



## **Risky Business**

### **An Empirical Analysis of Foreign Exchange Risk Exposure in Microfinance**

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## EXECUTIVE SUMMARY

Currency risk is an everyday fact of life in microfinance in many parts of the world. However, because of lack of systematic reporting by microfinance institutions (MFIs) and the multifaceted nature of currency risk, understanding of this topic to date has been largely anecdotal. This is the first empirical study to measure the volume, extent, and nature of MFIs' foreign exchange risk. It presents a snapshot, based on 2008 financial data of over 300 MFIs worldwide, representing approximately 60% of the total assets in the industry. By coincidence, 2008 turned out to be one of the most volatile years in global exchange rates that microfinance has seen in its short history. It is hoped that this study will be part of a trend toward more systematic reporting and analysis of currency risk in microfinance that can make the industry more resilient to macroeconomic volatility in the future.

This study looks at currency exposure from different angles to assess its size, the direction of exposure, the potential risk to MFIs' viability, and the effect of currency fluctuation on earnings. By any of these measures, MFIs are overexposed to foreign exchange risk. Key findings of the study are: total industry foreign exchange risk exposure is at least US\$ 6 billion, of which US\$ 1.6 billion is directly held by MFIs, and US\$ 4.5 billion has been onlent in foreign currencies to borrowers. Ninety-four percent of this exposure is in US dollars and euros.

Sixty-five percent of MFIs hold more than a prudent amount of foreign exchange risk exposure on their books as a proportion of their equity. As measured by asset-liability ratio (A-L), only about one-fifth (21%) of all MFIs had prudent A-L ratios in each of the foreign currencies that they held. While it was assumed that most of the A-L imbalance would show excessive foreign currency liabilities, in fact, excess assets were an equal problem. Forty percent of reporting MFIs disclose that they make foreign currency loans to their borrowers. This figure may also be understated due to lack of financial disclosure.

The bottom line impact of this foreign exchange risk exposure was significant. Three hundred and seventy-nine MFIs reported foreign exchange gains or losses in 2008, totaling US\$ 113 million. Notably, nearly as many MFIs gained money as lost it, with gains and losses averaging about one-third of net income. Gains and losses were incurred in MFIs across all regions, legal structures, sizes, and ages of MFIs.

Overall, this study finds that the level, prevalence, and complexity of MFI foreign exchange risk are greater than presumed. Microfinance foreign exchange practices are risky business, with MFIs exposed to currency risk on both sides of the balance sheet, leading to significant gains or losses depending on currency movements. Recommendations to the microfinance industry to address these findings include **development and adoption of industry-wide prudent foreign exchange risk exposure guidelines, expanding availability and use of hedging resources, and additional training and capacity building for MFIs in asset-liability management and overall financial risk management**. Further recommendations include limiting foreign currency onlending; greater MFI tracking, reporting, and disclosure of foreign exchange risk levels;

increased disbursement of local currency loans by cross-border lenders; and regulation at the country level to include mandatory prudent foreign exchange risk limits.

The microfinance industry continues to advance in its understanding of the impact of foreign exchange risk on MFIs. Organizations like MFX Solutions and others are well placed to provide needed foreign exchange hedging products and an increasing array of foreign exchange risk management training and education for MFIs. With participation by all members of the microfinance industry, MFI foreign exchange risk can be better understood and properly mitigated, enhancing long-term access to finance for the poor in developing countries.

## **I. INTRODUCTION**

*“There are many activities of banks that involve risk-taking, but there are few in which a bank may so quickly incur large losses as in uncovered foreign exchange transactions.”*

*-The World Bank<sup>1</sup>*

The majority of cross-border international loans from microfinance investment funds or vehicles (MIVs) and international development finance institutions (DFIs) have been issued to MFIs in hard currency (the US dollar or the euro). MFIs that hold these foreign currency loans are exposed to the risk of a devaluation of their local currency. In some cases, MFI's pass on this currency risk by lending to their customers in foreign currency loans or indexing microloans to the foreign currency exchange rate. While this is widely recognized as a serious problem in microfinance, the extent of MFI foreign exchange exposure has never been empirically measured across the industry. Furthermore, as this study will highlight, the actual foreign exchange risk picture in MFIs is more complicated and multi-faceted than presumed. MFIs hold different foreign currencies, many are holding foreign currency assets in excess of their liabilities (the opposite of conventional wisdom), and risks run in multiple directions sometimes even within the same MFI.

This study reports findings on the foreign exchange risk exposure of 304 MFIs, and foreign exchange gains and losses of 379 MFIs that provided foreign exchange data in their financial disclosures. The 304 MFIs represent roughly 49% of total assets of MFIs reporting to the MIX Market; the 379 represent 61% of total MIX Market MFI assets. Data include US\$ 3.8 billion in MFI foreign currency loans payable. While the data presented provides an overall picture of the industry, it likely *understates* the problem for several reasons. Not all MFIs reported whether or not they carried foreign currencies on their balance sheet. Other MFIs reported foreign currency total assets and total liabilities levels only without disclosing underlying foreign exchange holdings details. Still others did not break down assets and liabilities by currency.

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<sup>1</sup> Van Greuning, Hennie and Sonja Brajovic Bratanovic. *Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management*. Third Edition. Washington, DC: The World Bank, 2009, page 257.

On the other hand, some mismatch data may represent strongly pegged currencies where the risk is minimal. Study methodology details may be found in Appendix 1. Further information about financial disclosure by type of accounting firm that MFIs used may be found in Appendix 2.

MFJ Solutions, with funding support from FMO, commissioned this study to give a detailed portrait of the extent of foreign exchange risk and to identify the scope, prevalence, and impact of current practices on MFIs and their clients.

## II. THE VOLUME OF MFI FOREIGN EXCHANGE EXPOSURE

**Total foreign exchange risk exposure carried by MFIs and their microborrowers is US \$6 billion, consisting of US\$ 1.6 billion held by MFIs, and US\$ 4.5 billion held by borrowers in onlent funds.**

Reporting MFIs hold US\$ 1.6 billion in net foreign exchange exposure (net open position) directly on their balance sheets. Either a positive or negative mismatch can lead to foreign exchange losses depending on the movement of foreign currencies vis-à-vis an MFI's local currency. Foreign exchange exposure measures the volume of MFI exposure, but not its direction, and is therefore calculated on an absolute value basis.<sup>2</sup> A net open position exists when an MFI has either an excess of assets over liabilities in a given foreign currency, called a *long position*, or an excess of liabilities over assets, called a *short position*. A perfectly matched book of assets and liabilities would yield a zero net open position.<sup>3</sup>

Whether an MFI is long or short in a currency will determine whether it gains or loses when there is a change in the exchange rate that affects the cost of its interest or principal payments or the value of its assets. An MFI with a short position in a foreign currency will have a loss if the local currency depreciates because of a rise in the relative cost of its debts as valued in its domestic currency. Conversely, an MFI with a long position in a foreign currency stands to incur foreign exchange losses if the local currency appreciates as the returns it receives on hard currency assets (e.g. its loan portfolio) are worth less. Thus, an MFI can incur foreign exchange gains or losses, unrelated to its core lending business profitability, from exchange rate movements in either direction, depending on whether it is long or short in a foreign currency.

In addition to direct foreign exchange risk exposure on MFIs' books, MFIs have onlent an additional US\$ 4.5 billion to microborrowers in foreign currencies. With the exception of MFI clients operating in dollarized or euroized markets, most of these borrowers are assumed to be operating in local currency and not earning hard currency income. This situation represents

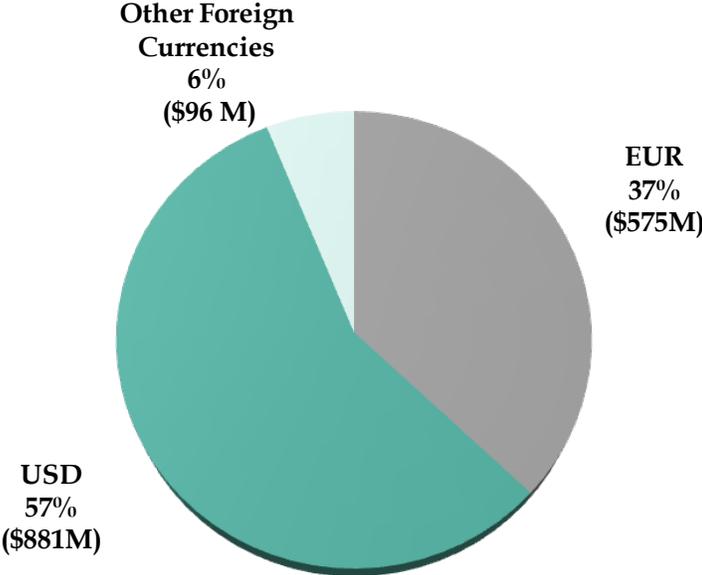
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<sup>2</sup> Aggregating net open position on an absolute value basis is a conservative foreign exchange risk measurement approach.

<sup>3</sup> Assuming that the tenors of all foreign currency holdings are matched.

credit risk and market risk exposure for the industry which, in the event of currency volatility, could cause hardship for MFI clients and losses to the MFI. Thus, the combined reported foreign exchange risk burden on MFIs and their clients is calculated to be US\$ 6 billion.<sup>4</sup> Ninety-four percent of the exposure on MFIs' books is in either US dollars (57%) or euros (37%); only six percent is in other foreign currencies (Graph 1). Graph 2 shows the currency breakdown of onlent foreign exchange risk exposure.

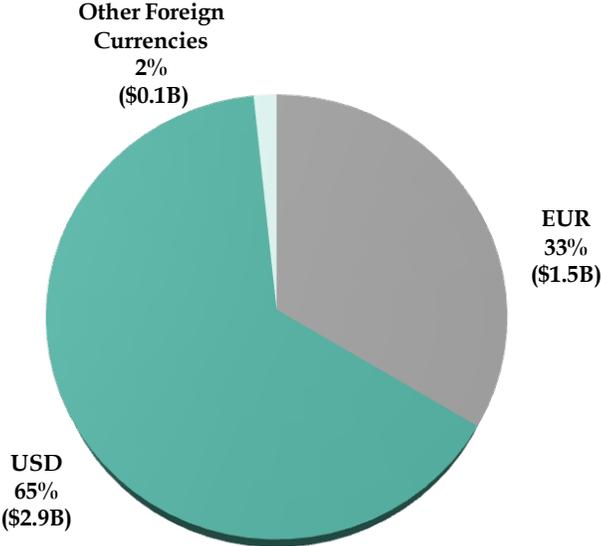
**Graph 1 - Currency Breakdown of MFI Net Foreign Exchange Risk Exposure, 2008**



Source: Microfinance Analytics

<sup>4</sup> US\$ 1.6 billion + US\$ 4.5 billion = US\$ 6 billion due to rounding of figures.

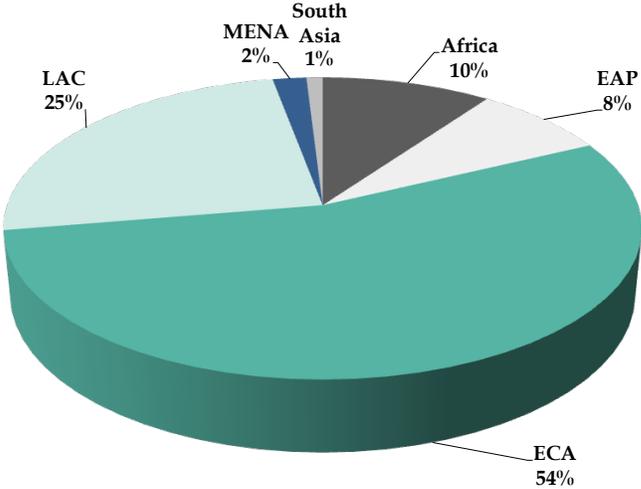
**Graph 2 - Currency Breakdown of Onlent Foreign Exchange Risk Exposure, 2008**



*Source: Microfinance Analytics*

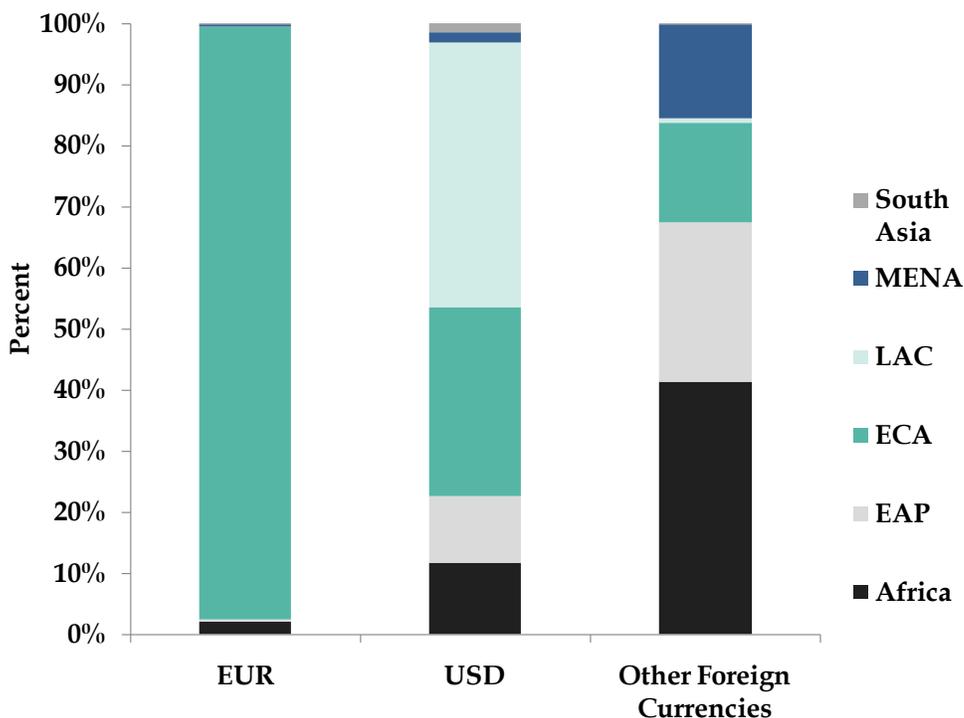
Graph 3 and Chart 1 show the regional breakdown of the US\$ 1.6 billion in MFI foreign exchange risk net open position. MFIs in Eastern Europe and Central Asia (ECA) account for more than half of the global total. ECA and Latin America/Caribbean (LAC) together account for over three-quarters of the open risk position.

**Graph 3 - Regional Composition of Aggregate MFI Net Open Position, 2008**



*Source: Microfinance Analytics*

**Chart 1 –Foreign Exchange Net Open Position by Currency and Region, 2008**



*Source: Microfinance Analytics*

Given the ECA region’s proximity and economic integration with Europe, the bulk (97%) of euro foreign exchange risk exposure is held by Eastern European MFIs. Perhaps more surprising is the extent of dollar exposure in the ECA region (31%), which, though less than that held by Latin American MFIs (43%), is still significant. African MFIs reporting their foreign currency holdings have a high exposure to “other foreign currencies,” primarily Ugandan shillings held by Kenyan MFIs, as well as small amounts of South African rand and British pounds, although these amounts constitute a relatively small part of the total MFI exposure. East and South Asia are not highly exposed relative to their market size because they are generally funded locally.

MFIs in 66 countries hold 21 foreign currencies in addition to their local currency. Appendix 3 provides a complete list of currencies held, broken out by assets and liabilities, as well as currencies in which MFIs lend to their borrowers (net loan portfolio assets), borrow money from creditors (loans payable liabilities), and the number of foreign currencies held per MFI.

A closer analysis of the direction and mix of long and short positions yields some unexpected findings. The most well known source of foreign exchange risk exposure is MFI borrowing from cross-border lenders (MIVs, DFIs, etc.) and then onlending in local currency. This leads to an excess of foreign currency liabilities over assets, a short position. Over the years, this practice

has been widely criticized with MFIs urged to either hedge foreign currency risk, which historically often proved impossible, or balance foreign currency liabilities with foreign currency assets. The US\$ 4.5 billion of onlent funds shows that the latter message has been heard and implemented, albeit by passing on foreign exchange risk to microborrowers. However, the data also show that many MFIs have taken on too many foreign assets and opened up exposure on the asset side of their balance sheet. The direction of MFI balance sheet mismatch will be examined in more detail in the following section.

### **III. MEASURING FOREIGN EXCHANGE RISK**

The previous section addressed the volume of foreign exchange risk exposure. This section describes measures of balance sheet foreign exchange risk, the impact of foreign currency onlending, and foreign exchange risk results on the income statement.

Measuring the volume of open position provides a scaling of the microfinance industry's overall foreign exchange risk exposure, but does not answer the central question: how potentially damaging is the exposure? There are several ways to measure foreign exchange risk that provide a more nuanced picture, each providing different insights. The following sections describe three additional measures of MFI foreign exchange risk: net open position as a percentage of equity, asset-liability ratio, and foreign exchange gains or losses. The metrics are summarized in Table 1.

**Table 1 - Explanation of Key Foreign Exchange Measurement Methods**

Foreign exchange risk term	NET OPEN POSITION	NET OPEN POSITION AS A PERCENTAGE OF EQUITY	ASSET-LIABILITY RATIO (A-L)	FOREIGN EXCHANGE GAINS AND LOSSES
<b>Definition and formula</b>	Foreign currency assets minus foreign currency liabilities per currency. A measure of foreign exchange risk volume. Includes all foreign currency holdings, summed on absolute value basis.	Net open position divided by the MFI's equity, calculated on absolute value basis. [Assets - (Liabilities+ Equity)]/Equity in each foreign currency. Net Effective Open Position = Sum of Net Open Positions.	Assets divided by liabilities. The asset-liability ratio is important because it <i>shows the direction of the mismatch</i> . This allows an MFI to know what will occur if the foreign currency depreciates or appreciates against the local currency.	All foreign exchange gains or losses over the time period on the income statement netted of each other. If the net is positive, a foreign exchange gain is reported as income. A net loss is reported as a foreign exchange expense.
<b>Prudent level</b>	N/A	Maximum 10% in absolute value terms for aggregate net effective open position of all foreign currencies.	0.9 to 1.1 is a matched A-L ratio within a plus or minus 10% range per foreign currency.	No established guidelines for this metric. The amount should not be material, i.e. less than the accounting norm for line item materiality.

Source: Microfinance Analytics

### A) Net Open Position as a Percentage of Equity

**Sixty-five percent of MFIs with foreign currency holdings have an aggregate net open position as a percentage of equity outside of the prudent range.**

*The key currency risk management limit is the net effective open position. The net effective open position of all currencies, added together as absolute values and expressed as a percentage of qualifying capital, should not exceed a predetermined value.*

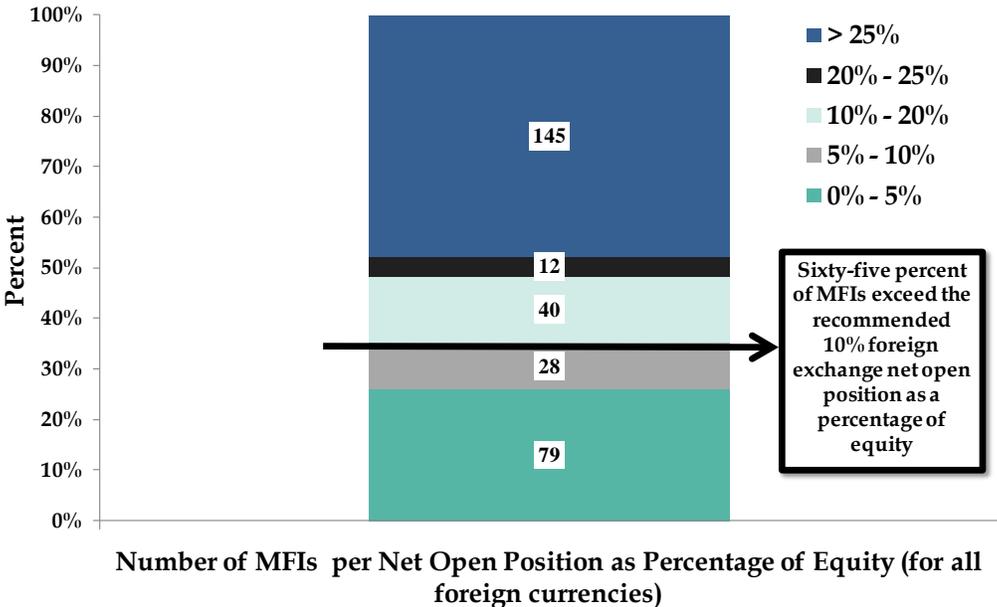
-World Bank<sup>5</sup>

<sup>5</sup> van Greuning and Bratanovic, page 255.

The net open position as a percentage of equity of an MFI is the most widely used foreign exchange risk metric. It scales the MFI’s aggregate net foreign currency long and short positions to the size of its equity base to measure the amount of risk due to foreign exchange exposure. Thus, an MFI with a large equity base has a larger cushion to mitigate the impact of a foreign exchange loss. In some countries, regulation limits total currency exposure as a percentage of equity in microfinance banks and non-bank financial institutions (NBFIs). Some regulated MFIs may use Tier 1 capital in lieu of equity in the denominator.

However, not all MFIs are regulated, nor do all regulated MFIs operate in countries with foreign exchange risk limits. There is not yet a microfinance industry norm for prudent net open position as a percentage of equity limits for MFIs. Publicly available reported and recommended guideline levels range from 10% to 50%; details may be found in Appendix 4. Chart 2 shows the number of MFIs segmented by level of aggregate net open position as a percentage of equity for all foreign currencies.

**Chart 2- Segmentation of MFIs by Aggregate Net Open Position, 2008 (Based on all foreign currencies on an absolute value basis)**



Source: Microfinance Analytics

A high proportion of MFIs with an imprudent foreign exchange risk level means that MFIs’ financial results - profitability, size of equity base, capital adequacy and even solvency - are highly dependent on and vulnerable to the movement of exchange rates over which they have no control.

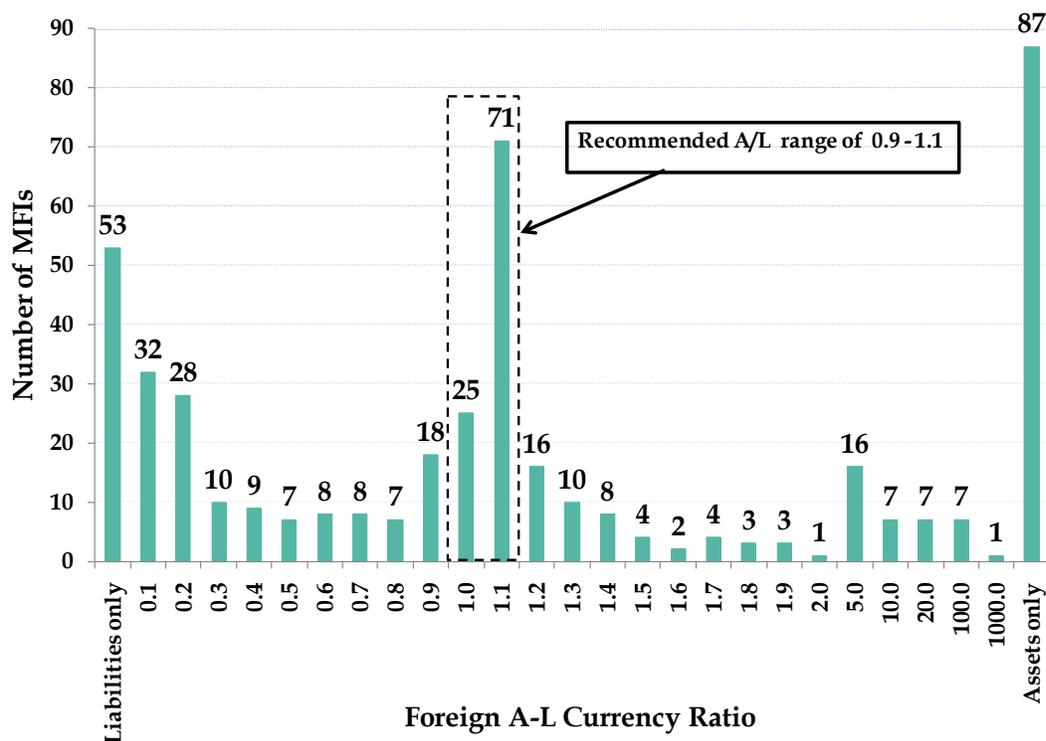
## B) Assets to Liabilities Ratio

**Only 21% of MFIs achieve a prudent A-L ratio per foreign currency within the recommended range.**

The A-L ratio provides a clear way to show the direction and dispersion of foreign currency mismatch risk in each foreign currency. A perfectly matched currency book ratio is 1.0. A prudent A-L ratio range is 0.9 -1.1, allowing for a 10% variation above or below an exactly balanced ratio. A-L ratios greater than one signify that assets exceed liabilities or a long open position; a ratio less than one signifies a short open position. Chart 3 illustrates the range of foreign currency A-L ratios. While 21% fall in the prudent 0.9 to 1.1 ratio range in the middle section of the chart, and 48% hold an imprudent A-L currency portfolio, a number of MFIs cannot measure their foreign currency A-L ratio at all. This can be seen at the far ends of Chart 3, indicating that the distribution has “fat tails” representing MFIs that hold assets only (right end of the graph) or liabilities only (left end of the graph) in those currencies.

Among the 304 MFIs, there were 140 instances of MFIs holding assets only (87 cases) or liabilities only (53 cases) in a given foreign currency. With the exception of a few cases of strongly pegged currencies, MFIs holding either assets or liabilities only are quite vulnerable to macroeconomic shifts.

Chart 3 – Foreign Currency Asset-Liability Ratio Distribution, 2008<sup>6</sup>



Source: Microfinance Analytics

The assumption in microfinance has been that foreign exchange risk arises mainly due to MFIs borrowing liabilities in foreign currencies from cross-border borrowers. In fact, this is only one foreign currency trend among MFIs. Of the 87 cases of MFIs holding foreign currency assets only, three were *de facto* local currencies: a Congolese MFI holding US dollars, which are legal tender in that country, and two Palestinian MFIs holding Israeli shekels. And this hard currency exposure is not primarily a case of MFIs simply choosing to lend in hard currency while raising funds locally. Much of the assets-only foreign currency holdings were held in demand and term deposits, including 97% of US dollar holdings and 77% of euro assets. This indicates that mismatch in many cases is based on a willingness to speculate, and the assumption that hard currency will hold its value or appreciate versus the local currency.

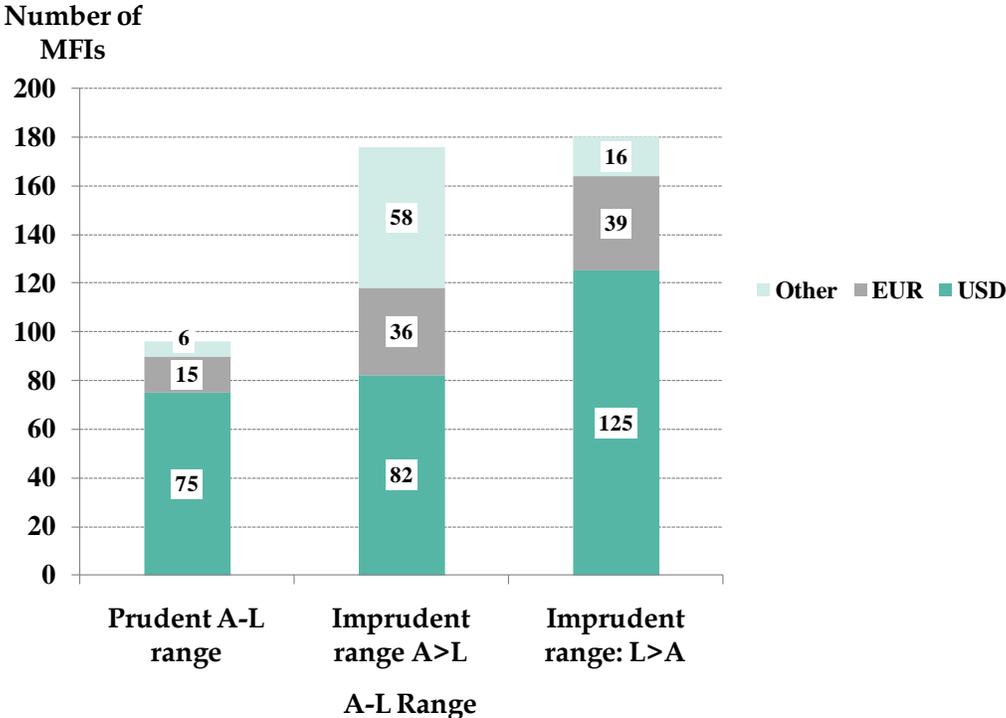
There are a number of factors that MFIs cite for holding foreign currency assets without corresponding liabilities. One reason is donor or network grant funding provided to MFIs in hard currency. Additional reasons include a belief that hard currency is a more stable and safe asset to hold, or paying for local contracts such as buildings and equipment rental or purchases

<sup>6</sup> The foreign A-L currency ratios shown in Chart 3 (horizontal axis) display the upper end of each data range. For example, the “0.9” data point depicts the 0.8 – 0.9 data range.

denominated and/or requiring payment in hard currency. Lastly, some MFIs choose to keep some foreign currency funds on deposit to pay for “eventualities.” Many MFIs assume that dollars or euros will generally appreciate against their local currency, but this is not always the case, as will be seen in a later section. An MFI’s long open currency position is a significant and avoidable source of foreign exchange risk exposure.

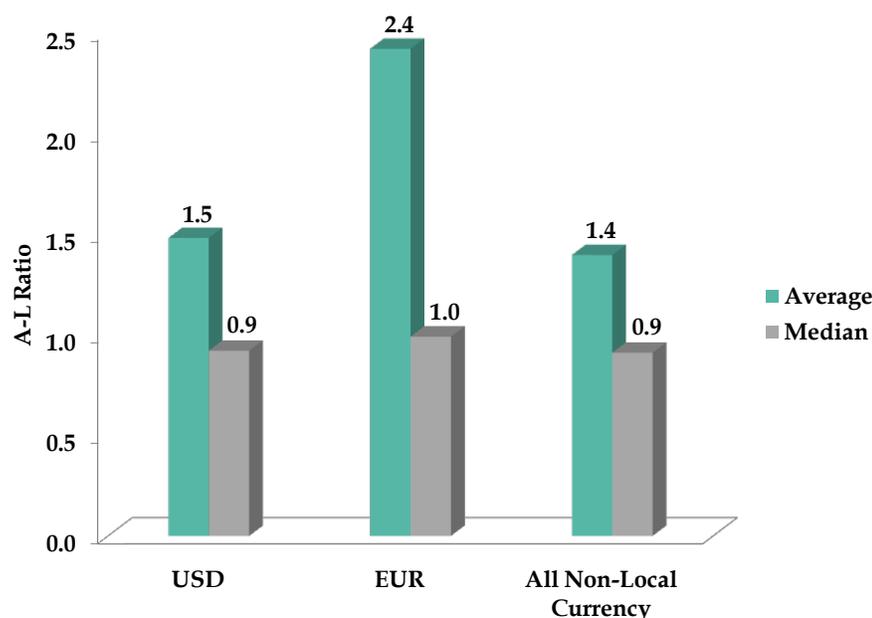
As seen in Chart 4, nearly as many MFIs have imprudent A-L ratios with assets exceeding liabilities as the reverse. This means that many MFIs overshot the goal of holding foreign currency assets to balance their liabilities.

**Chart 4 - Breakout of MFI Foreign Currency Holdings by A-L Range, 2008**



Source: Microfinance Analytics

**Chart 5 - A-L Ratio of MFIs in US Dollars, Euros, and All Non-Local Currencies, 2008**



Source: Microfinance Analytics

Chart 5 shows the average and median A-L ratios for US dollars, euros, and a composite of all non-local local currencies (including US dollars and euros).<sup>7</sup> The fact that the average and median are quite different is due to outliers with significant excess of assets over liabilities that skew the result in that direction. More surprising however, is the aggregate average A-L ratio of 1.4, which indicates that the exposure is greater for MFIs holding excess foreign currency assets than those with excess foreign currency liabilities. This is contrary to conventional views about currency risk in microfinance. Therefore, as an industry, microfinance is as vulnerable to local currency appreciation as it is to depreciation. This means that in the event of currency fluctuation in either direction there will be a substantial number of both winners and losers.

### C) The Myth of Mitigation: Foreign Currency Onlending

*“Occasionally microlenders lend in a currency other than that of a borrower’s repayment source (e.g. sales of goods or services), so foreign currency fluctuations may affect the borrower’s ability to repay. While not unique to microcredit, microborrowers may be less able to appreciate the nature of this exposure, much less take measures to mitigate it.”*

-Basel Committee on Banking Supervision<sup>8</sup>

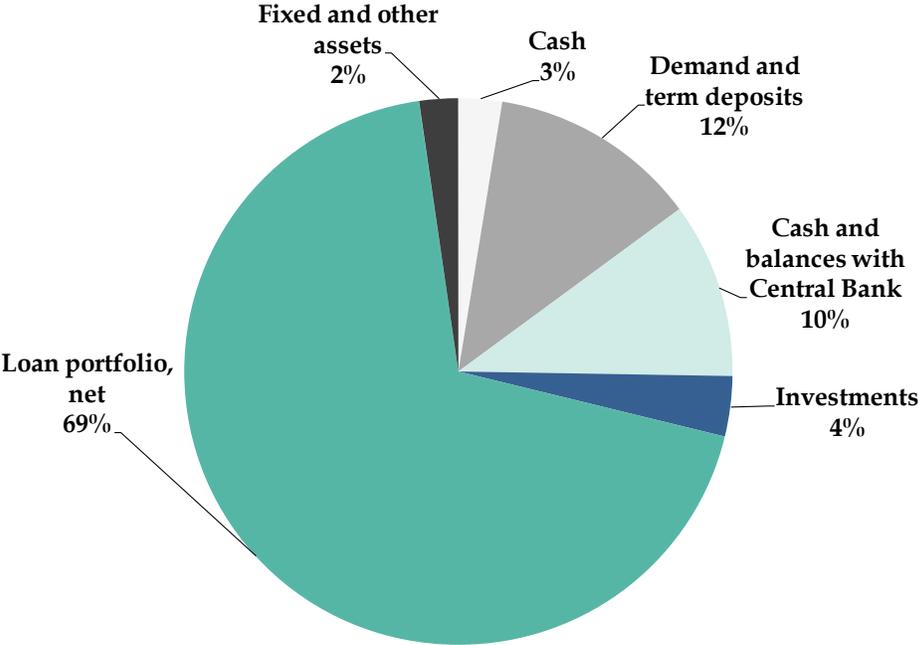
<sup>7</sup> These figures exclude the 140 cases of MFIs holding either assets or liabilities only in a given foreign currency.

<sup>8</sup> Basel Committee on Banking Supervision. *Microfinance Activities and the Core Principles for Effective Banking Supervision*, Basel, Switzerland: Bank for International Settlements, 2010, page 11.

One of the ways that MFIs achieve prudent foreign exchange ratios is through onlending in foreign currency (assets) to their borrowers to offset foreign currency borrowings (liabilities). Unless an MFI’s client is earning his or her business’s income in a foreign currency, the foreign exchange risk exposure has simply been passed on, adding an indirect but significant credit risk on the MFI’s balance sheet. This practice also raises ethical and client protection issues for the MFI vis-à-vis its borrowers. Graph 4 shows that this trend takes place more than “occasionally” as described above by the Basel Committee, with over two-thirds (69%) of total disclosed foreign currency assets comprising foreign currency loans to MFI client borrowers. As noted previously, this translated into at least US\$ 4.5 billion in 2008.

The high proportion of loan portfolio as a percentage of MFI balance sheet assets contrasts with MFIs that hold assets only in hard currencies such as US dollars and euros. As noted in the previous section, those MFIs hold much of their assets in demand and term deposits. MFIs are incurring excessive levels of foreign exchange risk exposure both for speculative purposes and also in an attempt – sometimes unachieved – to offset foreign currency liabilities.

**Graph 4 - Composition of MFI Foreign Currency Assets, 2008**

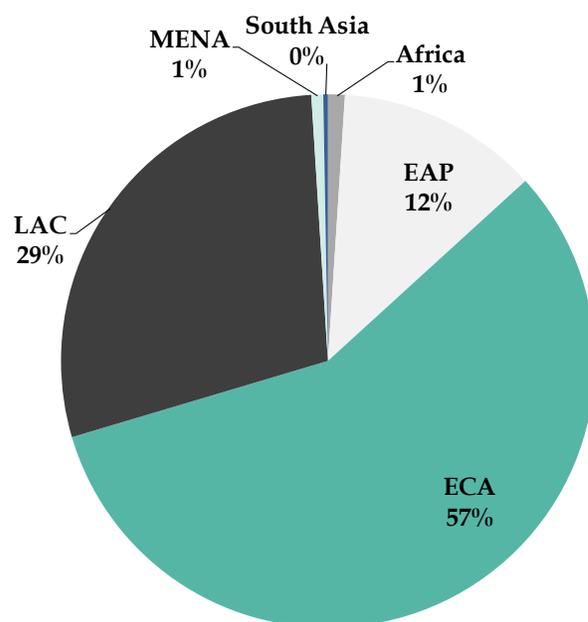


*Source: Microfinance Analytics*

One hundred and twenty-three MFIs disclosed that they onlend foreign currency. This includes 110 MFIs lending US dollars, 29 lending in euros, and 21 lending in other foreign currencies. Twenty-eight MFIs report onlending in two or three foreign currencies.

Since most MFIs do not explicitly disclose the use of foreign currency onlending as an exchange risk mitigation strategy, it must be inferred. In fact, 51% of onlending MFIs have prudent A-L ratios. Thus, about half of these MFIs are mitigating their currency risk through onlending, albeit passing the exposure on to their borrowers. The other half of onlending MFIs are both holding excess currency risk and passing risk along to borrowers. Graph 5 indicates the regional composition of reported foreign currency onlending volume.

**Graph 5 - Regional Composition of MFI Foreign Currency Onlending, 2008**



*Source: Microfinance Analytics*

How transparent are MFIs about foreign currency onlending? Only a few MFIs directly discuss whether they onlend foreign currency in their financial statements. Box 1 is an example of a transparent MFI's explicit policy of using loan disbursements combined with daily cash position adjustments to hedge its foreign exchange risk. Many other MFIs issue foreign currency loans to manage foreign exchange risk without being as transparent about the practice. In rare instances, an MFI will acknowledge the increased credit and market risk associated with foreign currency onlending, as Georgian MFI Credo notes, "The Organization has loans denominated in US Dollars. Depending on the revenue stream of the borrower, the appreciation of the currencies against the Georgian Lari may adversely affect the borrowers' repayment ability and, therefore, increases the likelihood of future loan losses."<sup>9</sup>

<sup>9</sup> LLC Microfinance Organization Credo. *Financial Statements for the year ended December 31, 2008*. Tbilisi, Georgia: Credo, 2009, page 21.

### **Box 1–Example of an MFI’s hard currency loan disbursements to offset foreign exchange risk**

Express Finance Romania notes in its 2008 and 2009 audited financial statements that, *“Currently the Company does not use derivative instruments for hedging purposes. The strategy is to avoid the foreign exchange risk to the maximum extent possible. Management tries to match the volume of financial assets and liabilities denominated in the same currency in order to hedge the currency risk. This is accomplished by:*

- *planning and monitoring loan disbursement by currency which is monitored on a daily basis;*
- *making adjustment of the daily currency position by varying the available cash positions in the different currencies.”<sup>10</sup>*

In practice, this means that since 99% of Express Finance’s borrowings are in US dollars and euros, 96% of its loan portfolio to its borrowers is issued in hard currency. The MFI uses hard currency cash balances to fine-tune the matching of its hard currency assets and liabilities. While this example is from just one MFI, the practice is common in microfinance, especially in Eastern Europe.

Yet, onlending foreign currency sometimes puts MFIs in an untenable position between cross-border lenders, the MFI’s borrower, and national regulators, as described in Box 2 about Tajikistan.

### **Box 2–Between a rock and hard place**

The nexus of MIV and DFI foreign exchange risk limit covenants and national regulations can be onerous for an MFI. For example, in Tajikistan, a number of MFIs index microborrower loans to the US dollar. In February 2010, the National Bank of Tajikistan (central bank) issued an official notice stating that only national currency somoni could be used in lending transactions. At the same time, international investors had lent hard currency to Tajik MFIs with loan covenants stipulating low levels of allowable net open currency position. Abiding by the regulators’ requirements would put the MFIs in loan covenant violation with their lenders and risk losing their funding. Yet, the MFIs need foreign capital to finance growth of their loan portfolios to microborrowers.

Historically, there have not been viable hedging instruments for the Tajik somoni. Thus, Tajik MFIs found themselves between a rock and a hard place. Later in 2010, Tajik MFIs, large MIV and DFI lenders and the Tajik microfinance association met with National Bank of Tajikistan government officials on this topic. The National Bank of Tajikistan concluded that MFIs have the right to index loans to any currency. While this resolved the MFIs’ dilemma, microborrowers still hold the burden of foreign exchange risk. It is a solution that does not address the fundamental foreign exchange risk exposure generated by this situation.

<sup>10</sup> Express Finance – Instituție Financiară Nebancară S.A. Financial Statements 30 September 2009. Timisoara, Romania: Express Finance, 2009, page 36.

Some MFIs also mitigate foreign exchange risk through indexing loans to borrowers to a reference exchange rate. An MFI client who is getting a loan will have repayments whose amount is a function of the value of the loan in a foreign currency. If the local currency depreciates, the borrower will owe more than projected when the loan was issued. Only three MFIs explicitly reported loan indexing in their financial statements; two in Eastern Europe and one in Latin America. For example, Nicaraguan MFI FODEM notes that its client loans are indexed to the dollar based on a published reference rate by the Nicaraguan Central Bank.<sup>11</sup> However, the practice is far more common than these few disclosures would indicate.

While foreign currency onlending is intended as a stopgap currency risk measure, it generates credit risk to the MFI and currency risk to the MFI borrower – making it more of a problem than a solution.

#### D) MFI Foreign Exchange Gains and Losses

**Nearly as many MFIs had foreign exchange losses as gains in 2008, spanning all regions, MFI types, sizes, and age, totaling US\$ 113 million.**

The sections above described foreign exchange risk exposure measured on an MFI's balance sheet. The bottom line results of this exposure in terms of foreign exchange gains (income) or foreign exchange losses (expense) on an MFI's income statement depend on the actual movement of exchange rates. In 2008, the number of MFIs reporting gains (196) approximated the number reporting losses (183), underscoring the variable impact of exchange rate fluctuations. This finding is consistent with the range of differing foreign currency A-L ratios seen earlier in Chart 3. Further descriptive details of MFIs with foreign exchange gains and losses may be found in Appendix 5.

The bottom line impact of this foreign exchange risk exposure was significant. Three hundred and seventy-nine MFIs reported foreign exchange gains or losses in 2008. Forty-four percent of these MFIs experienced foreign exchange impact – gain or loss – equal to 10% or more of their net income. The average foreign exchange gain or loss was about one-third of MFI net income, as depicted in Chart 6. Specifically, the average MFI foreign exchange loss was 32% of net income, while the average gain was 34%. As seen in Chart 7, the average foreign exchange gain (nearly US\$ 420,000) is 2.5 times the average loss (US\$ 167,000). In contrast, the median gain was only 1.6 times the median loss.<sup>12</sup> The fact that the averages diverge widely from their

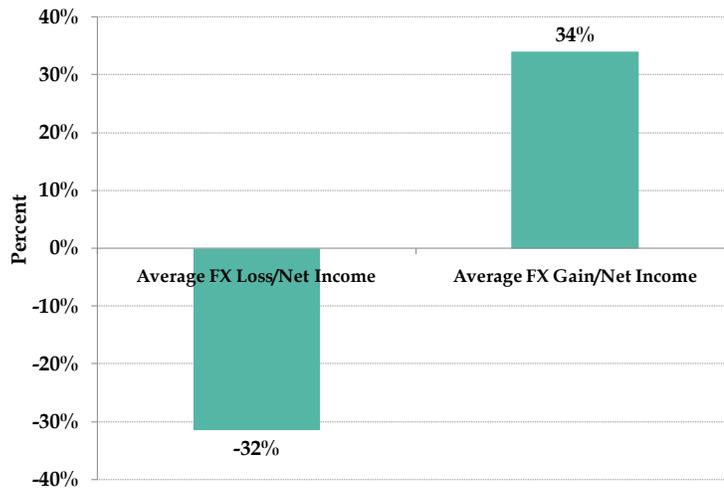
<sup>11</sup> FODEM. *Dictamen de los Estados Auditados Financieros. 2008*. Managua, Nicaragua: FODEM, 2009, page 2.

<sup>12</sup> The differentials between the average and median foreign exchange gain and loss amounts are computed on an absolute value basis to accurately reflect the scale differential.

corresponding medians implies that some MFIs' foreign exchange gains and losses were outliers from the others.

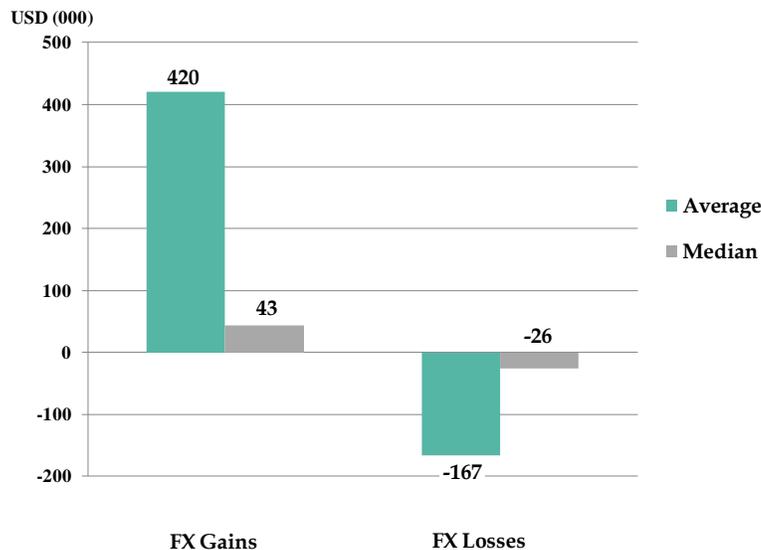
MFIs reporting foreign exchange gains had more cases that were extreme in size than those reporting foreign exchange losses. The largest foreign exchange gain was US\$ 10.2 million (on net income of US\$ 54.3 million), while the greatest loss was US\$ 3.3 million (on net income of US\$ 11.3 million).

**Chart 6 - Average MFI Foreign Exchange Gain or Loss as a Percentage of Net Income, 2008**



Source: Microfinance Analytics

**Chart 7 - MFI Average and Median Foreign Exchange Gain and Loss in US\$ millions, 2008**



Source: Microfinance Analytics

Inverse foreign currency A-L ratios and differing net open positions relative to equity can lead to substantially different bottom line foreign exchange results in MFIs in the same country under identical exchange rate conditions. For example, two Malawian MFIs with opposite foreign exchange positions, i.e. one with a long open position and high positive net open position as a percentage of equity, and another with liabilities only and a negative net open position had significantly different bottom line results. One lost 21% of net income on exchange losses, while the other had a foreign exchange gain greater than total net income.

### Box 3–Foreign Exchange Gains or Losses that Changed MFI Profitability

Foreign exchange gains or losses can have a material impact on profitability. Among the 379 MFIs that reported foreign exchange results on their income statements, **five MFIs had a loss (negative net income) that would have been a profit** were it not for the foreign exchange loss on their income statement. Conversely, **ten MFIs had a positive net income that would have been negative** (operating at a loss) had it not booked foreign exchange gains that year. MFIs are not supposed to be in the currency speculation business. Their business model and profitability results should be based on their core financial intermediation business, and not fundamentally subject to the upside or downside impact of foreign exchange gains or losses.

Currency exchange rates are by definition volatile.<sup>13</sup> Table 2 shows annual local currency depreciation or appreciation against the US dollar in 34 microfinance markets over the last ten years from 2000 to 2009. For example, Brazil experienced 34% depreciation in 2002, and 34% appreciation in 2009. Table 2 figures do not reveal the full extent of currency volatility, since exchange rates frequently fluctuate on a daily basis. In all but two of the last ten years, more local currencies in these countries experienced annual currency depreciation than appreciation against the US dollar.

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<sup>13</sup> Some countries may have policies limiting fully market-based movement of currency rates. For a classification list of exchange rate regimes, please see the International Monetary Fund's *De Facto Classification of Exchange Rate Regimes and Monetary Policy Frameworks*. <http://www.imf.org/external/np/mfd/er/2008/eng/0408.htm>.

**Table 2- Annual Currency Volatility against the US Dollar in Select Microfinance Markets 2000-2009**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	%	%	%	%	%	%	%	%	%	%
Azerbaijan	-4.1%	-4.4%	-2.4%	-0.6%	0.4%	6.7%	5.4%	3.1%	5.5%	-0.3%
Bangladesh	-5.6%	-5.3%	-1.6%	-1.5%	-3.2%	-8.3%	-4.1%	0.7%	-0.5%	-0.5%
Bolivia	-6.3%	-6.3%	-8.9%	-4.3%	-2.7%	0.1%	0.8%	4.7%	8.5%	0.0%
Brazil	-8.5%	-15.7%	-34.3%	22.3%	8.8%	13.4%	9.5%	20.7%	-24.2%	34.2%
Cambodia	-3.5%	0.3%	-0.9%	-1.4%	-1.1%	-2.1%	1.4%	1.5%	-1.9%	-2.1%
Chile	-7.4%	-12.7%	-7.9%	18.8%	7.1%	8.9%	-3.8%	7.8%	-21.2%	24.2%
Colombia	-14.3%	-5.0%	-19.7%	3.0%	15.3%	5.6%	2.6%	12.0%	-9.6%	7.5%
Egypt	-7.7%	-17.8%	-0.2%	-26.9%	0.4%	7.0%	0.5%	3.6%	0.0%	0.5%
Ethiopia	-2.2%	-2.9%	-0.3%	-0.5%	-0.3%	-0.3%	-1.1%	-4.6%	-7.6%	-21.2%
Gambia	-22.4%	-12.1%	-27.6%	-24.4%	4.3%	5.5%	0.3%	24.4%	-15.1%	-1.5%
Georgia	-2.3%	-4.1%	-1.4%	0.7%	13.7%	1.8%	4.6%	7.7%	-4.5%	-1.1%
Ghana	-49.8%	-3.7%	-13.2%	-4.7%	-2.2%	0.9%	-1.1%	-4.8%	-20.1%	-14.4%
Guatemala	1.2%	-3.4%	2.8%	-3.2%	3.8%	1.8%	-0.4%	0.2%	-1.8%	-6.9%
India	-7.0%	-3.0%	0.3%	5.3%	4.6%	-3.3%	1.9%	12.3%	-18.7%	3.8%
Indonesia	-26.2%	-7.7%	16.3%	5.6%	-8.9%	-5.5%	9.0%	-4.2%	-14.0%	16.5%
Kenya	-6.5%	-0.7%	2.0%	1.2%	-1.6%	6.9%	4.3%	10.7%	-19.3%	2.5%
Kyrgyzstan	-6.0%	1.2%	3.5%	4.3%	6.2%	0.8%	8.3%	7.4%	-9.9%	-10.6%
Malawi	-42.0%	19.0%	-22.8%	-19.7%	-0.3%	-12.0%	-11.2%	-0.7%	-0.2%	-3.7%
Mexico	-0.6%	4.7%	-11.3%	-8.2%	-0.3%	4.5%	-0.9%	0.1%	-19.7%	3.7%
Mongolia	-2.2%	-0.5%	-2.0%	-3.7%	-3.4%	-1.0%	4.8%	-0.4%	-7.7%	-12.1%
Morocco	-5.0%	-8.1%	13.7%	16.2%	6.5%	-11.1%	9.4%	9.6%	-4.8%	3.0%
Nepal	-7.5%	-2.8%	-2.3%	5.8%	3.1%	-3.0%	4.1%	11.9%	-18.2%	4.0%
Nicaragua	-5.7%	-5.6%	-5.7%	-5.7%	-4.8%	-4.8%	-4.7%	-4.8%	-4.8%	-4.8%
Pakistan	-10.8%	-4.7%	4.0%	2.3%	-3.2%	-1.2%	-1.8%	-0.5%	-22.6%	-6.1%
Paraguay	-5.6%	-24.7%	-34.1%	16.2%	-2.2%	2.1%	17.9%	6.5%	-1.6%	7.5%
Peru	-0.5%	2.4%	-2.0%	1.5%	5.5%	-4.3%	7.3%	6.7%	-4.6%	8.7%
Philippines	-19.4%	-2.7%	-3.2%	-4.5%	-1.2%	6.0%	8.0%	18.7%	-12.8%	2.4%
Romania	-29.6%	-17.9%	-5.7%	2.8%	12.1%	-6.5%	21.0%	4.6%	-13.3%	-3.5%
Russia	-4.1%	-6.6%	-5.2%	7.9%	6.1%	-3.6%	9.3%	7.3%	-16.5%	-2.9%
South Africa	-18.7%	-37.6%	40.4%	30.1%	17.9%	-11.0%	-9.3%	2.3%	-26.8%	26.1%
Sri Lanka	-12.6%	-11.4%	-3.7%	0.0%	-7.5%	2.4%	-5.2%	-0.9%	-3.9%	-1.1%
Tajikistan	-34.7%	-13.7%	-15.0%	1.5%	-2.6%	-5.1%	-6.7%	-1.1%	0.4%	-21.0%
Uganda	-14.8%	2.3%	-6.8%	-4.3%	8.5%	-1.8%	4.3%	2.6%	-12.9%	2.4%
Vietnam	-3.3%	-3.8%	-2.1%	-1.6%	-0.8%	-0.9%	-0.9%	-0.4%	-5.1%	-5.4%

# countries w/ LC depreciation	33	28	26	17	17	18	13	10	31	18
# countries w/ LC appreciation	1	6	8	17	17	16	21	24	3	15
# countries - no change in value	-	-	-	-	-	-	-	-	-	1
<b>Total</b>	<b>34</b>									

Source: Microfinance Analytics based on analysis of IMF International Financial Statistics data

In 2008, the financial crisis caused many emerging and developing market currencies to depreciate. For example, when the Indonesian rupiah depreciated against the US dollar in that year, an MFI with a very short A-L position in US dollars of 0.10 experienced foreign exchange losses equivalent to 85% of its net income. The historical trend of emerging market currency

weakening may have led some MFIs to believe that holding excess US dollar assets or other hard currency assets is a “safe” bet. This may explain the finding that nearly equal numbers of MFIs with imprudent foreign currency A-L ratios hold a long open position as a short open position, as seen earlier in Chart 4. Holding excess assets, however, is not always advantageous. When the Bolivian boliviano appreciated in 2008, a Bolivian NGO with a US dollar A-L position of 1.4 experienced a foreign exchange loss equal to 211% of its net income.

Currency risk gain and loss is a two-way street. The findings of this study make a strong case that MFIs cannot assure themselves of consistent earnings over the long term if they carry significant currency risk exposure. The following are recommendations on how various actors in the industry can contribute to a more stable future.

#### **IV. RECOMMENDATIONS**

**The findings of this study have implications for the microfinance industry as a whole, MFIs, cross-border lenders such as MIVs and DFIs, regulators, and auditors. Each will be addressed in turn.**

##### *Microfinance Industry*

#### **❶ Develop microfinance industry-wide guidelines on prudent foreign exchange risk exposure limits.**

The microfinance industry should develop and abide by prudent foreign exchange limit guidelines for asset-liability ratio and net open position as a percentage of equity. MIVs, DFIs, and other microfinance investors can support these prudent guidelines by including them in MFI loan covenants. Development of prudent measures is consistent with the recently issued Basel guidelines for microfinance activities.<sup>14</sup>

#### **❷ Provide tailored microfinance hedging products to cross-border lenders to hedge foreign currency risk.**

Cross-border loans can constitute part of a well-diversified funding base and capital structure, provided that the funds are issued in local currency to MFIs. Currency hedging products should be targeted to the currencies and tenors of MFI loans.

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<sup>14</sup> Basel Committee on Banking Supervision. *Microfinance Activities and the Core Principles for Effective Banking Supervision*. Basel, Switzerland: Bank for International Settlements, 2010, pages 23-25.

**④ Provide additional training and education in asset-liability management and overall financial risk management for MFIs.**

MFX Solutions and others are well placed to provide targeted education and training to MFIs. DFIs seeking to increase institutional capacity in the microfinance sector can fund and support foreign exchange risk management and overall financial risk management educational initiatives and capacity building. National and international microfinance networks and associations can also encourage and facilitate educational initiatives.

*Microfinance Institutions*

**④ MFIs should maintain foreign exchange risk exposure at a prudent level.**

MFIs should maintain prudent foreign currency assets to liabilities ratio and aggregate net open position based on guidelines that the microfinance industry develops. Country, regional and international microfinance networks can further support prudent financial risk management by members.

**⑤ MFIs should not pass on foreign currency risk to microborrowers who are not earning revenues in that foreign currency.**

The onus for ensuring that microborrowers are earning revenues in a specific hard currency rests with the MFI. Foreign currency onlending limitations can be included in microfinance industry client protection principles.

**⑥ Track and monitor foreign exchange risk at the MFI level.**

MFIs should regularly track foreign exchange risk, among other forms of financial risk management. This may require adding capability to an MFI's management information systems to track all foreign exchange-related line items, specified by currency and tenor. The MFI should generate and analyze foreign exchange risk exposure on a regular basis internally and with its Board as part of broader asset-liability management and oversight.

**⑦ Improve transparency: MFIs should report the extent and impact of foreign risk exposure in annual audited financial statements.**

An MFI should disclose in its audited financial statements whether: 1) it has borrowed or is lending in foreign currencies; 2) holds any foreign currency assets or liabilities; 3) the extent of foreign exchange mismatch by balance sheet line item category per foreign currency; 4) report on the impact of all on- and off-balance sheet activity in their foreign exchange mismatch disclosures; and 5) disclose all resulting foreign exchange gains or losses as a line item in its income statement or notes. Best practice also includes a simple foreign exchange risk sensitivity analysis. Reporting and coverage of these topics are consistent with International Financial

Reporting Standards. MFIs that do not hold any foreign currencies should explicitly state this in their audited financial statements.

#### *Microfinance Lenders*

**⑧ Microfinance lenders should lend to MFIs in local currency and not directly or indirectly cause MFIs to pass on currency risk to microborrowers.**

Although an increasing percentage of cross-border loans to MFIs are issued in local currency, a substantial amount of hard currency funds are still lent to MFIs. This forces MFIs to either incur foreign exchange risk on their own balance sheet, or pass it on to microborrowers, who are least able to safely shoulder such risk. Cross-border lender loan covenants should stipulate MFI foreign exchange risk exposure limits, either per currency and/or on an aggregate foreign currency exposure basis, and prohibit MFIs from passing on or mitigating foreign exchange risk through onlending to microborrowers unless the currency is used in domestic commerce. Funds that invest in MIVs or DFIs for MFI lending should also abide by the above-mentioned recommendations for any MFI lending that they finance. These criteria should be included in the due diligence process.

#### *Regulators*

**⑨ National regulators should establish required prudent MFI foreign exchange risk exposure limits.**

This can range from disallowing foreign exchange risk exposure to requiring prudent asset-liability ratio and net open position ratios per currency and on aggregate currency risk exposure. Regulators can prohibit onlending in foreign currencies unless it is clearly documented by the MFI that its borrowers are predominantly earning revenues in that foreign currency.

#### *Auditors*

**⑩ Auditors should disclose MFI foreign exchange risk exposure levels and practices.**

In compliance with International Financial Reporting Standards, local and international accounting firms should include disclosure of foreign exchange risk and other financial risk exposures in the course of conducting audits and preparing MFI financial statements. Accounting firms should provide information on whether or not the MFI has any foreign currency holdings, and if so, document the per currency mismatch and net open position, list

foreign exchange gains and losses on the income statement, and provide a foreign exchange risk sensitivity analysis.

#### **Box 4-Recommended Best Practice Foreign Exchange Risk Exposure Guidelines**

- ✓ **Report foreign exchange gains and losses on the income statement.**
- ✓ **Provide a foreign exchange mismatch table per currency with breakdown of all affected asset and liability line items.**
- ✓ **Perform a foreign exchange risk sensitivity analysis.**
- ✓ **Disclose relevant information on any foreign currency holdings in all relevant asset and liability financial statement notes.**
- ✓ **Disclose all on- and off-balance sheet foreign exchange contracts and hedging mechanisms.**

## **V. CONCLUSION**

*“There is no sphere of human influence in which is it easier to show superficial cleverness and the appearance of superior wisdom as in matters of currency and exchange.”*

*-Winston Churchill<sup>15</sup>*

The microfinance industry has advanced in its understanding of the impact of foreign exchange risk in recent years. While the percentage of cross-border lending in foreign currency has declined somewhat in the last few years, the practice is still prevalent. This study reveals that the scale and extent of foreign exchange risk is greater, and more complex and multi-faceted, than previously known. MFIs are holding large mismatched amounts of foreign exchange risk exposure in both assets and liabilities in many currencies. As a result, MFIs are subject to currency volatility in multiple directions. Microfinance foreign exchange risk exposure is a two way street, depending on the foreign currencies that an MFI holds and the movement of the respective exchange rates. In 2008 alone, MFI foreign exchange gains and losses totaled at least US\$ 113 million.

Microfinance foreign exchange risk management practices must align more closely with commercial sector practices in order to limit foreign exchange risk exposure. This is particularly important due to the volatility of exchange rate movements in emerging markets, which may be heightened in the post-crisis environment. Cross-border lenders should not burden MFIs or their borrowers with unhedgeable foreign exchange risk exposure. The microfinance sector can

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<sup>15</sup> House of Commons, 1946.

develop, implement, and adopt prudent foreign exchange risk exposure guidelines. This will require a concerted effort by MFIs, MIV and DFI cross-border lenders, microfinance networks, and national regulators.

More available currency hedging alternatives are needed for the range of emerging markets currencies in which MFIs operate, offered with appropriate tenors to match cross-border loans to MFIs. The microfinance industry will also benefit greatly from further education, training and capacity building for MFIs to fully understand both the impact and implications of foreign exchange risk exposure and financial risk management principles. MFX Solutions and others can provide needed foreign exchange hedging and educational products and services to benefit microfinance.

With participation by all members of the microfinance industry, MFI foreign exchange risk can be better understood and properly mitigated to in order to promote greater access to finance for the poor in developing countries.

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*The author and MFX Solutions welcome your comments on this paper. Please send feedback to [jabrams@microfinanceanalytics.com](mailto:jabrams@microfinanceanalytics.com) and [mfxinfo@mfxsolutions.com](mailto:mfxinfo@mfxsolutions.com).*

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## VI. APPENDICES

### **Appendix 1: Data and Methodology**

#### **Data**

This study is based on a review of all MFIs listed on the MIX Market for fiscal year 2008. Each MFI was reviewed to determine if audited financial statements were available. The MIX database contained 1,174 MFIs of which 776<sup>16</sup> had available financial statements. This analysis yielded a cohort of 304 MFIs with balance sheet foreign exchange mismatch data and MIX summary data. While the 304 MFIs cannot be presumed to be an exhaustive data set of all MFIs with foreign currency holdings, they are likely reflective of a high proportion of the foreign exchange mismatch incurred by MFIs.

As can be seen in Table 3, the 304 MFIs reporting on foreign exchange exposure in their audited financial statements had an aggregate portfolio of US\$ 19.1 billion. While these MFIs account for about one-quarter of MFIs reporting to MIX, as measured by assets, portfolio, and borrowings, they comprise nearly one-half of the MIX Market aggregated gross portfolio.

**Table 3– Percentage of Aggregate MFI Statistics included in the Study**

	<b>MFIs publicly reporting FX risk data</b>	<b>Percentage of MIX Market total MFIs listed</b>
Number of MFIs	304	26%
Aggregate gross loan portfolio	US\$ 19.1 billion	49%
Assets	US\$ 25.5 billion	49%
Borrowings	US\$ 7.9 billion	48%

*Source: Microfinance Analytics*

Separately, MIX Market compiled income statement foreign exchange gains and losses on 379 MFIs, comprising 61% of aggregate MIX Market gross loan portfolio.

#### **Methodology**

The study was conducted in two phases. Phase 1 entailed a sampling of MFIs across six geographic regions, six legal status categories, and five strata of gross portfolio size, to determine what foreign exchange risk exposure data were available. Phase 1 identified trends in the level of foreign exchange risk exposure by size, region, and legal structure of MFIs. The first phase determined that in order to get the most robust data set, a review of available data on all MFIs on MIX Market was necessary. Therefore, Phase 2 involved a full foreign exchange risk analysis of all MFIs listed on MIX Market. Phase 2 also determined if financial statements

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<sup>16</sup> This figure is based on 776 usable audited financial statements posted on MIX Market. There were an additional 51 audited financial statements in languages other than English, French, Spanish, and Portuguese, not used in this study, for a total of 827 MFIs with 2008 audited financial statements on MIX.

commented on foreign exchange risk, provided a foreign exchange risk sensitivity analysis, and which audit firm had prepared the statements.

## **Appendix 2: Foreign Exchange Risk Reporting Transparency**

A key aspect of foreign exchange risk transparency is public disclosure and reporting on the extent of risk incurred. The most effective form of transparency is inclusion of complete foreign exchange risk disclosure in an MFI's publicly available audited financial statements, and providing any further required disclosures to lenders or other investors during the due diligence process. As can be seen in Graphs 6 and 7, over half of MFIs disclosing foreign exchange risk data were audited by international firms, while over half of those without foreign currency mismatch data were audited by local firms. More specifically, 41% of the 304 MFIs' financial statements that contained foreign exchange risk data were prepared by four of the largest global accounting firms: KPMG, PwC, Deloitte, and Ernst & Young. While an international audit firm is no guarantee of more transparent financial reporting and disclosure, there seems to be some correlation with more extensive MFI foreign exchange risk disclosure. For example, foreign exchange risk disclosures from Express Finance and Credo cited earlier in this paper were both audited by international accounting firm KPMG.

There is also a lack of full public disclosure of MFIs' foreign exchange risk bottom line impact. While 379 MFIs reported foreign exchange gains or losses on their respective income statements, only 237 of these MFIs provided foreign exchange risk mismatch data on their audited financial statements' balance sheets. Thus, 142 MFIs are underreporting on foreign exchange risk by reporting income statement foreign exchange gains and losses but are not reporting balance sheet foreign exchange data. Conversely, 67 MFIs report balance sheet foreign currency holdings but no foreign exchange gains or losses. MFIs should be encouraged to provide full disclosure of foreign exchange risk impact on their balance sheet and income statement in their audited financial statements. Fifty-three MFIs included a foreign exchange sensitivity analysis in their respective audited financial statements. Over half of these 53 MFIs are based in the ECA region. Higher disclosure compliance in that region is likely attributable to the higher number of MFIs, and the greater adoption of International Financial Reporting Standards in that region.

**Graph 6 Audit Firms of MFIs with Foreign Exchange Mismatch Data, 2008**



*Source: Microfinance Analytics*

**Graph 7 -Audit Firms of MFIs without Foreign Exchange Mismatch Data, 2008**



*Source: Microfinance Analytics*

### Appendix 3: MFI Foreign Currency Holdings

Table 4 discloses the foreign currencies that MFIs hold; Table 5 indicates the number of foreign currencies held.

**Table 4 - List of Currencies Held by MFIs, 2008**

	Currency	Assets	Liabilities	Net Loan Portfolio (Asset)	Loans payable (Liability)
1.	AUD - Australian dollar	Yes	Yes	--	--
2.	CAD - Canadian dollar	Yes	Yes	--	--
3.	CHF - Swiss franc	Yes	Yes	Yes	Yes
4.	CNY - Chinese yuan	Yes	Yes	Yes	--
5.	EUR - euro	Yes	Yes	Yes	Yes
6.	GBP - British pound	Yes	Yes	Yes	Yes
7.	HNL - Honduran lempira	Yes	--	--	--
8.	ILS - Israeli new shekel	Yes	--	--	--
9.	INR - Indian rupee	Yes	--	--	--
10.	JOD - Jordanian dinar	Yes	Yes	Yes	--
11.	JPY - Japanese yen	Yes	--	--	--
12.	KGS - Kyrgyzstani som	Yes	Yes	--	Yes
13.	LAK - Lao kip	Yes	Yes	Yes	--
14.	NZD - New Zealand dollar	Yes	Yes		Yes
15.	RUB - Russian ruble	Yes	Yes	Yes	Yes
16.	SYP - Syrian pound	Yes	--	Yes	--
17.	THB - Thai baht	Yes	Yes	Yes	Yes
18.	UGX - Ugandan shilling	Yes	Yes	Yes	Yes
19.	USD - U.S. dollar	Yes	Yes	Yes	Yes
20.	VND - Vietnamese dong	Yes	Yes	--	--
21.	ZAR - South African rand	Yes	--	--	--
	Other -unspecified <sup>17</sup>	Yes	Yes	Yes	Yes
	<b>Total Number of Currencies</b>	<b>21</b>	<b>15</b>	<b>11</b>	<b>9</b>

Source: Microfinance Analytics

<sup>17</sup> Some MFIs provided foreign currency data classified as "other currency." This information was captured as an additional foreign currency category but is not counted in the total number of currencies.

**Table 5- Number of Foreign Currencies Held per MFI, 2008**

<b>Number of Foreign Currencies Held per MFI</b>	<b>Number of MFIs</b>	<b>Percentage of MFIs</b>	<b>Cumulative Percentage of MFIs</b>
<b>1</b>	209	69%	68.8%
<b>2</b>	58	19%	87.8%
<b>3</b>	31	10%	98.0%
<b>4</b>	2	1%	98.7%
<b>5</b>	1	0.3%	99.0%
<b>6</b>	1	0.3%	99.3%
<b>7</b>	1	0.3%	99.7%
<b>8</b>	<u>1</u>	<u>0.3%</u>	<u>100%</u>
<b>Total</b>	<b>304</b>	<b>100%</b>	<b>100%</b>

*Source: Microfinance Analytics*

#### Appendix 4: Existing Microfinance and Banking Industry Commentary on Foreign Currency Net Open Position Guidelines

Table 6 summarizes publicly available reported or recommended foreign exchange risk limit guidelines. Lenders such as MIVs and DFIs, and microfinance networks may set their own guidelines internally.

**Table 6– Existing Microfinance and Banking Industry Commentary on Foreign Currency Net Open Position Guidelines**

Institution	Source	Per currency Net Open Position Limit	Aggregate Foreign Currency Net Open Position Limit
CGAP	<i>Asset and Liability Management for Deposit-Taking Institutions</i> <sup>18</sup>	10%	25%
CGAP	<i>Microfinance Foreign Exchange Facilities: Performance and Prospects</i> <sup>19</sup>	--	20%
J.P. Morgan	<i>A Primer on Currency Risk Management for Microfinance Institutions</i> <sup>20</sup>	--	25% - 50%
Women's World Banking	<i>Toolkit for Developing a Financial Risk Management Policy</i> <sup>21</sup>	10%	10%
World Bank (not specific to microfinance)	<i>Analyzing Banking Risk: A Framework for Assessing Corporate Governance and Risk Management</i> <sup>22</sup>	--	10% - 15%

Source: *Microfinance Analytics*

<sup>18</sup> Pages 25-26, 2009.

<sup>19</sup> Page 13, 2010.

<sup>20</sup> Pages 9-10, 2010.

<sup>21</sup> Page 39, 2005.

<sup>22</sup> Page 260, 2010.

## Appendix 5: Foreign Exchange Gains and Losses by MFI Profile, 2008

As can be seen in Table 7, no type of MFI was immune from the impact of foreign exchange gains or losses to their income statement bottom line. Gains and losses were experienced by MFIs of all regions, legal structures, ages, and profit status. MFIs with a foreign exchange gain or loss were more typically larger, more mature MFIs.

**Table 7 - Income Statement Foreign Exchange Gains and Losses by MFI Profile, 2008**

	FX Gains	FX Losses
Number of MFIs	196	183
<i>by region</i>		
<b>Africa</b>	30	24
<b>East Asia/Pacific</b>	18	8
<b>East Europe/Central Asia</b>	52	56
<b>Latin America/Caribbean</b>	81	69
<b>Middle East/North Africa</b>	8	15
<b>South Asia</b>	7	11
<i>by MFI legal structure</i>		
<b>Bank</b>	45	13
<b>Credit Union/Cooperative</b>	14	14
<b>NBFI/NBFC</b>	72	83
<b>NGO</b>	63	71
<b>Other</b>	2	2
<i>by MFI size</i>		
<b>Small</b>	45	38
<b>Medium</b>	45	58
<b>Large</b>	106	87
<i>by MFI age</i>		
<b>New</b>	14	15
<b>Young</b>	27	37
<b>Mature</b>	155	131
<i>by MFI profit status</i>		
<b>Non-Profit</b>	107	113
<b>For-Profit</b>	89	70
<i>by MFI regulated status</i>		
<b>Non-regulated</b>	72	77
<b>Regulated</b>	123	100
<b>Not known</b>	1	6

Source: Microfinance Analytics

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