

**COMMERCIAL BANKS MOVING INTO MICROFINANCE:  
WHICH MARKET ENTRY MODEL WORKS BEST?**

by

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## **ABSTRACT**

This study examines the performance of business models used by commercial banks to enter the microfinance industry. The purpose of the study was to provide a high level indication of whether there is a model or models that yield better success than others. To conduct the research, four commercial market entry models were chosen, and analysis of secondary data from the MixMaket dataset was completed to compare model performance. Results indicated based on the methodology that the “service company” model was the most successful market entry model, and that a “commercial bank providing infrastructure and systems to a microfinance institution” may be a close contender. The results of this study are of strategic value to a commercial bank considering entry into the microfinance market.

**Keywords: microfinance; microcredit; commercialization**

**Subject Terms: commercial banks entering microfinance industry; commercial bank downscaling; commercialization of microfinance; sustainable microfinance; international development – poverty reduction strategies; microfinance trends**

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## **GLOSSARY**

<b>AMC</b>	Ahli Microfinancing Company
<b>ATM</b>	Automated Teller Machine
<b>BANGENTE</b>	Banco de la Gente Empresndadora
<b>CGAP</b>	Consultative Group to Assist the Poor
<b>Bn</b>	Billion
<b>FI</b>	Financial Institution
<b>IT</b>	Information Technology
<b>m</b>	Million
<b>MBB</b>	MicroBanking Bulletin
<b>MFI</b>	Microfinance Institution
<b>MIS</b>	Management Information Systems
<b>MIX</b>	Microfinance Information Exchange
<b>NBFI</b>	Non-Bank Financial Institution
<b>NGO</b>	Non-Governmental Organization
<b>PAR</b>	Portfolio at Risk
<b>ROA</b>	Return on Assets
<b>ROE</b>	Return on Equity
<b>SFI</b>	Specialized Financial Institution
<b>USD</b>	United States Dollar



## 1.0 INTRODUCTION

Microfinance accolades are plentiful of late, with 2005 declared the International Year of Microcredit by the United Nations, and the 2006 Nobel Peace Prize awarded to microcredit pioneer Mohammed Yunus. Yet the Consultative Group to Assist the Poor (CGAP) estimates that there are up to three billion potential microfinance customers with merely five hundred million currently being served. The roots of the microfinance industry are in non-governmental microcredit organizations (NGOs) run on donations and government subsidies. However, according to the editor of *Microfinance Matters*, the newsletter of the United Nations Capital Development Fund (UNCDF), "... the fact remains that there is not enough donor funding in the world to subsidize the provision of financial services to the estimated three billion people that require them..." (Ward, 2005, p.3). Engaging the private sector is viewed as the way forward: "Microfinance will not succeed without the full engagement of the private sector. Period." (Ward, 2005, p.3).

The biggest trend sweeping the microfinance industry today is commercialization. Simply put, commercialization means a more "businesslike" approach to microfinance, implying principles of sustainability, professionalism and efficiency in the provision of microfinance services (Drake & Rhyne, 2002, p.3). The main driver of this commercialization is the need to improve access to funding by microfinance service providers to serve greater numbers of people who have not traditionally had access to financial services. Access to funding is considered by many to be the largest obstacle to the expansion of microfinance services.

Institutionally, commercialization is evident in the transformation of non-governmental organizations (NGOs) into formal regulated banks or non-bank financial institutions. It also includes the "downscaling" of existing commercial banks into a market long considered unprofitable. To help commercial banks expedite their engagement in microfinance, this paper examines the performance of models used by commercial banks to enter the microfinance market with the purpose of providing an indication of which model yields more favourable results than others. This information is of strategic

value to a commercial bank considering entry into the lesser-familiar realm of microfinance.

This paper is structured as follows: Section 2.0 provides a survey of the literature relating to microfinance and commercialization issues and trends, including microfinance opportunities for commercial banks and market entry models; Section 3.0 describes the methodology used to conduct the research presented herewith, including the market entry models chosen for analysis, the data source, the measures of performance, the data analysis process, and the weaknesses of the methodology; Section 4.0 presents a comparative analysis of four market entry models and recommendations; and Section 5.0 presents concluding remarks and provides suggestions for further research.

## **2.0 SURVEY OF THE LITERATURE**

### **2.1 Microfinance – Definition and History**

Microfinance refers to the supply of loans, savings, and other basic financial services provided to the poor. More specifically, microfinance is defined as “...the category of financial services offered to lower-income people, where the unit size of the transaction is usually small (“micro”), typically lower than the average GDP per capita, although the exact definition varies by country” (Isern and Porteous, 2005, p.2).

The concept of microfinance has a long and widespread history. “Savings and credit groups that have operated for centuries include the ‘susus’ of Ghana, ‘chit funds’ in India, ‘tandas’ in Mexico, ‘arisan’ in Indonesia, ‘cheetu’ in Sri Lanka, ‘tontines’ in West Africa, and ‘pasanaku’ in Bolivia.” (Global Envision, 2006, ¶1). In the 1700s, the Irish Loan Fund system started, grew, and by the 1840s was making small loans for short periods without collateral to 20% of all Irish households. The 1800s saw the birth and expansion across Europe of credit unions and other similar cooperatives. The early and mid 1900s saw well-intentioned credit interventions by government agencies in rural agricultural communities to help improve productivity and incomes to farmers, however, these gave way to inefficiencies and corruption, and left the poor unfavourable alternatives such as informal financial operators charging usurious interest rates. (Global Envision, 2006)

In the 1970s, some development practitioners recognized the lack of economic opportunity for the poor and the associated lack of access to credit at reasonable rates. ACCION of Brazil and Grameen of Bangladesh believed that extending access to credit at reasonable rates could be a powerful tool to alleviate poverty by facilitating investment in micro businesses run by poor entrepreneurs. Targeted experimental programs were initiated; small ‘micro’ loans were extended to groups of poor women at reasonable subsidized rates to invest in small ‘micro’ businesses. These were innovative solidarity group loans whereby each member of a group (usually five) guaranteed the repayment of the loans of all five group members – there was no hard collateral involved, but rather group support and peer pressure. These programs experienced great success with

repayment rates in some cases higher than the formal financial sector – the Grameen Bank reports a repayment rate of 98.28% (Grameen Bank, 2008) and ACCION a historical 97% (ACCION International, 2007).

Despite the successes of the 1970s and the 1980s, there were a plethora of disappointments around the globe including poor loan recovery rates, agricultural development bank insolvency, high administrative costs, and a disproportionate share of subsidized financing benefits ending up in the hands of larger established farmers rather than smaller poorer ones for which they were intended. (Global Envision, 2006). However, these disappointments were not enough to put the brakes on an idea that was fundamentally believed to be bright. The 1990s saw a growing movement towards a financial systems approach to microcredit. This school of thought:

...viewed credit not as a productive input necessary for agricultural development but as just one type of financial service that should be freely priced to guarantee its permanent supply and eliminate rationing. The financial systems school held that the emphasis on interest rate ceilings and credit subsidies retarded the development of financial intermediaries, discouraged intermediation between savers and investors, and benefited larger scale producers more than small scale, low-income producers. (Global Envision, 2006, ¶12)

Using a financial systems way of thinking, microcredit providers such as ACCION discovered that microcredit could cover its own costs – borrowers were both willing and able to pay interest rates previously thought inconceivable. For example, interest rates charged by MFIs in Asia generally range from an astonishing 30% to 70% or more. (Fernando, 2006, p.1) How might this be possible? CGAP explains:

A poor entrepreneur, especially one engaged in trading, can generate greater benefits from additional units of capital than can a highly capitalized business, because she or he begins with so little. Studies covering India, Kenya, and the Philippines found that the average annual return on investments by microbusinesses ranged from 117 to 847 per cent. ("Making Sense of Microcredit Interest Rates," 2002, ¶1)

Overcoming this hurdle regarding interest rates was revolutionary – it challenged long-held assumptions and allowed microcredit providers to experiment with rates and service models. Without rate ceilings, a window opened to the possibility of increasing outreach and becoming self-sustaining by reducing reliance on subsidies and donor funds; sustainability was the key to reaching more people.

While this concept of sustainability was being explored by microcredit practitioners and academics the need for financial services by the poor was also becoming better understood. It was not only the need to borrow money to start or grow a business that was important, but having a secure mechanism to save for a child's tuition in the fall, or for seeds for the spring planting, was just as critical for a poor family trying to break their cycle of poverty. The growing role of savings in addition to credit became evident in the 1990s in the evolution from a 'microcredit' to a 'microfinance' movement. This microfinance movement has continued to evolve, and today products and services encompass an even broader and more sophisticated variety of financial services including working capital loans, consumer credit, savings, pensions, insurance, and money transfer services. The reality is that the poor share very similar basic financial service needs as anyone else – "to seize business opportunities, improve their homes, deal with other large expenses, and cope with emergencies" (Littlefield, 2004, p.38).

The microfinance movement has been widely celebrated in development circles for its promising potential to reduce poverty. "Few recent ideas have generated as much hope for alleviating poverty in low-income countries as the idea of microfinance." (Morduch, 2000, p.617). Although the number of microfinance institutions (MFIs) worldwide is now several thousands, their reach is still severely limited. Many microfinance service providers are constrained by reliance on unsustainable and limited sources of subsidies and donor funds. Though access to savings by some have supported marginal increased lending, to grow meaningfully and attempt fulfilment of market demand, MFIs need to access a much larger pool of capital. Per a recent study published by Deutsche Bank:

The microfinance sector currently has an estimated total loan volume of USD 25bn. Yet, it is unable to serve more than a fraction (~100m) [approximately one hundred million] of today's total sector demand of roughly 1bn micro-borrowers. This translates into an immense funding gap estimated at around USD 250bn. (Dieckmann, 2007, p.1)

As a result, many, including NGOs, charge that "...only the financial markets have the resources readily available to allow for optimal growth." (Meehan, 2004, p.5) Hence, the worlds of poverty reduction and business growth collide yielding a new commercializing era for the microfinance industry.

## 2.2 Commercialization of the Microfinance Industry

What does commercialization of the microfinance industry actually mean? What does it look like? How is it to be understood?

Firstly, this 'commercialization' is not a change at a point in time, but rather a descriptor representing many changes that are occurring in the industry over a period of several years. The changes signify a marked shift in how microfinance is being carried out, that is, resembling commercial enterprise more and more.

However, perhaps one of the most defining characteristics of this commercialization is that while there is a clear movement toward a more business-like approach, at the same time, there remains a very strong social dimension. So this commercialization of microfinance is one that integrates two seemingly incongruent goals – business *and* social development. This combination is actually not so strange in a world where a theme of 'socially responsible investing' has been gaining greater ground.

Socially responsible investments (SRIs) rank high on investors' agendas today. SRIs have risen sharply to USD 2.3 tr in the US and to EUR 1.0 tr in Europe in recent years. Amongst all SRIs, microfinance investments increasingly attract institutional and individual investors due to their double bottom line. While they allow investors to adopt a social investment strategy geared toward poverty alleviation they offer an attractive risk-return profile at the same time. (Dieckmann, 2007, p.1)

Beyond the dual goals, recent studies show definitively that microfinance is increasingly demonstrating attributes of commercial enterprise. In 2007, the MIX completed its 2003-2005 Trend Lines analysis on 200 MFIs which showed a significant shift in the legal status of entities involved in microfinance. The main types of entities involved in microfinance are NGOs, 'Transformers' (NGOs transformed or transforming into regulated financial institutions), Non-Bank Financial Institutions, and Commercial Bank 'Downscalers'. The shift among these types of institutions is away from NGOs, and toward regulated financial entities.

NGOs started the period as the single largest group...Just two years later, NGOs and specially licensed financial service providers (NBFIs) vied for the top spot in the sample. NGO market share of borrowers...fell from 54% to 51% in two years as a number of high growth institutions changed legal status to become regulated financial service providers. NBFIs picked up market slack, increasing their share of clients by half, from 14% to 22% over the same period. (Stephens, 2007, p.31)

This shift in legal status is important because although regulation creates greater constraints via increased requirements (such as required capital base, loan loss provisions, or reporting) for the microfinance organization, it also opens the door to accessing formal financial markets for funding and to offering other products and services all not possible as an unregulated NGO.

The Trend Lines analysis also revealed evidence that microfinance is in a high growth phase, is utilizing increased commercial funding, and is experiencing positive returns and improved efficiency – all traits of commercialization. The high growth phase was evident in the sheer numbers and rate of growth of new clients. “In total, the 200 Trend Lines MFIs added over seven million new borrowers, more than 50% above the number served by the end of 2003.” (Stephens, 2007, p.32). Growth was also evident in the expansion of products such as deposit services. This growth was possible because of the huge increase in commercial funding:

...2005 marked a watershed year for commercial funding of microcredit, with the median MFI sourcing more than half its funding from commercial sources, including commercial borrowings and customer deposits...From just 40% in 2003, the median institution's commercial funding of its loan portfolio jumped to 60% by 2005, an increase of nearly half. (Stephens, 2007, p.33)

However, commercial funding costs more than donations. Therefore, in order to be competitive and attract new customers, the MFI must figure out how to drive down other operational costs to improve efficiencies, and expand products and services that will add value to end clients. This collection of factors was clearly evident in Stephens' Trend Lines research and ultimately characterize the commercialization of microfinance. (Stephens, 2007)

### **2.3 Why Interest in Microfinance from Commercial Banks?**

Social benefit alone is hardly enough to attract a commercial bank into the world of microfinance. So what's the hook? Why the recent interest in microfinance from commercial bank names as big as Citicorp and ING? (Kota, 2007) Profit is the obvious answer. However, according to a 2001 survey of commercial banks that had entered the microfinance market, there was more:

Profitability *in and of itself* does not explain the entry of commercial banks. Commercial banking entry appears to be principally associated

with the fact that financial margins are being squeezed, and as a result, they are seeking new profitable market niches. The fact that microcredit can be profitable is a necessary but not sufficient condition to motivate bank entry. (Valenzuela, 2002, p.53)

This era of globalization has led to heightened competition from international banks for large corporate customers. This pressure has driven many commercial banks worldwide to look elsewhere to expand their customer base. With market demand for microfinance services estimated at more than US\$250 billion, and with current market supply at just a fraction of that, commercial banks are making the decision to go 'downmarket' to provide financial services to the poor with the intention of making a profit. Deutsche Bank estimates investments in microfinance today at approximately 4.4bn, and that by 2015, that number will rise sharply to around USD 20bn." (Dieckmann, 2007, p.1)

It seems that commercial banks are well-positioned to be competitive players in the microfinance sector. They have a variety of comparative advantages over NGOs which include: access to and experience with local and international financial capital; lower cost structures (compared with a transforming NGO); the ability to distribute fixed costs among many financial products; branch networks that facilitate outreach to clients; access to human capital, both local and international; recognized and respected brand names; an established market presence; access to advanced technology infrastructure (such as ATMs) and reporting capabilities; and experience with a wide range of financial services in addition to credit products. (Isern & Porteous, 2005)

For many commercial banks, moving into the microfinance market will have strategic appeal; the next monumental question becomes how to do so successfully. What are the goals of the new microfinance business? What are the macroeconomic, legal and regulatory factors to consider? Who is the competition? Should we partner with the competition? What level of risk are we prepared to assume? What types of products and services would we offer? Do we have the right human resource capabilities to deliver on those products and services? What have other commercial banks done that have entered the microfinance market and what was their level of success? It is this last question as part of a broad context of considerations that this study purports to examine.



## **2.4 Microfinance Market Entry Models for Commercial Banks**

Commercial banks have entered the microfinance market in a number of different ways. Research conducted by CGAP identified six predominant microfinance market entry models for commercial banks (Isern, 2005).

Isern divides the six market entry models into two main categories – direct and indirect (Isern and Porteous, 2005). The direct models represent a higher level of end client engagement with banks providing services directly to clients, while the indirect market entry models represent comparatively lower levels of engagement with the end client, with banks working through existing service providers in the market. The three direct models include: banks establishing an internal microfinance unit within their existing bank; banks creating a new specialized financial institution; or a bank creating a new microfinance service company. The three indirect models include: banks providing access to their institution's infrastructure and systems to existing microfinance providers; banks outsourcing retail operations to an existing microfinance provider; or banks providing commercial loans to microfinance institutions to on-lend. Four of these six models are included in this study including the three direct models and the first indirect model listed above; they are also described in greater detail below. The latter two indirect models – banks outsourcing retail operations to an existing microfinance provider, and banks providing commercial loans to MFIs to on-lend – have been excluded from the study per comments in Section 3.2 below.

### ***Model 1: The Internal Unit***

This model involves a bank creating an internal unit to provide microfinance services within its existing institutional structure. In its relationship to the bank, the microfinance unit is much the same as any other department within the organization; it is not a separate legal entity, nor is it regulated independently from the bank.

Creating an internal microfinance unit allows the bank to expand its operations to service microfinance customers while leveraging existing staff and systems and reducing the need for and cost of additional overhead. Existing infrastructure, such as the bank's branch and ATM networks, can be utilized to facilitate outreach and service to customers.

There are challenges associated with successfully employing this model of direct service provision including the need to adapt the bank's systems and lending procedures to the unique requirements of microfinance. Bank staff, used to servicing higher net worth customers, must be trained and motivated to deal with microfinance customers who are typically poor and from a lower socioeconomic class than the average commercial bank customer. Creating relevant products for the poor and successfully positioning the microfinance unit within the overall banking operation may also pose challenges for the bank. Within this structure, the bank bears all of the risk associated with its microfinance activities.

### ***Model 2: The Specialized Financial Institution***

This market entry model involves a bank establishing a separate legal entity or subsidiary, known as a Specialized Financial Institution (SFI), to provide microfinance services. The key difference from the internal unit model described above is that the SFI is licensed and regulated as a separate entity from the parent bank. The SFI is usually either a finance company or a non-bank financial institution that provides retail microfinance services such as loan origination, disbursement and collection, and maintains and manages the capital requirements and ownership of its lending portfolio (Chowdri, 2004). Additional financial services may be provided since the SFI is a regulated financial institution.

The SFI has a separate corporate identity and a degree of autonomy from the parent bank, allowing the bank to enter the microfinance market and expand its retail operations while limiting risk to its core bank operations and reputation. In addition, the SFI creates separate staffing, management and governance structures from the bank, which enables independence and the development of targeted procedures and products that are specifically relevant to microfinance services and customers.

Creating an SFI as opposed to an internal unit translates to higher start-up costs for entering the microfinance market. As regulated financial institutions, SFIs must meet minimum capital requirements, which means they must have their own substantial equity capital base. In addition, the regulatory environment governing the SFI may impose interest rate ceilings, restrictions on the types of financial services the SFI can provide, as well as limit the amount the bank can invest in microfinance since most countries have caps on the amount banks can lend to subsidiary organizations (Chowdri, 2004).

### ***Model 3: The Service Company***

The Service Company model involves a bank establishing a microfinance service company to provide loan origination, credit administration and portfolio management services to the bank. One important distinction between the Service Company model and the SFI described above is that the service company is a non-financial institution. This means it does not require a separate banking license, that it is not supervised or regulated separately by the banking authorities, and that it does not require a large equity base. It also means it is relatively easier and less costly to establish a service company than an SFI. "This model is an attempt to combine the best aspects of the internal unit (low transfer and infrastructure costs) and the SFI (independent management and risk mitigation)" (Chowdri, 2004, p.9).

The service company promotes, evaluates, approves, tracks and collects microfinance loans, while the loans themselves are disbursed by and remain on the books of the bank (Lopez, 2003). The bank pays the service company a fee in return for the provision of these credit administration services. A reciprocal arrangement exists, whereby the service company pays the bank a fee in return for services from the bank, which may include human resource support, teller services, or access to information technology.

Under the service company model, the bank establishes a microfinance organization that maintains a separate corporate identity. As with the SFI, this enables the bank to enter the microfinance market and expand its retail operations with minimal risk to its core bank operations and reputation. In addition, the bank avoids the costly exercise of registering the entity as a financial institution.

Isern identifies one key challenge with this model. The service company's status as a non-financial institution may translate to reduced flexibility in that it may be limited in the types of financial services it can provide.

### ***Model 4: Banks Providing Access to Their Infrastructure and Systems***

This is the first of the indirect models whereby banks enter the microfinance business by working through existing microfinance service providers and thereby have a lower level of direct engagement with the end customer. In the case of Model 4, the bank provides the MFI access to the bank's infrastructure and systems in order for

the MFI to deliver its own products and services. Bank infrastructure and systems that an MFI might use includes branch or ATM networks, front office functions such as cashier services, or back-office functions such as IT services or transactions processing. In exchange for such services from the bank, the MFI pays to the bank fees, commissions or rents, depending on the contract established.

The benefits of this model to the MFI include: reduced costs and increased operational efficiencies by utilizing existing bank infrastructure and systems which are typically more advanced; greater time to focus on relationships with clients rather than processing transactions or developing and producing reporting; and providing value to clients by referring clients to a wider suite of products and services of the bank where appropriate. Drawbacks to the MFI include: potential competition from the bank for customers where target market may overlap; or potential servicing issues where the bank provides front office cashier services to the MFIs clientele which differ from the bank's typical clientele.

The benefits of this model to the bank include: increased revenue streams via fees, commissions and rents against infrastructure and systems already in place; virtually little to no financial risk; and potential access to a pipeline of clients ready to graduate from microfinance to traditional banking products and services. Drawbacks to the bank could include branding confusion in the market, MIS incompatibility challenges, and communication challenges between the bank and MFI from top management down to service delivery staff.

The other two indirect models of involvement by commercial banks in the microfinance industry as identified by Isern and Porteous include a bank providing commercial loans to MFIs to carry out their business, and banks outsourcing microfinance retail operations by contracting a high-calibre MFI to originate and service loans that are registered on the books of the bank in exchange for a share of interest income or fees. These two models are not included in this study.

### **3.0 METHODOLOGY**

In an ideal world, a researcher with this topic could choose a question, choose desired models for study (e.g., all six Isern models described in Section 2.4 above), choose metrics which would best show the level of success of a given model, and finally choose the best data source from a variety of options. However, given the relative newness of research and analysis in the field of microfinance, limited information is available. Data availability and quality therefore drove many of the final decisions pertaining to analysis of the question under study. The following sections walk through the data source chosen, the final list of models included for analysis, indicators used to analyze performance levels, the process undertaken to establish the level of effectiveness of each commercial model in the microfinance arena, and finally a summary of weaknesses within the methodology.

#### **3.1 Data Source**

Performance indicator data for this study was collected from the MIX MARKET™ (MIX). The MIX is a global, web-based, microfinance information platform that seeks to develop a transparent information market to link MFIs worldwide with investors and donors and promote greater investment and information flows. MFIs voluntarily report their results to the MIX, and the MIX in turn verifies the quality of information provided, choosing not to include information not meeting MIX quality standards. As of February 2008, the MIX was reporting data on 1137 MFIs, 97 Funds and 165 Market Facilitators. (The Mix Market, 2008) Further, the MIX takes steps to achieve data consistency across MFIs significantly enhancing comparability of data. Finally, the MIX also creates benchmarks from the data collected on an annual basis based on all reporting MFIs, as well as on a rolling three-year basis via MIX Trend Lines data which only includes MFIs that have reported for at least four years in a row. In concert, these characteristics make the MIX the largest publicly available uniform data and benchmark set for the microfinance industry.

For a variety of reasons, there are differences in the way data has been reported by each MFI to MIX, for instance, different accounting policies in different countries.

One of the advantages of the MIX data set is its practice of adjusting financial data received from MFIs to improve comparability of results. Firstly, MIX converts financial statements from each organization into a standard format, which in most cases simplifies financial statement presentation via consolidation of line items, and in other cases drills down to provide a great level of detail than originally provided by the MFI. This reclassification is then followed by adjustments to account for the effects of subsidies, inflation, loan loss provisioning and write-offs. For example, MIX adjusts for a cost-of-funds subsidy from loans at below market rates. MIX calculates the difference between what the MFI actually paid in interest on its subsidized liabilities and what it would have paid in market terms. MIX then adds back the difference as a cost-of-funds adjustment resulting in a decrease in net income. MIX explains the reasoning for the adjustment:

We adjust participating institutions' financial statements for the effect of subsidies by presenting them as they would look on an unsubsidized basis... Most of the participating MFIs indicate a desire to grow beyond the limitations imposed by subsidized funding. The subsidy adjustment permits an MFI to judge whether it is on track toward such an outcome. A focus on sustainable expansion suggests that subsidies should be used to defray start-up costs or support innovation. The subsidy adjustment simply indicates the extent to which the subsidy is being passed on to clients through lower interest rates or whether it is building the MFI's capital base for further expansion. (MicroBanking Bulletin, n.d.)

For additional details regarding this and the other financial adjustments performed by MIX and their effects, refer to Appendix A.

Unfortunately, the MIX does not report microfinance data that can be used 'as is' to assess the effectiveness of commercial bank market entry models (nor is the researcher aware of any such source). However, with plentiful data available at the MFI level (refer to Appendix B for MIX prescribed performance indicator definitions), "model level" data could be created by the researcher by aggregating the MFI level data. This process is described in greater detail in Section 3.4.

### **3.2 Models Chosen for Analysis**

As indicated above, while it would have been ideal to analyze the performance of all six models identified by Isern (refer to Section 2.4 above), the research herewith was constrained by data availability. No "model-level" data was available (via Isern and Porteous, the MIX, or otherwise), however, model-level data could be created by

aggregating “MFI level” data from the MIX data set. Isern and Porteous provided several examples of microfinance institutions in her research for each of the six market-entry models (Isern and Porteous, 2005). That list was run against the MIX data set with a goal of meeting three criteria as completely as possible: a) the large majority of loans for the microfinance institution are “micro” (i.e., greater than 70% of the portfolio, and ideally 90-100%), b) there was a minimum of three consecutive years of data available for each indicator for each institution, and c) there was a minimum of three institutions for each model. Though not all criteria were strictly enforced, based on these three bank-level criteria, there was sufficient data to look at four of the six models.

Based on the above criteria, the four models included in this study are: the three direct models (Internal Unit, Specialized Financial Institution, and Service Company), and one of the three indirect models (Banks Providing Access to Their Infrastructure and Systems). There was insufficient data available for the planned analysis to include the remaining two indirect models (Banks Outsourcing Retail Operations, and Banks Providing Commercial Loans to Microfinance Institutions’) and therefore they were not included in this study. Refer to Appendix C for a list of the four models, the MFIs included in this study within each model, and how each of the MFIs measured up against the desired three criteria listed in the paragraph above.

### **3.3 Performance Indicators**

The practice of benchmarking and developing performance standards in the microfinance industry has become increasingly important, particularly in relation to attracting commercial banks and the formal financial sector. Performance standards play a role in raising the quality and efficiency of microfinance institutions and provide confidence and security for investors.

...there are obstacles preventing the microfinance sector from reaching its full potential, including the absence of a global framework that mainstream investors can use to assess properly the risks associated with the sector. A transparent and globally acceptable method for rating microfinance institutions would help to open up the asset class to a much wider universe of investors than would or could invest in unrated securities...Despite the level of interest, mainstream investors need standard metrics before they can invest in this particular sector. By creating standard metrics the market understands, it will draw out institutional and other investors who were on the periphery or have stayed out of the market.” (Chung, 2007, ¶12)

A number of microfinance rating agencies have been established that have made earnest attempts at closing this measurement gap. MicroRate, the PEARLS rating system, the MicroBanking Standards Project (the MicroBanking Bulletin), and CGAP's Microfinance Rating and Assessment Fund have all contributed to getting performance standards off the ground. These agencies rate MFIs based on a comprehensive set of financial and operational performance measures covering such areas as management and governance, Management Information Systems (MIS), financial conditions, credit operations, and portfolio analysis.

For the purpose of this study, the performance metrics of these various rating entities were reviewed, and a core set of questions and performance indicators repeatedly presented themselves across the various approaches as key to assessing the performance of a microfinance institution. Questions such as: How well is the MFI performing overall? How many clients are currently being served? How well is the MFI collecting its loans? Is the MFI profitable enough to maintain and expand its services without continued injections of subsidized donor funds? How well does the MFI control its administrative costs? The questions fell into four main groupings including Outreach, Collection Performance, Financial Sustainability and Profitability, and Efficiency and Productivity.

The MIX dataset has the most comprehensive set of indicators available for analysis. With the purpose of this study to provide an indication of which market entry model used by commercial banks to enter the microfinance market yields more favourable results, a sub-set of indicators across each of the four identified groupings was chosen for review. To measure Outreach, the performance indicator chosen was the Number of Active Borrowers in conjunction with the % Growth in the Number of Active Borrowers. To measure Financial Sustainability and Profitability the performance measures chosen were Return on Assets (%), Return on Equity (%) and Profit Margin (%). To measure Efficiency and Productivity, the performance indicators chosen were Cost Per Borrower (\$) and Borrowers Per Staff Member (#). To measure Collection Performance, the performance indicators chosen were the percentage of the institution's Portfolio at Risk > 30 Days, and the Write-Off Ratio. An index of these indicators and their definitions per MIX is provided in Appendix D.

In addition to the four models, a MIX benchmark result for each of the eight performance indicators was used for reference. The 2003-2005 results for the



MicroBanking Bulletin (MBB) Trend Lines benchmarks (produced by the MIX) is the most recent Trend Lines data available, and the mean results for 2005 from this data set will be used as a reference points in the analysis in Section 4.0. Note that the benchmark is only intended to provide some sense of reference for how a larger set of reporting MFIs are performing on average at a certain point in time; it is not intended that the benchmark for each indicator be a goal or expectation of performance as the contexts that the MFIs are operating in are extremely varied.

A special mention is warranted with regard to areas omitted from analysis in this study. There are several key success factors to the performance of any business such as management and governance, information flows, and organizational structure and a microfinance enterprise is no exception. These areas are difficult to quantify and without data available, were left out of this study. It is hoped that the performance indicators included herewith, taken together, provide a reasonable indication of the performance of a microfinance institution.

### **3.4 Model Performance Analysis Process**

In short, commercial model level data was created and comparative analysis completed in order to determine the 'best' performing model. The model-level analysis was followed by a validation exercise at the MFI level.

In order to complete the comparison of performance indicators at the model level, model-level data needed to first be created from MFI-level data. The MFIs included in Model 1 (the Internal Unit) were Akiba Commercial Bank of Tanzania, and Banco Solidario of Ecuador, and Khan Bank of Mongolia. The MFIs included in Model 2 (the Specialized Financial Institution) were BANGENTE of Venezuela, AMC – Ahli Microfinancing Company of Jordan, and Banestado of Chile. The MFIs included in Model 3 (the Service Company) were: Crediamigo of Brazil, Credi Fe of Ecuador and Sogesol of Haiti. Finally, the MFIs included in Model 4, Bank Provides Infrastructure and Systems, were: Compartamos of Mexico, Maya Enterprise for Microfinance of Turkey, and MEMCO of Jordan.

With the three MFIs within each model decided, to create model-level data, data was first collected for each performance indicator for each of the three MFIs within each model for the years 2004, 2005, and 2006. This MFI-level data was then aggregated up to one of the four respective models under study utilizing a simple average for each

performance indicator, thereby creating model-level data for analysis. For example, to determine the simple model average for Cost per Borrower for Model 1 for 2006, the Cost per Borrower for each of the three MFIs – namely Akiba Commercial Bank, Banco Solidario, and Khan Bank – was added together, and then divided by three. To illustrate using numbers: the Cost per Borrower for Akiba Commercial Bank for 2006 was \$270, plus Cost per Borrower for Banco Solidario for 2006 \$291, plus Cost per Borrower for Khan Bank 2006 \$80, yielding a total of \$641, then divided by three, equals \$214. Therefore, the Average Cost per Borrower for Model 1 for 2006 is \$214. This method was applied to create an average for each financial indicator for each of the four models for each of the three years, thereby yielding a complete set of model-level data.

The results of each performance indicator at the model level were then compared across the three models in order to establish a 'winning model' for each performance indicator. The winning model for each indicator was based simply on what was numerically considered the best result for that indicator based on 2006 actual results (note for Number of Active Borrowers, the winner was based on a 2005/2006 year over year growth %, rather than 2006 actual). The performance indicator "wins" by each model were then tallied and an overall model leader was decided simply based on a sum of the performance indicator "wins" for 2006.

One of the challenges of simple averages is that anomalies and outliers which may significantly skew results may be easily hidden. As a result, a multi-step validation exercise was completed on the numerical findings to eliminate or at least explain any gross deviations. The first validation check was a review of the data at the MFI level to look for trends over the three-year period from 2004 through 2006; this exercise was important because while an MFI might have the best result for a given indicator in 2006, a trend of increasingly poor performance over the last three years would indicate cause for concern with that model and might call into question the 'win'.

The second validation check was to look for any outliers at the MFI level which may have skewed the results; this check is important as an extraordinary one-time event could cause an unusually positive or negative result, respectively overstating or understating the result for that model, therefore more caution should be applied in the assessment. The third validation check was performed to acknowledge the varying sizes of the institutions evaluated. In this scenario a weighted model average for each

indicator was calculated based on institution size (determined by the number of active borrowers) to ascertain the significance of institution size in the results.

### **3.5 Weaknesses of Methodology and Data**

There are several weaknesses in the methodology and data. The first weakness is the small sample size used for the study (12 MFIs). Though the small sample size was largely driven by information constraints (e.g., information available to match institution type to model type, and subsequently availability of performance indicator data for the MFIs), the small sample size was also viewed as satisfactory for the purpose of this study which is to attain an indication of whether there may be one superior market entry model, rather than an absolute conclusion.

The second weakness in the methodology is that the microfinance institutions evaluated are very different sizes. This is partially addressed through a second validation exercise which tests for the effect of size on the final results of each model-level indicator to get an indication of impact of scale differences.

The third weakness in the methodology is that the microfinance institutions evaluated operate in completely different macroeconomic and regulatory environments all over the world. This has not been mitigated and is accepted as a weakness of this study.

The fourth weakness is that the analysis was conducted on a subset of performance indicators and that there are other key areas to success such as governance which have been left out of this study entirely. With regard to the sub-set of data, the performance indicators were carefully chosen across a range of areas in order to reasonably gauge the overall health of a microfinance institution. With regard to areas such as governance which were excluded due to difficulty to measure and lack of data availability, this weakness is simply being acknowledged and accepted for the purpose of this study.

The fifth weakness is that these institutions were established anywhere from 1990 to 2002 and as a result have vary in terms of levels of experience behind them, and where they may be in a normal business growth cycle. A normal business growth cycle for any new business might show poor performance for the first few years while the new business struggles to achieve breakeven, followed by a growth phase and then an

accelerated growth phase, and finally a general levelling off. This study in no way accounts for differing levels of experience, nor for the stage in the growth cycle that any given microfinance institution may be at.

The sixth weakness is that the study is based on only three years of data. Though it may be ideal to have a long history of data to analyze, three years is considered standard practice in banking for evaluation of the health of a given company for the purpose of extending financing. Therefore, three years is viewed as acceptable for the purpose of this study.

These weaknesses listed above are not exhaustive but do represent a core group of challenges which should be kept in mind by the reader in applying the results to another context. These results are simply intended to provide directional information about the comparative performance of the four models evaluated and in the process of improving understanding should raise more questions for consideration.

## **4.0 RESULTS AND COMPARATIVE ANALYSIS OF THE FOUR MARKET ENTRY MODELS**

The analysis below is based on the complete model-level data presented in Appendix E. Per the process outlined in Section 3.4, the result for each performance indicator was reviewed across the four models, and a “winning” model determined for each indicator based on the best 2006 results. A summary of the 2006 performance indicator results by model is presented in Table 1 below.

Subsequently, to validate the model-level findings, the indicators were reviewed at the MFI level (details presented in Appendix F) to determine whether there were any anomalies significantly skewing the results at the model level.

The performance indicator “wins” by each model were then tallied and an overall model winner decided simply based on the greatest number of performance indicator “wins” for 2006. A summary of model “wins” by performance indicator is presented in Table 2 in Section 4.5.

During the MFI-level data review, significant variation in size of the MFIs based on the number of active borrowers, was noted. To discern whether size significantly affected model results, an additional test was performed. The test computed a weighted model average for each indicator based on institution size (determined by the number of active borrowers). A comparison of model “wins” by performance indicator from before the size adjustment and after the size adjustment is presented in Table 3 in Section 4.6.

In sum, Section 4.1 through Section 4.6 below documents the findings of the analysis of the models and indicators, and is completed with overall remarks on the commercial market entry models.

**Table 1 2006 Model-Level Performance Indicator Results**

Performance Area	Indicator	MBB Benchmark	Model 1		Model 2		Model 3		Model 4	
			Internal Unit		Specialized Financial Institution		Service Company		Bank Provides Infrastructure & Systems	
Outreach / Profile	# of Active Borrowers	105,941	133,245	84,604	104,094	208,014				
	% Year over Year Growth # of Active Borrowers	23.2%	9.9%	23.8%	33.5%	52.0%				
Financial Sustainability / Profitability	% Return on Assets	1.4%	1.5%	3.7%	8.3%	7.8%				
	% Return on Equity	4.6%	17.4%	12.6%	59.9%	19.9%				
	% Profit Margin	-0.5%	11.5%	16.1%	21.7%	21.6%				
Efficiency and Productivity	\$ Cost per Borrower (USD)	\$129	\$214	\$274	\$211	\$177				
	# Borrowers per Staff Member	144	107	142	164	138				
Collection Performance	% Portfolio at Risk > 30 Days	4.1%	3.9%	4.4%	2.3%	5.2%				
	% Write-off Ratio	2.60%	2.61%	1.66%	2.62%	0.88%				

## 4.1 Outreach

### ***Number of Active Borrowers (#) and Growth (%)***

Result: Expanding the number of clients is a key goal of virtually any business, and we know that there is a particular emphasis on this within the microfinance industry today. It is therefore a higher number and one that continues trend upwards year after year which is considered better. The MBB Trend Lines benchmark for 2005 (MBB benchmark) had an average number of active borrowers of 105,941, and a year over year benchmark growth rate of 23.2% was computed. In addition, the Trend Lines report found "...median compound annual growth rates hovered at 25% over the period [2003-2005], the top quarter of high growth MFIs added new borrowers at rates above 40% annually." (Stephens, 2007, p.32)

The four models included in this study had an average number of active borrowers ranging from 84,604 to 208,014 in 2006, and growth rates ranging from 9.9% to 52%. All four models also showed an upward trend over the three years (2004 through 2006). It was Model 4 (Bank Provides Infrastructure and Systems) that achieved the strongest results in both the number of active borrowers and year over year growth rate, nearly doubling the benchmark. *"Winner": Model 4.*

Validation of Result: As mentioned above, Model 4 (Bank Provides Infrastructure and Systems) was the strongest performer with respect to the absolute number of active borrowers, as well as year over year growth in the number of active borrowers based on 2006 model level data. A review of MFI-level data revealed that the win for Model 4 in absolute numbers was driven by one MFI, Compartamos, a very large Mexican MFI that has nearly doubled its number of active borrowers since 2004. With regard to the % growth win by Model 4, this was supported by Compartamos, however it was perhaps exaggerated by the significant growth of two very small MFIs, Maya of Turkey and in particular by MEMCO of Jordan which grew 90.2% to 5,825 active borrowers in 2006. The simple average approach perhaps exaggerated the overall win by Model 4, however, all three MFIs in Model 4 were solid performers with growth trends since 2004 all moving upwards, thereby earning the 'win'. Models 2 and 3 were also strong performers, and Model 1 clearly lagged overall for this indicator with just MFI performing well. There is not a compelling case to consider adjusting the "Winner" from Model 4 for this indicator, though attention is drawn to the vast differences in institution size, which

warrants further examination. An additional validation exercise to test for the effect of size of institution on all indicators is outlined in Section 4.6 below.

## **4.2 Financial Sustainability/Profitability**

### ***Return on Assets (%)***

Result: Return on Assets (ROA) is a measure of overall health and sustainability of a business and essentially assesses how well an institution uses its assets. A positive and higher number that trends upwards is generally considered better, though unlike the number of borrowers, movement is usually within a few percentage points. Also note this measure can be fickle and vary widely based on one-time adjustments (ie. extra-ordinary gain or loss) having a significant impact. The MBB benchmark for ROA was 1.4%.

All four models included in this study performed favourably compared to the benchmark, with ROA ranging from 1.5% to 8.3% for 2006. Model 3 (Service Company) achieved the top results at 8.3%, and was the only model that achieved year over year increases since 2004; the other models experienced fluctuation, or in the case of Model 1 (Internal Unit), decreases in ROA two years in a row. *“Winner”: Model 3.*

Validation of Result: A review of the MFI level data confirmed that Models 1 and 2 were generally weaker compared with Models 3 and 4. Strong results for two MFIs in Model 4 were brought down by the -9.3% result for one MFI Maya Enterprise. Model 3 MFI results were solid and for the most part trended upwards since 2004, with the exception of fluctuations for SOGESOL. Model 3 for the purposes of this study remains the ‘winner’.

### ***Return on Equity (%)***

Result: Like ROA, ROE is also a measure of overall health and sustainability of a business, and essentially measures the return on investment in an institution. A positive and higher number that trends upwards is generally considered better, though results can vary widely depending on a number of factors such as the level of competition in a market and how hard it is driving efficiencies and portfolio quality. Results are usually significantly bigger numbers than ROA numbers.

The MBB ROA benchmark was 4.6%. In 2006, all four models in the study performed significantly better than the benchmark with average ROE ranging from



12.6% to 59.9%. Model 3 (Service Company) achieved the highest results of 59.9% and a significant year over year spike is noted in 2006 at a time when the three other models deteriorated in performance; this will be subject to further study for validation at the MFI level. *“Winner”: Model 3.*

Validation of Result: A review of the MFI level data revealed that Model 3 was the strongest performer for ROE. Each of the MFIs in Model 3 had strong performance and the general trend from 2004 through 2006 was positive. Model 2 MFIs all performed well above benchmark though there was more of a negative trend from 2004 through 2006. Results for Model 1 were extremely varied and did not provide a good sense of the performance of this model for ROE. Similarly results for Model 4 included one MFI with negative results for all three years 2004 through 2006. Model 3 for the purpose of this study remains the ‘winner’.

### ***Profit Margin (%)***

Result: Profit Margin is a key measure of profitability. A positive and higher number that trends upwards is generally considered better. The UNCDF postulates:

Most MFIs that have become profitable have done so within 10 years of start-up. However, now that microfinance knowledge and expertise are more widely available, MFIs should usually not take more than 5 years to reach sustainability, with the possible exception of MFIs working in rural areas with very low population density. (Rosenberg, 2006, p.7)

The MBB benchmark for this indicator was an average Profit Margin of -0.5%. A negative result is not generally considered healthy, though it may be perfectly fine if it represents a point in time of significant investment in infrastructure when achieving breakeven or less may be expected and controlled in the short term. As outlined in the methodology, the MBB benchmark used here is the mean; an MBB median benchmark is also available for 2005 and is 9.6%.

In 2006, all four models exceeded both the mean and median benchmarks with Profit Margin results ranging from 11.5% to 21.7%. Model 3 (Service Company) outperformed the group at 21.7%, though Model 4 (Bank Provides Infrastructure and Systems) was equally strong at 21.6%. However, only Model 3 achieved year over year increases two years in a row from 2004 through 2006. *“Winner”: Model 3.*

Validation of Result: A review of the MFI level data revealed Model 3 was the best performer overall for Profit Margin. The results for all MFIs within Model 3 were strong, well above benchmark, and generally trending upwards from 2004 through 2006. Model 1 showed weaker and inconsistent performance across MFIs for the three years, though all results were positive; the weakest result was 1.7% for Banco Solidario in 2006. The MFIs in Model 2 had results for 2006 which were generally stronger than the MFIs in Model 1, however trending was generally downwards from 2004 through 2006 for all three MFIs. Finally, the story for Model 4 at the MFI level was very similar to the story for ROA and ROE; Profit Margin results for Compartamos and MEMCO were strong, and the average was brought down significantly by the negative performance of one MFI, Maya Enterprise. This is a pattern of performance that should be considered in the overall results. Model 3 did earn solid results and its 'win' and will stand for this indicator.

### **4.3 Efficiency and Productivity**

#### ***Cost Per Borrower (\$)***

Result: Cost per Borrower is a key efficiency metric that a financial institution is always trying to drive down, without of course significantly compromising delivery of products and services. Therefore, a lower result with a decreasing trend year after year is ideal. Result however should be expected to vary depending on the average size of loan.

MFIs specializing in very small loans must maintain their cost per borrower well below US\$100 if they want to prevent an astronomically high operating expense ratio. MFIs with high average loans can, by contrast, be relatively relaxed about this measure, with many reaching US\$200/borrower... On average, the cost per borrower has remained consistent over the years in the MicroRate 32, hovering around \$186. (MicroRate, 2003, p.18)

The MBB benchmark was \$129 per borrower. All four models underperformed compared to this benchmark in 2006 with Model 4 (Bank Provides Infrastructure and Systems) achieving the best result of the four at \$177, followed by Model 3 at \$211, then Model 1 at \$214, and finally at \$274 Model 2. Model 4 and Model 2, the best and worst performers respectively, showed a decrease in costs 2 years in a row – this is

a favourable trend compared with Models 1 and 3 which showed an increase year after year. "*Winner*": Model 4.

Validation of Result: A review of the MFI-level data revealed that Model 4 was still the best performer overall for Cost per Borrower, despite results for all three MFIs underperforming the benchmark. Results for Maya and MEMCO in Model 4 trended downwards from 2004 through 2006, which is favourable for this metric, and although costs trended upwards for Compartamos for those same years, the year over year increases were modest, and Compartamos still managed to be the best performer of the three MFIs for this indicator. The other three models showed varied results. Costs were generally highest for Model 2 MFIs and trending was variable from 2004 through 2006. Costs were extremely varied across the Model 3 MFIs, with a general trend upwards which is not favourable. Model 1 too showed a negative trend upwards. Model 4 for the purpose of this study remains the 'winner' for the Cost per Borrower performance indicator.

### ***Borrowers per Staff Member (#)***

Result: Borrowers per Staff Member is a key productivity metric for microfinance institutions. "If they want to become financially viable, MFIs must be able to handle very large numbers of customers with a minimum of administrative effort and without allowing portfolio quality to deteriorate." (MicroRate, 2003, p.20). Therefore, a higher number which trends upwards is generally considered better performance. "Productivity among the MicroRate 32 has remained consistent over the past few years at approximately 130 borrowers per staff. 2002 shows a slight improvement in the sample to an average of 133 borrowers." (MicroRate, 2003, p.20)

The MBB benchmark was 144. The four models performed in a wide range from 107 to 164. Only Model 3 (Service Company), which outperformed the other models at 164, also performed above the benchmark. Models 1, 2 and 3 all showed positive trends from 2004 through 2006, and Model 4 experienced fluctuation over the same time period. *Winner*": Model 3.

Validation of Result: A review of the MFI level data for this indicator confirmed that overall Model 3 was the strongest performer for this metric. All three MFIs in Model 3 were generally trending upwards, and CrediAmigo and Credi Fe achieved results of 214 and 224 respectively for 2006, significantly outperforming the MBB

benchmark of 144. Model 2 MFIs also showed upward trends from 2004 through 2006 though actual results varied significantly from 41 to 278 for Ahli and Banestado respectively, making it difficult to draw conclusions. Models 1 and 4 each had just one MFI outperform the benchmark and 2004 through 2006 trends were variable for both. For the purpose of this study Model 3 remains the 'winner' for this performance indicator.

#### **4.4 Collection Performance**

##### ***Portfolio at Risk >30 Days (%)***

Result: PAR > 30 Days is a typical metric for evaluating the health of a loan portfolio and is a leading indicator for delinquencies and write-offs.

Repayment of an MFI's loans is a crucial indicator of performance. Poor collection of microloans is almost always traceable to management and systems weaknesses. ... healthy repayment rates are a strong signal that the loans are of real value to the clients. Finally, high delinquency makes financial sustainability impossible. As a rough rule of thumb when dealing with uncollateralized loans, Portfolio or Loans at Risk (30 days or one payment period) above 10% ... must be reduced quickly or they will spin out of control. (Rosenberg, 2006, p.4)

This is corroborated by MicroRate "...any portfolio at risk (PaR30) exceeding 10% should be cause for concern, because unlike commercial loans, most microcredits are not backed by bankable collateral." (MicroRate Technical Guide, 2003, p 6)

A result as close to 0% as possible with a downward trend year after year is ideal. The MBB benchmark was 4.1% and results for the four models for 2006 ranged from 2.3% to 5.2%. It was Model 3 (Service Company) that achieved the most favourable result at 2.3%, also showing year after year improvements since 2004. Performance year over year for the other models fluctuated, with greatest concern for Model 4 which showed deterioration in the ratio year after year since 2004 as well as having the poorest result for 2006. "*Winner*": *Model 3*.

Validation of Result: A review of the MFI level data for PAR > 30 Days confirmed that Model 3 was the strongest performer for this indicator. All MFIs within Model 3 achieved results in 2006 that were either equal to or better than the MBB benchmark. Trending was generally downwards which is favourable, with the exception of CrediFe which was fluctuating in a low range of 0.8% to 1.8% from 2004 to 2006. Models 1 and 2 each had two MFIs out of three performing worse than the benchmark with variable

trends from 2004 through 2006. Model 4 was again hindered by the results of Maya Enterprise which had results greater than 10% for both 2005 and 2006 and an unfavourable trend upwards since 2004. For the purpose of this study Model 3 remains the 'winner' for this performance indicator.

### ***Write-Off Ratio (%)***

Result: Measuring write-offs is another key indicator of an MFI's collection performance. The metric does not represent actual loan losses, but rather is an accounting entry whereby a financial institution removes loans from its books because of a substantial doubt that they will be collected. This prevents assets from being unrealistically inflated by loans which may not be recovered. (MicroRate Technical Guide, 2003, p 13).

A low result as close to 0% as possible, with a decreasing trend is ideal. The MBB benchmark for this ratio was 2.6% with results for the four models falling near or below the benchmark with a range of 0.88% to 2.62% for 2006. All four models experienced year over year fluctuation between 2004 and 2006, and it was Model 4 (Bank Provides Infrastructure and Systems) which was the strongest performer in 2006 at 0.88%. "*Winner*": Model 4.

Validation of Result: A review of MFI level data for Write-offs confirmed that Model 4 was the stronger performer in terms of write-offs. All three MFIs in Model 4 performed well in 2006, significantly outperforming the benchmark with results in the low range of 0.46% to 1.60% for 2006. At the model level, Model 2 had also performed well and was the next best performer to Model 4. At the MFI level this was corroborated with all three MFIs in Model 2 showing reasonably strong results ranging from 0.37% to 2.77% in 2006. Model 3 results were strong for CrediAmigo and Credi Fe which ranged from 0% to 1.5% between 2005 and 2006, however SOGESOL's performance brought down the Model 3's performance again with write-offs ranging from 7.00% to 15.01% in 2004 through 2006. The performance for Model 1 was varied among the three MFIs with results from 0.95% to 4.81% for 2006, and trends inconsistent from 2004 through 2006. For the purpose of this study Model 4 remains the 'winner' for this performance indicator.

## 4.5 Overall Performance

Model level findings based on 2006 performance indicator results are summarized in Table 2 below. The results show that Model 3, the Service Company, is the highest performing model (of the models included in this study) for a commercial bank entering the microfinance market. This section reviews these summary results, as well as the overall performance of each MFI and its effect on its respective model's performance, and finally, documents a reasonability check on performance indicator results based on what we know about the key features of the models themselves.

**Table 2 Summary of Model 'Wins' by Performance Indicator**

<b>Performance Area</b>	<b>Indicator</b>	<b>"Winner"</b>
Outreach/Profile	# of Active Borrowers	Model 4
	% Year over Year Growth # of Active Borrowers	
Financial Sustainability/ Profitability	% Return on Assets	Model 3
	% Return on Equity	Model 3
	% Profit Margin	Model 3
Efficiency and Productivity	\$ Cost per Borrower (USD)	Model 4
	# Borrowers per Staff Member	Model 3
Collection Performance	% Portfolio at Risk > 30 Days	Model 3
	% Write-off Ratio	Model 4
<b>"Winner"</b>		<b>Model 3</b>

Summary Findings: Firstly, Table 2 clearly shows that Model 3 was the 'winner' for five of the eight metrics for 2006 including ROA, ROE, Profit Margin, Borrowers per Staff Member, and PAR > 30 Days. This translated into a model with a reasonable balance of strengths in financial sustainability, profitability, productivity, and collection performance. Model 4 (Bank Provides Infrastructure and Systems) was the only other contender for 'wins' based on 2006 results and achieved top spot for Number and Growth in Number of Active Borrowers, Cost per Borrower and Write-offs. Moreover, Model 4 was a strong competitor with Model 3 for ROA, ROE and Profit Margin. Models 1 and 2 (Internal Unit and SFI respectively) did not win a single performance indicator.

MFI Performance and Effect on Model Performance: The methodology used to get to a winning model called for a review of each performance indicator on its own merit at the model level, with a validation at the MFI level for any major outlier that might discount the 'win' already established at the model level. In no cases did a strong reason emerge out of the MFI-level analysis to change the 'win' at the model level. However, patterns of interest did emerge in the process of the MFI-level analysis that are noteworthy.

Firstly, in the case of Model 4, it is noted that one MFI, Maya Enterprise of Turkey, repeatedly hindered the model's overall performance, with negative results for ROA, ROE and Profit Margin, a high Cost per borrower, and a PAR > 30 Days. It may be that these poor results are the product of a badly run business or unfavourable market conditions. Or the poor results may be due to Maya's young age relative to the other two MFIs in the model (Maya at four years old in 2006 compared with eight and sixteen years old for the other two MFIs), and to Maya's very small size (therefore not yet achieving economies of scale). Per the UNCDP, "...rapid growth will temporarily depress an MFI's profitability because such growth requires new investment in staff and facilities that take a period of time to become fully productive." (Rosenberg, 2006, p.7) Whatever the reason, Maya's performance detracted from what would otherwise be a strong model based on the other two MFIs, Compartamos of Mexico and MEMCO of Jordan. The small sample size of only three MFIs does make it a challenge to get a sense of how strongly correlated the poor performance of the one MFI may be to the model type.

The second observation at the MFI level is that Model 3 (Service Company), the overall winner, was weaker than Model 4 (Bank Provides Infrastructure and Systems) in three areas: Number and Growth in Number of Active Borrowers, Cost per Borrower, and Write-offs. In the case of active borrowers, the MFIs of Model 3 were all strong and Model 3 performed well relative to its peers despite not being "winner" for that indicator. However, with respect to Cost per Borrower and Write-offs, Model 3 was hindered by the performance of one MFI, SOGESOL of Haiti. Again, given the small sample size of three MFIs in each model, it is a challenge to determine whether the model may have inherent weaknesses in these two areas, or whether this is perhaps more a function of this particular MFI or other factors not tested in this study.

The third observation at the MFI level is that Model 1 and Model 2 were not top performers in any metric. The MFIs in Model 2 were generally reasonable performers,

just not impressive in any one area. The MFIs in Model 1 were generally more disappointing, with Akiba and Banco Solidario underperforming the benchmark and peers in almost every category. However, the third MFI in Model 1, Khan Bank of Mongolia, was a strong performer for most metrics and it would be interesting to better understand why this is so compared with its two peers in this model. This is important because findings at the model level for Model 1 might lead a commercial bank to believe that utilizing this internal unit approach may produce results that are reasonably attractive (per model level findings) while not taking on significant risk. However, the reality might be that there is only a one in three chance of being successful at all.

Model Results – Are they Reasonable?: Model 1, the Internal Unit, is one of the easiest and lowest risk forms of entry into microfinance for a commercial bank. This model may require simply setting up a separate department with a microloan product; the regular bank systems, infrastructure, processes and people are mostly the same. On the surface, it seems like a great way to enter the microfinance market – low cost and low risk and semi-reasonable results. However, there are a host of challenges with this model. One of these challenges is the lack of independent governance for the microfinance unit leading to guidance from traditional bankers with limited experience or perhaps worse, little interest in microfinance. This issue is compounded when management rotation policies typical to bank executive development leads to leadership change, bringing in management with little experience or interest over and over and over again. (Lopez, 2003) The results achieved by Model 1 at first glance can be deceiving with ROA, ROE, and Profit Margin all better than the MBB benchmark. However, at an MFI level two of the microfinance entities, Akiba and Banco Solidario, are in fact quite poor performers overall, and only one entity, Khan Bank, demonstrates real success. Is it possible that this model will only have reasonable success 33% of the time? It is impossible to tell based on such a small sample size, however, as Lopez points out “The new product introduction strategy is probably the lowest cost way to start microfinance operations, but it has rarely succeeded.” (Lopez, 2003, p.4)

Model 2, the Specialized Financial Institution, was also a mediocre performer at the model level. At 23%, growth could be considered average compared to benchmark. ROA, ROE, Profit Margin and Cost per Borrower were somewhat better than Model 1, however significantly weaker than Models 3 or 4. These results are perhaps reflective of the much higher cost base associated with being licensed and regulated by the banking



authorities therefore needing to meet minimum capital and other costly requirements. At an MFI level there was no entity that stood out from the others as significantly as was evident with Model 1; they were all mediocre performers.

This brings us to the strongest performers, Model 3, the Service Company, and Model 4, Bank Provides Infrastructure and Systems. In the case of Model 4, the bank is partnering with an already proven microfinance performer in the market. In exchange for fees from the MFI outlined in a complex fee for service contract, the bank provides systems and infrastructure to the MFI at a rate that would be cheaper than if the MFI had implement and maintain all of the infrastructure itself. Model 4 MFIs then benefit from lower capital costs which should translate into above average ROA, ROE and Profit Margins for the MFI. Is this the case? In fact, these measures do show strong results, performing well above benchmark, and just behind the top performer Model 3. Model 4 should also show stronger efficiency given the use of better banks systems. Does the use of bank systems positively impact Cost per Borrower for example? In fact, it does, as Model 4 was the strongest performer for Cost per Borrower in 2006.

Model 3, the Service Company, is a non-financial legal entity specially created by the bank to provide microfinance loan origination and servicing. The loans themselves are on the books of the bank, however, the origination, credit structuring, collecting, servicing, management and governance is all handled by a large group of microfinance experts. Like Model 4, Model 3 (Service Company), also has lower costs for the MFI, however, the source of those cost savings is different. As a non-financial institution, the Service Company saves on costs associated with licensing, and does not require a large equity base. Do these lower costs translate into above average ROA, ROE and Profit Margin? In fact, they do, with Model 3 showing superior performance in this area compared with all the models.

## **4.6 Testing Effect of Size on Results**

During MFI-level validation analysis, a wide variation in institution size based on active borrowers became evident. Unlike factors such as governance, or regulation, the impact of size can be more easily assessed simply by recalculating results by adjusting for size. This was adjustment calculation was done for all eight performance indicators for 2006 at the model level to determine if the 'winner' for each performance indicator would change. Refer to Appendix G for a complete view of model averages compared to

the weighted model averages based on institution size. Table 3 below summarizes the results of the size adjustment exercise.

**Table 3 Summary of ‘Wins’ Pre and Post Adjustment for MFI Size**

<b>Performance Area</b>	<b>Indicator</b>	<b>“Winner” 2006 Numerical</b>	<b>“Winner” Post Size Adjustment</b>
Outreach/Profile	# of Active Borrowers	Model 4	Model 4
	% Year over Year Growth # of Active Borrowers		
Financial Sustainability/ Profitability	% Return on Assets	Model 3	Model 4
	% Return on Equity	Model 3	Model 3
	% Profit Margin	Model 3	Model 4
Efficiency and Productivity	\$ Cost per Borrower (USD)	Model 4	Model 3
	# Borrowers per Staff Member	Model 3	Model 2
Collection Performance	% Portfolio at Risk > 30 Days	Model 3	Model 4
	% Write-off Ratio	Model 4	Model 4
<b>“Winner”</b>		<b>Model 3</b>	<b>Model 4</b>

There are several findings of interest. Perhaps the most striking finding at first glance is that after adjusting for institution size, the overall “winner” changes from Model 3 (Service Company) to Model 4 (Bank Provides Infrastructure and Systems). The second interesting finding is that the model now in second place is Model 3, and therefore it is the same two models contending for top spot. A more detailed look at the indicators shows that three of the eight indicators – Active Borrowers, ROE, and Write-offs – experienced no change to the “winner”. Perhaps most interesting, four of the five changes were either Model 3 as the “winner” switching to Model 4 after the size adjustment, or Model 4 as the “winner” switching to Model 3 after the size adjustment. The results of this size adjustment exercise essentially reinforce the results described in Section 4.5 – Models 3 and 4 continue to show the strongest performance of the four models.

## 5.0 CONCLUSION

The intention of this study was to determine whether there might be a commercial bank market entry model into microfinance that tended to be more successful than other models. The findings per the methodology outlined trumpet Model 3, the Service Company, as the strongest performing model overall. There were acknowledged weaknesses in the methodology, one of which was the potential negative impact of using a simple average at the model level to decide the 'winner' of that performance indicator. However, even at the MFI level the Service Company MFIs showed a general superiority across MFIs and performance indicators.

There was however a second model that also demonstrated a high level of performance, Model 4, "Bank Provides Infrastructure and Systems". After a recalculation to test the effect of institution size on performance indicator 'wins', Model 4 actually became the top performer, with Model 3 falling to second. In the weaknesses section of the methodology, a number of factors beyond size were highlighted that could significantly impact the effectiveness of any given model. These factors relate to the nature of the macroeconomic environment, the state of banking or microfinance regulation, legal infrastructure, governance, leadership, and so on. These additional factors were not addressed in this study. The results from testing the effect of size should be a stark reminder that there are a host of variables for any commercial bank to consider besides the ones accounted for herewith.

The microfinance industry would greatly benefit from more research that would enable commercial banks to both leverage their strengths and help close the estimated \$250 billion microfinance funding gap. If the information on the MFIs were available, a valuable next step could be performing this same study on a larger scale in order to achieve statistical significance – this would provide greater comfort with the findings. A more impactful study would be one that integrates analysis of key influential factors such as those related to the macroeconomic or legal and regulatory environments.

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## **APPENDICES**

## Appendix A: Financial Statement Adjustments and their Effects

Adjustment	Effect on Financial Statements	Type of Institution Most Affected by Adjustment
Inflation adjustment of equity (minus net fixed assets)	Increases financial expense accounts on income statement, to some degree offset by inflation income account for revaluation of fixed assets. Generates a reserve in the balance sheet's equity account, reflecting that portion of the MFI's retained earnings that has been consumed by the effects of inflation. Decreases profitability and "real" retained earnings.	MFI's funded more by equity than by liabilities will be hardest hit, especially in high inflation countries.
Reclassification of certain long term liabilities into equity, and subsequent inflation adjustment	Decreases concessional loan account and increases equity account; increases inflation adjustment on income statement and balance sheet.	NGOs that have very long-term, very low-interest "loans" from international agencies that function more as donations than loans, or transformed institutions with subordinated debt.
Cost of funds adjustment	Increases financial expense on income statement to the extent that the MFI's liabilities carry a below-market rate of interest. Decreases net income and increases subsidy adjustment account on balance sheet.	MFI's with heavily subsidized loans (i.e. large lines of credit from governments or international agencies at highly subsidized rates).
Reclassification of donations below net operating income	Reduces net operating income on the income statement. Increases accumulated donations account under equity on the balance sheet.	NGOs during their start-up phase. This adjustment is relatively less important for mature institutions.
In-kind subsidy adjustment (e.g., donation of goods or services: line staff paid by technical assistant providers)	Increases administrative expense on income statement to the extent that the MFI is receiving subsidized or donated goods or services. Decreases net income, increases subsidy adjustment account on balance sheet.	MFI's using goods or services which they are not paying a market based cost (i.e. MFIs during their start-up phase).
Loan loss provisioning adjustment	Usually increases loan loss provision expense on income statement and loan loss reserve on balance sheet.	MFI's that have unrealistic loan loss provisioning policies.
Write-off adjustment	On balance sheet, reduces gross loan portfolio and loan loss reserve by an equal amount, so that neither net loan portfolio nor total assets is affected.	MFI's that leave non-performing loans on their books for over a year.

Source: Microfinance Information Exchange



## Appendix B: Indicator Definitions

Indicators	Definitions
<b><i>Institutional Characteristics</i></b>	
Number of MFIs	Sample size of group
Age	Years functioning as an MFI
Total Assets	Total assets, adjusted for inflation and standardized provisioning for loan impairment and write-offs
Offices	Number, including head office
Personnel	Total number of staff members
<b><i>Financing Structure</i></b>	
Capital/Asset Ratio	Adjusted Total Equity/Adjusted Total Assets
Commercial Funding Liabilities Ratio	(Voluntary and Time Deposits + Borrowings at Commercial Interest Rates) / Adjusted Average Gross Loan Portfolio
Debt to Equity	Adjusted Total Liabilities/Adjusted Total Equity
Deposits to Loans	Voluntary Deposits/Adjusted Gross Loan Portfolio
Deposits to Total Assets	Voluntary Deposits/Adjusted Total Assets
Portfolio to Assets	Adjusted Gross Loan Portfolio/Adjusted Total Assets
<b><i>Outreach Indicators</i></b>	
Number of Active Borrowers	Number of Borrowers with loans outstanding, adjusted for standardized write-offs
Percent of Women Borrowers	Number of active women borrowers/Adjusted Number of Active Borrowers
Number of Loans Outstanding	Number of Loans Outstanding, adjusted for standardized write-offs
Gross Loan Portfolio	Gross Loan Portfolio, adjusted for standardized write-offs
Average Loan Balance per borrower	Adjusted Gross Loan Portfolio/Adjusted Number of Active Borrowers
Average Loan Balance per Borrower/GNI per Capita	Adjusted Average Loan Balance per Borrower/GNI per Capita
Average Outstanding Balance	Adjusted Gross Loan Portfolio/Adjusted Number of Loans Outstanding
Average Outstanding Balance/GNI per Capita	Adjusted Average Outstanding Balance/GNI per Capita
Number of Voluntary Depositors	Number of Depositors with voluntary deposit and time deposit accounts
Number of Voluntary Deposit Accounts	Number of Voluntary Deposit and time deposit accounts
Voluntary Deposits	Total value of Voluntary Deposit and time deposit accounts
Average Deposit Balance per Depositor	Voluntary Deposits/Number of Voluntary Depositors
Average Deposit Balance per Depositor/GNI per Capita	Average Deposit Balance per Depositor/GNI per capita
Average Deposit Account Balance	Voluntary Depositors/Number of Voluntary Deposit Accounts
Average Deposit Account Balance/GNI per Capita	Average Deposit Account Balance/GNI per capita
<b><i>Macroeconomic Indicators</i></b>	
GNI per Capita	Total income generated by a country's residents, irrespective of location / Total number of residents
GDP Growth Rate	Annual growth in the total output of goods and services occurring within the territory of a given country
Deposit Rate	Interest rate offered to resident customers for demand, time or savings deposits
Inflation Rate	Annual change in average consumer prices
Financial Depth	Money aggregate including currency, deposits and electronic currency (M3)/GDP
<b><i>Overall Financial Performance</i></b>	
Return on Assets	(Adjusted Net Operating Income - Taxes) / Adjusted Average Total Assets
Return on Equity	(Adjusted Net Operating Income - Taxes) / Adjusted Average Total Equity
Operational Self-Sufficiency	Financial Revenue / (Financial Expense + Impairment Losses on Loans + Operating Expense)
Financial Self-Sufficiency	Adjusted Financial Revenue / Adjusted (Financial Expense + Impairment Losses on Loans + Operating Expense)

Indicators	Definitions
<b>Revenues</b>	
Financial Revenue/Assets	Adjusted Financial Revenue / Adjusted Average Total Assets
Profit Margin	Adjusted New Operating Income / Adjusted Financial Revenue
Yield on Gross Portfolio (nominal)	Adjusted Financial Revenue from Loan Portfolio / Adjusted Average Gross Loan Portfolio
Yield on Gross Portfolio (real)	(Adjusted Yield on Gross Portfolio (nominal) - Inflation Rate) / (1 + Inflation Rate)
<b>Expenses</b>	
Total Expense/Assets	Adjusted (Financial Expense + Net Loan Loss Provision Expense + Operating Expense) / Adjusted Average Total Assets
Financial Expense/Assets	Adjusted Financial Expense / Adjusted Average Total Assets
Provision for Loan Impairment/Assets	Adjusted Impairment Losses on Loans / Adjusted Average Total Assets
Operating Expense/Assets	Adjusted Operating Expense / Adjusted Average Total Assets
Personnel Expense/Assets	Adjusted Personnel Expense / Adjusted Average Total Assets
Administrative Expense/Assets	Adjusted Administrative Expense / Adjusted Average Total Assets
Adjustment Expense/Assets	(Adjusted New Operating Income - Unadjusted Net Operating Income) / Adjusted Average Total Assets
<b>Efficiency</b>	
Operating Expense/Loan Portfolio	Adjusted Operating Expense / Adjusted Average Gross Loan Portfolio
Personnel Expense/Loan Portfolio	Adjusted Personnel Expense / Adjusted Average Gross Loan Portfolio
Average Salary/GNI per Capita	Adjusted Average Personnel Expense / GNI per Capita
Cost per Borrower	Adjusted Operating Expense / Adjusted Average Number of Active Borrowers
Cost per Loan	Adjusted Operating Expense / Adjusted Average Number of Loan
Productivity Borrowers per Staff Member	Productivity
Adjusted Number of Active Borrowers / Number of Personnel Loans per Staff Member	Adjusted Number of Loans Outstanding / Number of Personnel
Borrowers per Loan Officer	Adjusted Number of Active Borrowers / Number of Loan Officers
Loans per Loan Officer	Adjusted Number of Loans Outstanding / Number of Loan Officers
Voluntary Depositors per Staff Member	Number of Voluntary Depositors / Number of Personnel
Deposit Accounts per Staff Member	Number of Deposit Accounts / Number of Personnel
Personnel Allocation Ratio	Number of Loan Officers / Number of Personnel
<b>Risk and Liquidity</b>	
Portfolio at Risk > 30 Days	Outstanding balance, portfolio overdue > 30 days + renegotiated portfolio / Adjusted Gross Loan Portfolio
Portfolio at Risk > 90 Days	Outstanding balance, portfolio overdue > 90 days + renegotiated portfolio / Adjusted Gross Loan Portfolio
Write-Off Ratio	Adjusted value of loans written off / Adjusted Average Gross Loan Portfolio
Loan Loss Rate	(Adjusted Write-offs - Value of Loans Recovered) / Adjusted Average Gross Loan Portfolio
Risk Coverage Ratio	Adjusted Impairment Loss Allowance / PAR > 30 Days
Non-earning Liquid Assets as a % of Total Assets	Adjusted Cash and Banks/ Adjusted Total Assets
Current Ratio	Short Term Assets / Short Term Liabilities

Source: Microfinance Information Exchange

### Appendix C: Profiles of Microfinance Institutions Included in Study

Model	Direct/ Indirect	Name of Microfinance Institution	Affiliated Bank	Country	Financial Institution Type	Year Established	Regulated?	% Loan Portfolio Microfinance	MBB f/s data available			Quality of Information Disclosure (of 5 ♦)
									2006	2005	2004	
1. The Internal Unit	Direct	Akiba Commercial Bank	Akiba Commercial Bank	Tanzania	Bank	1997	n/a	71-80	yes	yes	yes	♦♦♦♦
		Banco Solidario	Banco Solidario	Ecuador	Bank	1995	yes	91-100	yes	yes	yes	♦♦♦♦♦
		Khan Bank	Khan Bank	Mongolia	Bank	1991	n/a	51-60	yes	yes	yes	♦♦♦♦♦
2. The Specialized Financial Institution	Direct	BANGENTE <sup>1</sup>	Banco Caribe	Venezuela	Bank	1997	yes	91-100	yes	yes	yes	♦♦♦♦♦
		AMC <sup>2</sup>	Jordan National Bank	Jordan	NBFI	1999	yes	91-100	yes	yes	yes	♦♦♦♦♦
		Banestado Microempresas	Banco del Estado	Chile	Bank	1996	n/a	91-100	yes	yes	no	♦♦♦♦♦
3. The Service Company	Direct	CrediAmigo	Banco do Nordeste	Brazil	Bank	1997	yes	91-100	yes	yes	yes	♦♦♦♦
		Credi Fe	Banco Pichincha	Ecuador	Other	1999	yes	91-100	yes	yes	yes	♦♦♦♦
		SOGESOL	SOGEBANK	Haiti	NBFI	2000	yes	91-100	yes	yes	yes	♦♦♦♦♦
4. Bank Provides Infrastructure and Systems	Indirect	Compartamos	Banamex	Mexico	Bank	1990	yes	91-100	yes	yes	yes	♦♦♦♦♦
		Maya Enterprise for Microfinance	Garanti Bankasi	Turkey	NGO	2002	no	91-100	yes	yes	yes	♦♦♦♦
		MEMCO	Housing Bank for Trade & Finance	Jordan	Other	1998	no	91-100	yes	yes	yes	♦♦♦♦

<sup>1</sup> Banco de la Gente Emprendadora

<sup>2</sup> Ahli Microfinancing Company

Source: MBB

## Appendix D: MixMarket Performance Indicators and Definitions

<b>MIX Market - Indicators and Definitions [FROM MAIN YEAR BY YEAR WEBSITE GLOSSARY]</b>	
<b>Indicator</b>	<b>Definition</b>
Number of Active Borrowers	The number of individuals who currently have an outstanding loan balance with the MFI or are responsible for repaying any portion of the Gross Loan Portfolio
Return on Assets	Net Operating Income, less taxes / Period Average Assets
Return on Equity	Net Operating Income, less taxes / Period Average Total Equity
Profit Margin	Net Operating Income / Financial Revenue (Total)
Cost per Borrower	Operating Expense / Period Average Number of Active Borrowers
Borrowers per Staff Member	Number of Active Borrowers / Number of Personnel
Portfolio at Risk > 30 Days	Portfolio at Risk > 30 Days / Gross Loan Portfolio
Write-off Ratio	Write Offs for the 12-month period / Period Average Gross Loan Portfolio

Source: [http://www.mixmarket.org/en/glossary/glossary\\_from\\_demand.asp](http://www.mixmarket.org/en/glossary/glossary_from_demand.asp)

<b>2005 MIX Market Trend Lines Benchmark - Indicators and Definitions [FROM 2003-2005 TREND LINES MBB 15]</b>	
<b>Indicator</b>	<b>Definition</b>
Number of Active Borrowers	Number of borrowers with loans outstanding, adjusted for standardized write-offs
Return on Assets	Adjusted Net Operating Income, net of taxes / Adjusted Average Total Assets
Return on Equity	Adjusted Net Operating Income, net of taxes / Adjusted Average Total Equity
Profit Margin	Adjusted Net Operating Income / Adjusted Financial Revenue
Cost per Borrower	Adjusted Operating Expense / Adjusted Average Number of Active Borrowers
Borrowers per Staff Member	Adjusted Number of Active Borrowers / Number of Personnel
Portfolio at Risk > 30 Days	Outstanding Balance, loans overdue > 30 Days / Adjusted Gross Loan Portfolio
Write-off Ratio	Value of loans written-off / Adjusted Average Gross Loan Portfolio

Source: MicroBanking Bulletin, Issue 14, Spring 2007, pp 53-54

Appendix E: Comparative Analysis of Four Market Entry Models

Performance Area	Indicator	2005 MBB Benchmark	Model 1 Average (Internal Unit)			Model 2 Average (Specialized Financial Institution)			Model 3 Average (Service Company)			Model 4 Average (Bank Provides Infrastructure & Systems)				"Winner"
			2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual		
Outreach/Profile	# of Active Borrowers	105,941	133,245	115,513	93,151	84,604	66,883	48,121	104,094	84,139	68,528	208,014	152,498	104,549	Model 4	
	% Year over Year Growth	23.2%	9.9%	23.0%	-	23.8%	66.2%	-	33.5%	16.4%	-	<b>52.0%</b>	24.4%	-		
Financial Sustainability / Profitability	# of Active Borrowers															
	% Return on Assets	1.4%	1.5%	2.1%	2.4%	3.7%	2.6%	6.0%	<b>8.3%</b>	4.8%	3.9%	7.8%	8.3%	-0.8%	Model 3	
	% Return on Equity	4.6%	17.4%	23.8%	25.9%	12.6%	13.7%	33.0%	<b>59.9%</b>	31.9%	36.1%	19.9%	20.0%	9.5%	Model 3	
Efficiency and Productivity	% Profit Margin	-0.5%	11.5%	13.2%	14.2%	16.1%	12.3%	23.0%	<b>21.7%</b>	11.1%	9.5%	21.6%	22.6%	-7.5%	Model 3	
	\$ Cost per Borrower (USD)	\$129	\$214	\$194	\$193	\$274	\$280	\$327	\$211	\$180	\$170	<b>\$177</b>	\$190	\$208	Model 4	
Collection Performance	# Borrowers per Staff Member	144	107	115	98	142	134	115	<b>164</b>	143	129	138	113	122	Model 3	
	% Portfolio at Risk > 30 Days	4.1%	3.9%	7.1%	2.2%	4.4%	4.8%	0.9%	<b>2.3%</b>	3.9%	5.6%	5.2%	5.1%	4.6%	Model 3	
	% Write-off Ratio	2.60%	2.61%	2.52%	3.18%	1.66%	1.01%	1.11%	<b>0.88%</b>	5.89%	5.27%	2.88%	2.88%	0.68%	Model 4	
<b>Overall "Winner"</b>															<b>Model 3</b>	

## Appendix F: MFI-Level Data for Each of the Four Market Entry Models

### Validation - Model 1 The Internal Unit, MFI-Level Results

Performance Area	Indicator	2005 MBB Benchmark	Akiba Commercial Bank, Tanzania			Banco Solidario, Ecuador			Khan Bank, Mongolia		
			2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual
Outreach/Profile	# of Active Borrowers	105,941	15,531	15,507	12,903	149,490	153,452	135,855	234,715	177,581	130,695
	% Year over Year Growth # of Active Borrowers	23.2%	0.2%	20.2%	-	-2.6%	13.0%	-	32.2%	35.9%	-
Financial Sustainability / Profitability	% Return on Assets	1.4%	-0.2%	2.2%	2.6%	0.3%	1.4%	2.0%	4.5%	2.6%	2.5%
	% Return on Equity	4.6%	-1.8%	17.4%	17.3%	2.8%	17.5%	22.9%	51.3%	36.4%	37.5%
	% Profit Margin	-0.5%	3.2%	14.8%	16.3%	1.7%	7.0%	10.4%	29.5%	17.7%	15.8%
Efficiency and Productivity	\$ Cost per Borrower (USD)	\$129	\$270	\$259	\$299	\$291	\$251	\$212	\$80	\$72	\$68
	# Borrowers per Staff Member	144	70	72	64	162	193	163	88	80	67
Collection Performance	% Portfolio at Risk > 30 Days	4.1%	4.9%	14.3%	5.0%	5.2%	4.2%	1.5%	1.8%	2.8%	n/a
	% Write-off Ratio	2.60%	4.81%	6.93%	9.05%	2.06%	0.46%	0.49%	0.95%	0.18%	n/a

Validation - Model 2 The Specialized Financial Institution, MFI-Level Results

Performance Area	Indicator	2005 MBB Benchmark	Banco de la Gente Emprendadora, Venezuela			Ahli Microfinancing Company, Jordan			Banestado Microempresas, Chile		
			2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual
Outreach/Profile	# of Active Borrowers	105,941	32,058	29,818	14,211	2,685	2,003	1,269	219,069	168,829	128,883
	% Year over Year Growth # of Active Borrowers	23.2%	7.5%	109.8%	-	34.0%	57.8%	-	29.8%	31.0%	-
Financial Sustainability / Profitability	% Return on Assets	1.4%	2.4%	3.9%	11.0%	8.0%	2.7%	4.2%	0.8%	1.2%	2.8%
	% Return on Equity	4.6%	19.9%	23.3%	47.7%	9.0%	3.0%	4.9%	9.0%	14.8%	46.3%
	% Profit Margin	-0.5%	9.0%	14.3%	26.8%	33.3%	13.6%	16.3%	6.0%	8.9%	25.9%
	\$ Cost per Borrower (USD)	\$129	\$303	\$280	\$323	\$331	\$371	\$488	\$188	\$190	\$169
Efficiency and Productivity	# Borrowers per Staff Member	144	108	102	83	41	38	33	278	261	230
	% Portfolio at Risk > 30 Days	4.1%	1.8%	1.9%	1.1%	6.6%	6.9%	0.0%	4.7%	5.5%	1.7%
Collection Performance	% Write-off Ratio	2.60%	2.77%	1.17%	1.26%	0.37%	0.00%	0.00%	1.84%	1.87%	2.08%

Validation - Model 3 The Service Company, MFI-Level Results

Performance Area	Indicator	2005 MBB Benchmark	CrediAmigo, Brazil			Credi Fe, Ecuador			SOGESOL, Haiti		
			2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual
Outreach/Profile	# of Active Borrowers	105,941	235,740	195,378	162,868	66,379	50,142	34,507	10,164	6,896	8,208
	% Year over Year Growth # of Active Borrowers	23.2%	20.7%	20.0%	-	32.4%	45.3%	-	47.4%	-16.0%	-
Financial Sustainability / Profitability	% Return on Assets	1.4%	17.2%	12.4%	4.3%	1.1%	0.4%	0.2%	6.6%	1.5%	7.2%
	% Return on Equity	4.6%	63.7%	67.5%	38.0%	58.9%	17.0%	7.7%	57.2%	11.2%	62.5%
	% Profit Margin	-0.5%	31.4%	21.9%	9.1%	17.8%	7.1%	5.1%	16.0%	4.3%	14.1%
Efficiency and Productivity	\$ Cost per Borrower (USD)	\$129	\$72	\$67	\$57	\$163	\$176	\$172	\$398	\$297	\$280
	# Borrowers per Staff Member	144	214	199	185	224	188	131	54	43	71
Collection Performance	% Portfolio at Risk > 30 Days	4.1%	1.3%	1.6%	1.9%	1.5%	0.8%	1.8%	4.1%	9.5%	13.1%
	% Write-off Ratio	2.60%	0.87%	1.50%	3.48%	0.00%	1.17%	0.11%	7.00%	15.01%	12.21%



Validation - Model 4 Indirect, Bank Provides Infrastructure and Systems, MFI-Level Results

Performance Area	Indicator	2005 MBB Benchmark	Compartamos, Mexico			Maya Enterprise for Microfinance, Turkey			MEMCO, Jordan		
			2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual	2006 actual	2005 actual	2004 actual
Outreach/Profile	# of Active Borrowers	105,941	616,528	453,131	309,637	1,689	1,301	1,058	5,825	3,063	2,951
	% Year over Year Growth # of Active Borrowers	23.2%	36.1%	46.3%	-	29.8%	23.0%	-	90.2%	3.8%	-
Financial Sustainability / Profitability	% Return on Assets	1.4%	23.2%	21.1%	18.3%	-9.3%	-2.7%	-24.8%	9.4%	6.4%	4.2%
	% Return on Equity	4.6%	57.4%	55.2%	48.5%	-10.0%	-2.8%	-25.6%	12.4%	7.6%	5.4%
	% Profit Margin	-0.5%	44.8%	41.1%	40.4%	-26.1%	-7.5%	-89.2%	46.1%	34.1%	26.4%
	\$ Cost per Borrower (USD)	\$129	\$141	\$137	\$121	\$236	\$244	\$303	\$153	\$189	\$201
Efficiency and Productivity	# Borrowers per Staff Member	144	192	197	198	106	77	106	117	64	61
	% Portfolio at Risk > 30 Days	4.1%	1.1%	1.2%	0.6%	13.2%	11.3%	3.6%	1.3%	2.8%	9.5%
Collection Performance	% Write-off Ratio	2.60%	0.57%	0.51%	0.24%	1.60%	1.84%	0.00%	0.46%	6.29%	1.81%

## Appendix G: Weighted Model Averages Based on Institution Size

Model	Microfinance Institution	# of Active Borrowers 2006	Size Adjustment Factor <sup>1</sup>	# of Active Borrowers 2006/2005			Return on Assets (%) 2006			Return on Equity (%) 2006			Profit Margin (%) 2006			Cost per Borrower (\$) 2006			Borrowers per Staff Member (#) 2006			Portfolio at Risk > 30 Days (%) 2006			Write-Off Ratio (%) 2006		
				MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth	MFI % Growth	Model Average % Growth	WMA <sup>2</sup> % Growth
1	Akiba Commercial Bank	15,531	0.04	0.2%	9.9%	17.9%	-0.2%	1.5%	31.1%	3.2%	11.5%	18.1%	\$270	70	4.9%	4.81%	4.9%	3.9%	3.1%	4.81%	2.61%	4.81%	2.06%	2.61%	1.52%		
	Banco Solidario	149,490	0.37	-2.6%	9.9%	17.9%	0.3%	1.5%	17.4%	1.7%	11.5%	18.1%	\$291	162	5.2%	2.06%	5.2%	3.9%	3.1%	2.06%	2.61%	2.06%	2.06%	2.61%	1.52%		
	Khan Bank	234,715	0.59	32.2%	9.9%	17.9%	4.5%	1.5%	51.3%	29.5%	11.5%	18.1%	\$60	88	1.8%	0.95%	1.8%	3.9%	3.1%	0.95%	2.61%	0.95%	2.06%	2.61%	1.52%		
	<b>Total</b>	<b>399,736</b>																									
2	BANGENTE	32,058	0.13	7.5%	23.8%	27.0%	2.4%	3.7%	12.6%	9.0%	16.1%	6.7%	\$303	108	1.8%	2.77%	1.8%	4.4%	4.3%	2.77%	1.66%	2.77%	0.37%	1.66%	1.94%		
	AMC-Ahli Microfinancing Co.	2,685	0.01	34.0%	23.8%	27.0%	8.0%	3.7%	9.0%	33.3%	16.1%	6.7%	\$331	41	6.6%	0.37%	6.6%	4.4%	4.3%	0.37%	1.66%	0.37%	1.66%	1.94%	1.94%		
	Banestado Microempresas	219,069	0.86	29.8%	23.8%	27.0%	0.8%	3.7%	9.0%	6.0%	16.1%	6.7%	\$188	278	4.7%	1.84%	4.7%	4.4%	4.3%	1.84%	1.66%	1.66%	1.84%	1.66%	1.94%		
	<b>Total</b>	<b>253,812</b>																									
3	Crediamigo	235,740	0.75	20.7%	33.5%	24.0%	17.2%	8.3%	59.9%	31.4%	21.7%	28.0%	\$72	214	1.3%	0.87%	1.3%	2.3%	1.4%	0.87%	2.62%	0.87%	0.00%	2.62%	0.88%		
	Credi Fe	66,379	0.21	32.4%	33.5%	24.0%	1.1%	8.3%	58.9%	17.8%	21.7%	28.0%	\$163	224	1.5%	0.00%	1.5%	2.3%	1.4%	0.00%	2.62%	0.87%	0.00%	2.62%	0.88%		
	SOGESOL	10,164	0.03	47.4%	33.5%	24.0%	6.6%	8.3%	57.2%	16.0%	21.7%	28.0%	\$398	54	4.1%	7.00%	4.1%	2.3%	1.4%	7.00%	2.62%	0.87%	7.00%	2.62%	0.88%		
	<b>Total</b>	<b>312,283</b>																									
4	Compartamos	616,528	0.99	36.1%	52.0%	36.5%	23.2%	7.8%	19.9%	44.8%	21.6%	44.6%	\$141	192	1.1%	0.57%	1.1%	5.2%	1.2%	0.57%	0.88%	0.57%	1.60%	0.88%	0.57%		
	Maya Enterprise for Microfinance	1,689	0.00	29.8%	52.0%	36.5%	-9.3%	7.8%	-10.0%	-26.1%	21.6%	44.6%	\$236	106	13.2%	1.60%	13.2%	5.2%	1.2%	1.60%	0.88%	0.88%	1.60%	0.88%	0.57%		
	MEMCO	5,825	0.01	90.2%	52.0%	36.5%	9.4%	7.8%	12.4%	46.1%	21.6%	44.6%	\$153	117	1.3%	0.46%	1.3%	5.2%	1.2%	0.46%	0.88%	0.88%	0.46%	0.88%	0.57%		
	<b>Total</b>	<b>624,042</b>																									
	<b>"Winner"</b>				Model 4	Model 4		Model 3	Model 3	Model 3	Model 3	Model 4		Model 4	Model 4	Model 4		Model 3	Model 3	Model 3	Model 4		Model 4	Model 4	Model 4		

<sup>1</sup> Size Adjustment Factor is the number of active borrowers for a given MFI relative to the total number of active borrowers for the model. Due to the varying sizes of the institutions within each model, the Size Adjustment Factor was created in order to modify the relative weight of a given institution.

<sup>2</sup> WMA = 'Weighted Model Average'. WMA is the sum of individual MFI results within a model, multiplied by the respective Size Adjustment Factor.

Key:

	Simple Average Model "Winner"
	Weighted Average Model "Winner"