
	Philippines	0. 0624	0. 0532
EE&CA	Russia	0. 317	0. 228
	Tajikistan	0. 337	0. 0602
LA	Mexico	0. 395	0. 292
	Peru	0. 0972	0. 0871
SA	India	0. 128	0. 152
	Pakistan	0. 630	0. 298

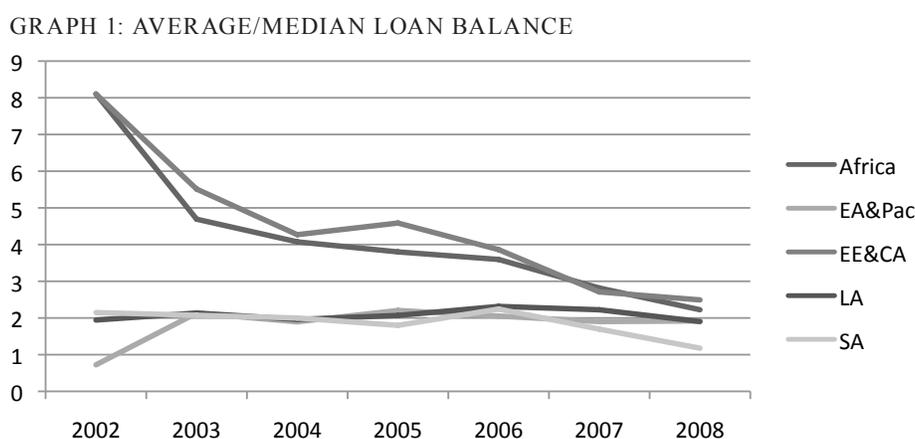
The HVs presented in Table 5 have some correlation to the assertions presented earlier in the study. East Asia and Pacific overall showed the highest degree of concentration. However, as Table 5 shows, there was strong country-by-country variation. When looking at these results, it is important to keep in mind the Herfindahl Index’s major regional bias. Although, for example, the Philippines show a low Herfindahl value, because the country is comprised of many disparate islands, competition might be more monopolistic on an island-by-island basis.

Latin America and Eastern Europe, Central Asia, the more mature regions, have a decline in their Herfindahl values. Even with the overall, aggregate rapid growth of the industry, these two regions continue to show a relatively high degree of competition and well-balanced growth.

Interestingly, there also seems to be evidence of an initial tradeoff between competition and growth. Although difficult to pinpoint exactly, this seems most prevalent in countries where growth has been rapid and particular MFIs have captured a disproportionate percentage of the growth. For example, in Kenya and India, Equity Bank and SKS, respectively, have become dominant players, and this is reflected in rising HVs. Over time, however, as illustrated by Mexico and Peru, the HV values fell, suggesting that successful MFIs in those countries have attracted competitors.

*Loan and Deposit Sizes.* In each region, as expected, median loan sizes are less than mean (i. e. loan portfolio weighted) loan balances. This implies that MFIs with larger loan portfolios are offering larger loan balances than smaller MFIs. The skewing of the distribution of loan balance sizes evidences three possible drivers: (1) long-term clients, who tend to be with larger, established MFIs, are securing larger loans as they build a credit history, (2) larger MFIs, with better access to cheap funding, are moving away from smaller balance borrowers and/or (3) larger MFIs target larger new clients.

We analyzed the ratio of average/median loan balance time series in order to shed light on which driver dominates within our representative mix of commercial MFIs. It was assumed that a time series of a ‘ratio’ would neutralize any effect of economic growth within the region and, due to the explosive growth in the number of borrowers, loan portfolio size and number of MFIs, that existing, long-term clients would have a muted effect on year-to-year variation of the ratio.



This ratio reflects the degree to which the regions’ loan distribution differs from being ‘normal’ or bell-shaped. A ratio greater than one indicates a positively skewed distribution, where the average is higher than the median. An increase in the ratio would indicate a targeting of high-or reduction of low-income borrowers and a falling ratio would reflect a broadening of outreach among core clients. The Middle East, North Africa region was again removed from the data series because of the few represented MFIs. As Graph 1 demonstrates, each region has shown a downward trend or leveling of the ratio.<sup>2</sup>

*Risk Management.* For MFI portfolios, good risk management involves understanding prospective loan losses and provisioning for them. Accordingly, another area studied was a ‘provision ratio’: PAR-30 over the allowance for loan impairment. The allowance for loan impairment, as defined by the MIX, is the total portion of the gross loan portfolio that has been expensed (contra account provision) in anticipation of losses due to default. PAR-30 is the outstanding balance of portfolio past due more than 30 days, net of any write-offs.

It was thought that a ratio of these metrics might provide insight into how MFIs are managing their loss expectations. To calculate the ratio for each region, we took MIX data on loss provision and PAR-30 ratio, weighted them according to the MFI’s asset or loan portfolio size, respectively, and multiplied

2. Note that for the EE&CA region, the inclusion of KMB bank, with its increase in average loan balance from \$7,800 in 2005 to \$28,000 in 2008, would have moved the time series ratio higher over this period.

them by either the region’s total assets or loan portfolio. One would expect that if an MFI analyzed and managed loss expectations in a proper historical context, then the ratio of these two metrics would consistently be very close to one. That is, a proper risk management strategy is to have the loss allowance, set aside in expectation of defaults on loans, nearly equal to troubled loans.

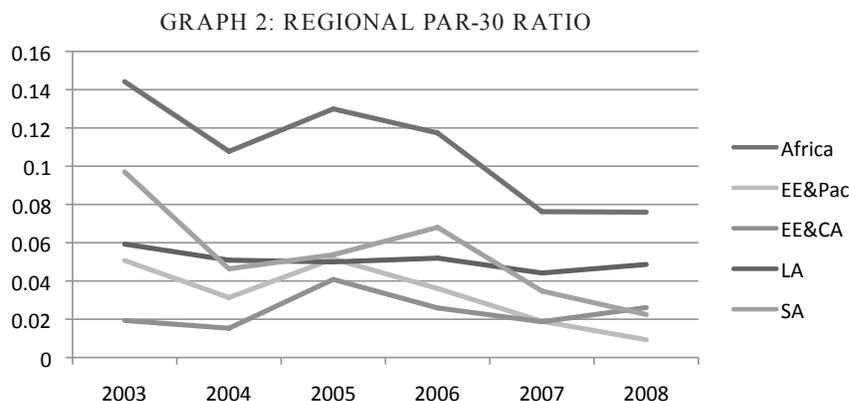


TABLE 6: “PROVISION RATIO” FOR VARIOUS REGIONS

Region	Risk Ratio		Standard Deviation 2002-2008
	2005	2008	
Africa	2.62	1.53	1.25
EA&Pac	6.43	1.38	4.83
EE&CA	2.50	1.53	0.69
LA	1.94	1.24	0.46
SA	2.04	3.32	3.95

This simple exercise showed some interesting results. Looking only at the PAR-30 ratio (Graph 2), Africa seems to be the riskiest MFI market. The other markets seem to have a PAR-30 ratio consistently around 5 percent or lower of total loan portfolio size. Table 6, however, shows a more complex picture.

Overall, the MFI industry seems to be improving its risk management of loan losses. In all regions, other than South Asia, the provision ratio has been trending lower, towards one, over the past three years. Hence, African MFIs seem to be effectively managing their relatively higher historical PAR-30. Measures of consistency, i. e. standard deviation of the provision ratio for each region between 2002 and 2008 (7 data points), show that the management of default risk in Asia (East and South) seems to lag the other regions. From this perspective, although African lenders show an almost two times higher default rate than Asia, larger, more established African MFIs are proving themselves more adept in managing this risk than their Asian counterparts. It is important to note, however, that all these figures and assertions could change substantially with post-crisis, 2009 data.

## V. COMPONENTS OF ROE: TRENDS ANALYZED

The MIX does not explicitly provide profit margin data. We therefore used the Dupont formula to deconstruct trends in the three components of ROE. The formula describes the multiplicative break down of ROE into the inverse capital asset ratio (assets/equity), the financial revenue ratio (revenue/assets) and the profit margin (profit/revenue).

*Inverse Capital Asset Ratio.* As mentioned in earlier sections, generally, there has been a steady trend towards higher leverage. However, as Table 7 shows, MFIs are also exhibiting a degree of mean reversion, with higher levered regions deleveraging versus lower levered regions and vice versa.

TABLE 7: INVERSE CAPITAL ASSET AND FINANCIAL REVENUE RATIOS

Region	Median Inverse Capital Asset Ratio		Financial Revenue Ratio	
	2005	2008	2005	2008
Africa	3.64	3.86	0.22	0.24
EA&Pac	5.75	5.73	0.24	0.26
EE&CA	3.10	3.91	0.21	0.27
LA	5.92	6.02	0.28	0.31
ME&NA	1.31	2.65	0.21	0.25
SA	9.15	6.57	0.16	0.20
<b>All Regions</b>	<b>4.68</b>	<b>5.02</b>	<b>0.23</b>	<b>0.26</b>

It was noticed that especially in the past three years, MFIs in the Middle East and North Africa region have significantly and consistently increased leverage. South Asia and Latin America continue to be the most highly levered MFI regions. Latin American leverage has been steady and could reflect the relative maturity of the market.

*Financial Revenue Ratio.* Assuming a less competitive, price-taking market, the second component, the financial revenue ratio, can be thought of as an efficiency proxy. The more efficient an MFI, in terms of cash flow management, the higher the revenue generation on a per asset basis. However, as noted in the “Relative Concentration” section above, this assumption of a competitive environment might not be true. As Table 7 and our time series indicate, there has been a steady increase of the median ratio within each region between 2005 and 2008. In most regions, the median and weighted average financial revenue ratios were very close to one another. In East Asia Pacific and Eastern Europe/Central Asia, however, between 2005 and 2008, the asset weighted average ratio was approximately 75 percent and 65 percent of the median, respectively.

*Profit Margin.* The profit margin is the final component of ROE. This ratio is primarily operational and interest cost driven. As Table 8 shows, South Asia, ignoring the Middle East North Africa, consistently exhibited the lowest profitability of the regions.

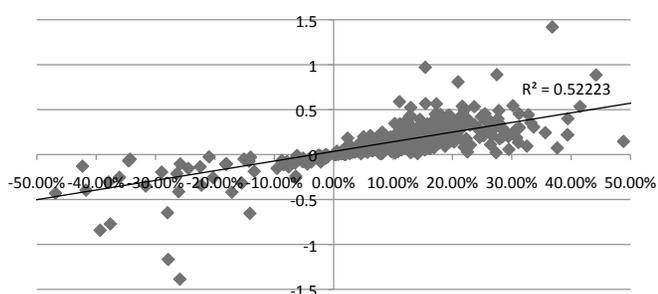
TABLE 8: CHANGES IN PROFIT MARGIN OVER TIME

Region	Median Profit Margin			Difference 2005 - 2007	Difference 2007 - 2008
	2005	2007	2008		
Africa	0.041	0.094	0.060	0.052	(0.035)
EA&Pac	0.14	0.14	0.12	0.0039	(0.025)
EE&CA	0.15	0.14	0.11	(0.011)	(0.024)
LA	0.093	0.10	0.084	0.010	(0.020)
ME&NA	0.086	0.087	0.11	0.000	0.022
SA	0.047	0.053	0.064	0.018	0.012
All Regions	<b>0.10</b>	<b>0.11</b>	<b>0.096</b>	<b>0.0062</b>	<b>(0.014)</b>

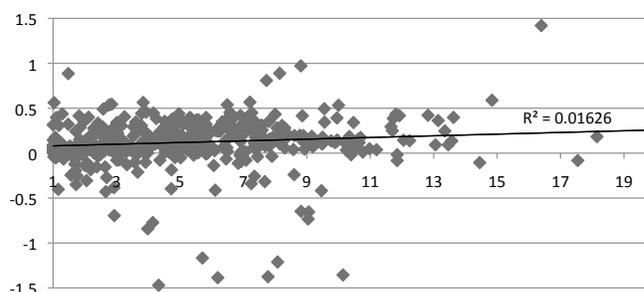
Most interestingly, the median profit margin did exhibit effects from the beginning of the financial crisis, while its effects on the other components were difficult to decipher. As Table 8 demonstrates, most regions' profit margins expanded between 2005 and 2007. In fact, the longer-term time series of global data between 2000 and 2007 shows a steady, year-over-year median margin expansion from 0.048 to 0.11. In a clear break with this trend, however, the global data series showed a substantial drop in some regions' profitability in 2008.

*Attribution.* The Dupont equation also allows us to track trends in the attribution of ROE dispersion to its components. It was thought that this might allow us to understand the degree to which variation in

GRAPH 3: 2008 PROFIT MARGIN VS ROE



GRAPH 4: 2008 LEVERAGE VS ROE



GRAPH 5: 2008 FINANCIAL REVENUE RATIO VS ROE

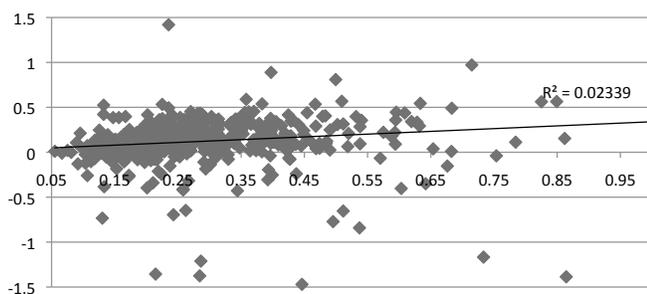


TABLE 9: ATTRIBUTION OF ROE TO PROFIT MARGIN

Region	Profit Margin R <sup>2</sup>		R <sup>2</sup> 2004 - 2008	
	2005	2008	Max	Min
Africa	0.38	0.67	0.68	0.37
EA&Pac	0.48	0.29	0.73	0.29
EE&CA	0.37	0.66	0.66	0.37
LA	0.43	0.46	0.68	0.35
SA	0.39	0.60	0.96	0.39
Total	<b>0.36</b>	<b>0.52</b>	<b>0.53</b>	<b>0.36</b>

ROE is driven by profit margin, financial revenue ratio or leverage. To do this we regress ROE to each component on a global and regional basis. The R<sup>2</sup> value is a statistical estimate of the percentage of ROE variability that is attributed to a particular component.<sup>3</sup>

Graphs 3-5 and Table 7 show the degree and consistency with which profit margin is the primary driver of variation in ROE. This implies that on an MFI-by-MFI basis, investors concentrating on improving corporate governance and other operational issues will continue to yield relative dividends. Differences in ROE show little attribution to variability in an MFI's leverage and financial revenue ratio.

Table 8 below represents a similar regression run with respect to leverage and the financial revenue ratio. Generally, it was found that the financial revenue ratio was more important than leverage in determining ROE variability. The analysis, however, indicates some differences between regions. In East Asia, Pacific, for example, leverage has traditionally played a more important role. Interestingly, in South Asia, where leverage has traditionally been high (Table 7), the ROE showed a greater correlation to the financial revenue ratio than to leverage.

TABLE 10: ATTRIBUTION OF ROE TO LEVERAGE AND FINANCIAL REVENUE RATIO

Region	Leverage R <sup>2</sup>		R <sup>2</sup> 2004 - 2008		Financial Revenue R <sup>2</sup>		R <sup>2</sup> 2004 - 2008	
	2005	2008	Max	Min	2005	2008	Max	Min
Africa	0.00	0.0016	0.019	0.0000	0.16	0.10	0.28	0.00
EA&Pac	0.29	0.092	0.35	0.073	0.038	0.20	0.20	0.023
EE&CA	0.12	0.020	0.12	0.019	0.17	0.056	0.39	0.056
LA	0.22	0.082	0.22	0.019	0.27	0.00	0.27	0.00
SA	0.00	0.088	0.088	0.00	0.17	0.028	0.25	0.00
<b>Total</b>	<b>0.044</b>	<b>0.016</b>	<b>0.044</b>	<b>0.0036</b>	<b>0.13</b>	<b>0.023</b>	<b>0.13</b>	<b>0.012</b>

This analysis could be interesting as our time series for these ratios expands, the industry matures, and operational and governance consensus is achieved. Attribution effects might also provide some leading insight, especially in a crisis situation, into the relative quality of a loan portfolio and the ability of an MFI to withstand a downturn.

## VI. MFI OWNERSHIP STRUCTURE

In keeping with the analyses done in 2004 and 2006, we have also analyzed the ownership structure of representative commercial MFIs.

Table 9 below gives the results of a CMEF member survey we conducted. The first column of each investor class describes the number of investors and the second the percentage of ownership for those investors. Members responded with the composition breakdown of 43 MFIs. The 2006 survey had a better-balanced representation, with the inclusion of 5 Eastern European MFIs.

What is clear from the picture presented in 2010 versus 2006 is the greater diversity of investors involved today. In 2006, international private social, international public (IFC, FMO, etc. ) and local private insti-

3. This linear regression is only effective when the variability of one component of ROE dominates the variability of the other two. This allows us to estimate a nonlinear function as linear.

tutional investors comprised the lion's share of equity ownership. Today, while international public and private social investors and local private institutions continue to hold large stakes, the original NGOs and local individuals are better represented.

Although it is difficult to say definitively due to the regional bias described above and the composition of respondents (i.e. most Council members are international private social investors), it seems as though three industry maturation phenomena have occurred during the past four years.

- First, the greater number of original NGOs represented probably reflects an acceleration of MFI NGO to for-profit transformation. As transformation becomes a better understood process, we can expect this trend to continue.
- Second, the shift of stakes from international to local investors likely reflects a greater willingness of local capital to fund MFIs. This is in keeping with the theme of greater financial intermediation we saw in earlier sections of the study. Here, too, one would expect this trend to continue due to a greater understanding of the business model and profit-potential of MFIs.
- Third, beyond transformation, the median stake of the original NGO has fallen from 45 percent to 30 percent between 2006 and 2010. This could reflect a continued divestment in NGO stakes of already transformed MFIs. As the industry moves away from its non-profit roots, one would expect this process of divestment to continue.

TABLE 11: NUMBER OF INVESTORS AND PERCENTAGE OF OWNERSHIP FOR REPRESENTATIVE MFIs

Region	Original NGO		Local NGOs	Intl' Private Social Investors		Intl' Private Commercial Investors		Intl' Public Institution		Local Private Institutions		Local Public Institutions		Local Individual Investors		Staff members of MFI		Not Listed	
	1	26%																	
Africa	1	26%								2	74%								
Africa	1	25%								1	27%			2	48%				
Africa	1	20%								2	37%			2	43%				
Africa	1	45%			1	17%				2	27%			1	11%				
Africa					3	30%			1	20%	3	32%	1	18%					
Africa					1	30%			1	15%	2	55%							
Africa	1	20%								3	80%								
Africa	1	51%			1	11%						1	20%					1	18%
Africa					1	23%				6	77%								
Africa	1	36%								1	25%			2	39%				
Africa					1	24%			1	13%	4	63%							
Africa	1	35%			1	20%								1	45%				
Africa	1	34%	1	34%										3	32%				
Africa	1	35%								2	65%								
Africa	1	11%								1	11%			3	78%				
Africa	1	33%								1	33%			1	34%				
Africa					4	42%			1	7%	3	17%						3	33%
Africa					2	80%								3	20%				
East Asia and Pacific					1	88%										?	12%		
East Asia and Pacific	1	23%			2	52%			1	19%						?	6%		
Latin America	1	49%			3	33%			?	5%				?	13%				
Latin America					?	27%								?	73%				
Latin America					3	36%			1	24%	4	33%						1	7%
Latin America					7	29%	1	2%			4	64%						2	6%
Latin America	1	31%			2	20%					1	29%			1	20%		1	0%
Latin America	1	40%			1	12%			3	35%	1	1%	1	12%					0%
Latin America	1	30%			1	5%								4	65%				
Latin America					1	85%								1	15%				
Latin America	1	88%			1	10%										10	2%		
Latin America					2	41%					4	1%		99	30%	7	27%		
Latin America	1	51%			4	44%			?	3%				?	2%				
Latin America	?	23%			?	27%								?	50%				
Latin America	1	25%			8	62%			1	5%				80	6%	20	2%		
Latin America							2	30%			2	68%		1	1%	1	1%		
Latin America					4	78%			1	7%	1	5%						?	10%
South Asia					3	67%								1	8%			11000	25%
South Asia			?	35%	5				1	15%	3	50%							
South Asia					1	24%								4	76%				
South Asia	1	18%					4	53%						1	24%	1	5%		
South Asia							5	72%					1	2%	1	26%			
South Asia							7	73%			2	5%	1	5%	1	17%			
South Asia					3	30%			1	19%	1	51%							
Various Regions	1	3%			1	22%	2	39%	3	36%									

## ANNEX 1: EQUATIONS

### RATIOS

$$\text{Capital Asset Ratio} = \frac{\text{Total Equity}}{\text{Total Assets}}$$

$$\text{Leverage} = \frac{1}{\text{Capital Asset Ratio}}$$

$$\text{Financial revenue ratio} = \frac{\text{Adjusted Revenue}}{\text{Total Assets}}$$

### DUPONT EQUATION:

$$\text{Return on Equity} = (\text{Leverage}) * (\text{Profit Margin}) * (\text{Financial Revenue Ratio})$$

$$= \frac{\text{Total Assets}}{\text{Total Equity}} * \frac{\text{Net Earnings}}{\text{Adjusted Revenue}} * \frac{\text{Adjusted Revenue}}{\text{Total Assets}}$$

$$\text{Profit Margin} = \text{ROE} * (\text{Capital Asset Ratio}) * \left( \frac{1}{\text{Financial Revenue Ratio}} \right)$$

$$\text{Herfindahl Value} = \text{HV} = \sum_{i=1}^n \left( \frac{\text{index}_i}{\sum \text{index}_i} \right)^2, \text{ where index} = \text{equity or assets}$$

### INTERPOLATION

$$\text{Rate of growth} = \left( \frac{\text{Metrics}_T}{\text{Metrics}_0} \right)^{1/T} - 1$$

$$\text{Metric}_{st} = (\text{Metrics}_0)(1 + \text{Rate of Growth})^t, \text{ where } 1 \leq t \leq T$$

### WEIGHTING OF METRICS

$$\text{Weight Factor}_t = \left( \frac{\text{Growth Metric}_{it}}{\sum \text{Growth Metric}_{i,t}} \right) \quad \text{Total Average Value}_t = \sum_{i=1}^N \text{metric}_{i,t} \left( \frac{\text{Growth Metric}_{it}}{\sum \text{Growth Metric}_{i,t}} \right)$$

## ANNEX 2: TABLES, FIGURES AND GRAPHS

TITLES	PAGE #
Table 1: Growth in Assets and Equity of the ‘2006 MFIs’	5
Table 2: Growth in Loan Portfolios of the ‘2006 MFIs’	5
Table 3: Growth in Deposit Portfolios of the ‘2006 MFIs’	6
Table 4: Growth in Assets	8
Table 5: Herfindahl Values for Various Countries	10
Table 6: “Provision Ratio” for Various Regions	12
Table 7: Inverse Capital Asset and Financial Revenue Ratios	13
Table 8: Changes in Profit Margin Over Time	14
Table 9: Attribution of ROE to Profit Margin	14
Table 10: Attribution of ROE to Leverage and Financial Revenue Ratio	15
Table 11: Number of Investors and % of Ownership for Representative MFIs	17
Figure 1: Total Equity for 2005 and 2008	9
Figure 2: Total Clients for 2005 and 2008	9
Figure 3: Total Loan Portfolios for 2005 and 2008	9
Figure 4: Total Deposit Portfolios for 2005 and 2008	9
Graph 1: Average/Median Loan Balance	11
Graph 2: Regional PAR-30 Ratio	12
Graph 3: 2008 Profit Margin vs ROE	14
Graph 4: 2008 Leverage vs ROE	14
Graph 5: 2008 Financial Revenue Ratio vs ROE	14

### ANNEX 3: HERFINDAHL VALUES FOR VARIOUS COUNTRIES

Herfindahl (Assets Proxy)								
Africa	2005	2008	EA&Pac	2005	2008	EE&CA	2005	2008
Cameroon	0.394	0.491	Cambodia	0.472	0.473	Armenia	0.456	0.472
Ethiopia	0.261	0.256	China	Na	0.236	Azerbaijan	0.227	0.188
Ghana	0.146	0.155	Indonesia	0.340	0.661	Bosnia, Herzegovina	0.445	0.463
Kenya	0.380	0.795	Philippines	0.062	0.053	Georgia	0.778	0.633
Madagascar	Na	0.301				Kazakhstan	0.252	0.294
Mozambique	0.334	0.580				Kyrgyzstan	0.247	0.238
Nigeria	0.505	0.648				Moldova	0.779	0.345
Rwanda	0.346	0.291				Mongolia	0.630	0.665
Sierra Leone	0.659	0.571				Romania	0.774	0.688
Tanzania	0.854	0.666				Russia	0.317	0.228
Uganda	0.561	0.573				Tajikistan	0.337	0.060
LA	2005	2008	SA	2005	2008			
Argentina	0.553	0.408	Afghanistan	0.774	0.555			
Bolivia	0.502	0.510	India	0.128	0.152			
Brazil	0.500	0.423	Nepal	0.126	0.119			
Colombia	Na	0.492	Pakistan	0.630	0.298			
Ecuador	0.442	0.311	Sri Lanka	0.216	0.214			
El Salvador	0.474	0.446						
Honduras	0.223	0.279						
Mexico	0.395	0.292						
Paraguay	0.289	0.304						
Peru	0.097	0.087						
Herfindahl (Equity Proxy)								
Africa	2005	2008	EA&Pac	2005	2008	EE&CA	2005	2008
Cameroon	0.347	0.474	Cambodia	0.319	0.334	Armenia	0.379	0.459
Ethiopia	0.207	0.206	China	NA	0.283	Azerbaijan	0.185	0.155
Ghana	0.146	0.155	Indonesia	0.536	0.799	Bosnia, Herzegovina	0.298	0.372
Kenya	0.380	0.795	Philippines	0.056	0.049	Georgia	0.424	0.496
Madagascar	NA	0.266				Kazakhstan	0.249	0.404
Mozambique	0.259	0.370				Kyrgyzstan	0.272	0.237
Nigeria	0.528	0.617				Moldova	0.502	0.398
Rwanda	0.456	0.337				Mongolia	0.435	0.596
Sierra Leone	0.862	0.639				Romania	0.477	0.472
Tanzania	0.795	0.658				Russia	0.385	0.239
Uganda	0.443	0.417				Tajikistan	0.236	0.064
LA	2005	2008	SA	2005	2008			
Argentina	0.557	0.445	Afghanistan	0.716	0.434			
Bolivia	0.301	0.281	India	0.093	0.177			
Brazil	0.500	0.629	Nepal	0.222	0.223			
Colombia	NA	0.438	Pakistan	0.583	0.251			
Ecuador	0.381	0.371	Sri Lanka	0.215	0.196			
El Salvador	0.320	0.295						
Honduras	0.210	0.280						
Mexico	0.429	0.328						
Paraguay	0.302	0.274						
Peru	0.083	0.062						