MONITOR **INCLUSIVE MARKETS**

Micromortgages:

A MACRO OPPORTUNITY IN LOW-INCOME HOUSING FINANCE

Nishant Lalwani, Kushagra Merchant & Bala Venkatachalam October 2010

Monitor is a management consulting and merchant banking group with over 1000 professionals in 22 offices across the globe. Started by Professor Michael Porter and a group of his colleagues at the Harvard Business School, our focus has been on fundamentally enhancing and sustaining the performance of our clients in the private, public and non-profit sectors.

In 2006, Monitor started its Inclusive Markets Practice in India that aims to catalyze market based solutions (MBSs) for creating social impact among the B60 (bottom 60% of the economic population). Our work strives to understand and scale up commercially viable business models that either engage the B60 as customers for socially beneficial products or as producers/suppliers in value-creating market opportunities. For the past 4 years, we have had a dedicated team catalyzing the market for good quality housing affordable for the low-income customer in urban India. We have worked on a number of market-making initiatives and with a broad group of stakeholders to stimulate housing supply and strengthen the broader ecosystem.

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Micromortgages

A MACRO OPPORTUNITY IN LOW-INCOME HOUSING FINANCE

WHY DID WE WRITE THIS PAPER?

Monitor's 2006-07 study for the National Housing Bank (funded by the FIRST initiative and supported by the World Bank), **"Expanding the Housing Finance Market to cover lower middle income segments in India"** set the foundations for our sustained engagement in low-income housing over the past four years. It focused on understanding and testing the commercial viability of a low-income housing project through a series of pilots with developer partners.

In 2010 Monitor conducted a follow-up study, **"Building Houses, Financing Homes"**[1] to map the current low-income housing landscape in India. Encouragingly, it revealed significant developments in both the housing supply and housing finance since 2006-07.

However, even before the 2010 study, it was apparent that access to affordable housing finance was becoming a critical bottleneck to further growth in the market.

To find out more, Monitor engaged in extensive discussions with players in the housing finance market. This included pioneers serving lower income customers, such as Dewan and Gruh. It also included newer entrants such as Micro Housing Finance Corporation (MHFC) and MAS Financial Services that focus exclusively on lower-income households, especially in the informal sector. Monitor also talked to existing high street players including market leader HDFC (Housing Development Finance Corporation), leading public sector banks and microfinance institutions that have experimented in this space.

The objectives behind these discussions were to gain an understanding of the current business model of HFCs[2] (including those serving higher income groups) and the 'field' challenges they faced when focused on lower income groups (especially around credit assessment); and to develop a baseline economic model.

With intensive co-operation from Dewan, Gruh, MHFC, MAS Financial Services, and HDFC, Monitor gained an insight into the cost data at the level of individual branches and transactions. These elements were then used to model an indicative start-up HFC that would primarily service the informal segment—and to validate whether that business could be commercially viable over the long term.

The insights derived from these discussions, the modeling exercise and our knowledge of the low-income housing space is articulated in this paper. Our intention is to encourage interest and debate around low-income housing finance and to highlight the opportunity it presents. We strongly believe this space would benefit greatly from experimentation in terms of the business model and customer management strategy. Additionally, the continuing support of broad-based players such as National Housing Bank (NHB) will be pivotal in creating an environment that encourages the growth of 'micromortgages' within India.

1 The study was commissioned by the NHB, funded by the FIRST initiative and supported by the World Bank. The detailed study is available in the public domain, and available for download at the NHB and Monitor websites.

2 HFCs - Housing Finance Companies

EXECUTIVE SUMMARY

Tens of millions of India's low-income urban families live in poorly constructed houses, with deplorable sanitary conditions and lacking in basic amenities. Housing is not only an end in itself, but also a gateway to wider benefits that can fundamentally alter a household's quality of life—such as improved healthcare and asset creation. However, despite strong demand, lack of access to quality affordable housing has been a critical challenge for this group.

Low-income housing supply—in the range of ₹3-10 lakhs (US$6,600-22,000)—is now rapidly increasing, but access to affordable mortgages for low-income customers remains a critical bottleneck. Historically, the vast majority of housing finance activity has focused on the middle and high income segments of the formal market, as low-income and especially informal sector households are deemed both high risk and too expensive to serve. Additionally, they lack the necessary documentation (bank statements, income tax returns and payslips) upon which high-street housing finance companies and banks rely. As a Chairman and Managing Director (CMD) of a large Indian bank said, "my staff can only interact with paper, not people—how can I serve this segment?"

This financial exclusion results not only in a glaring gap in social equity, but also in a missed commercial opportunity: the market for mortgages relating to ₹3-10 lakh houses comprises more than 20 million households and is an enormous ₹825,000 crore (US$182 billion).

Nevertheless, there has been some recent progress: market players are acknowledging that a **fundamentally different business model** is needed to serve lower income, informal sector customers. New companies such as Micro Housing Finance Company (MHFC), MAS Financial Services, and the pioneer "small ticket" HFCs like Dewan and Gruh are among those addressing the market gap. They recognize that these customers are not "high-risk" as perceived by conventional HFCs, but "unknown risk". To assess this "unknown risk", they rely on detailed, field-based verification rather than on formal financial documentation. Last year, however, the companies mentioned above only disbursed a few thousand loans to this customer segment, leaving a huge unserved market. Thus there is an urgent need for more entrants and for existing players to offer small ticket housing finance, or "micromortgages", to low-income households.

Monitor Inclusive Markets has conducted extensive primary research to understand how feasible and profitable a tailored Indian micromortgages company could be. Our indicative model suggests that it would be very viable: a new HFC focused purely on low-income, informal sector customers could break even within three years and achieve an RoA of around 3% and an RoE of more than 20% in the long term.

Our analysis also reveals certain key challenges for a new entrant wishing to provide micromortgages. The most critical are the need to build a robust credit-assessment framework and implement a cost-effective and flexible collection platform.

The micromortgage market naturally evokes a comparison with 'traditional' microfinance activities. Microfinance in India, as elsewhere in the world, has attracted great interest due to its potential to channel credit to the 'unbanked' population - profitably and at scale.

However, micromortgages have the additional advantage of being secured loans and are of a much higher ticket size. Lower per-rupee transaction costs and lower financial risk mean that commercial micromortgage companies can offer loans at a much more affordable rate: 12-14% as opposed to 18-36% for most MFIs. Given that micromortgages are in great demand, are collateralized, relatively affordable and have a positive regulatory environment, we believe the prospective impact on the Bottom of the Pyramid population could be even greater than that of microcredit.

INTRODUCTION: WHO ARE MICROMORTGAGES FOR?

Ganesh is in his mid-thirties, working as a self-employed mechanic in Mumbai. He has a monthly household income of ₹11,000 (US$242), which sometimes varies from month to month. He is married with two children, and the four members of his household live in a 150 square feet space in a slum with shared toilets, bad drainage and frequent water logging during monsoons. Over 20% of his monthly income is spent on a rent payment of ₹2,400 (US$53), following significant and frequent rent increases that have forced him to move house five times in the past 12 years.

Like many Mumbaikars, Ganesh has a strong wish to provide a better quality of life for his family, especially his children. He has enrolled both his children in private, English-medium schools in Mumbai. He has worked hard to amass savings in a bank account and insurance policies — the latter worth ₹1.5 lakhs (US$3,300).

Ganesh's life is typical of the slum dwellers of Mumbai and other large Indian cities. He and his family lack access to quality, affordable housing that could serve as a foundation to fundamentally transform the quality of their life.

Figure 1: Representative Micromortgage Customers

Profile: **Nathubhai**

- Steady job as a factory worker in a textile enterprise in Ahmedabad
- Monthly Household income ~ ₹ 8,000, savings up to ₹ 900-1,000 p.m.
- Lives in 1 RmK in low income neighborhood, rent ₹ 1,800
- Family size: 5 (mother, wife, 2 children)
- Assets: bank account, LIC (₹ 3Lakhs), TV
- Education: both children attend private Gujarati medium schools
- Rent: increased by 50% in past 3 years, has moved every 2-3 years

Profile: **Ganesh**

- Self-employed mechanic in Mumbai
- Monthly Household income ~ ₹ 11,000, savings up to ₹ 1,000 p.m.
- Lives in 150 sq. ft. room in slums, rent ₹ 2,400
- Married with 2 children
- Assets: bank account, LIC (₹ 1.5Lakhs), refrigerator and PC
- Education: both children attend English medium school
- Rent: has seen significant and frequent increases, has moved house 5 times in 12 years

- Live in poorly constructed, small, cramped houses
- Poor sanitary conditions: shared toilets, bad drainage, water logging during monsoons
- Lack of facilities: properly planned access points, walkways, gardens, schools, etc.

In a 2006 study, Monitor identified over 20 million households like Ganesh's in urban India who earn ₹7,500-25,000 (US$166-550)[1] per month and could benefit from low-income housing. The study showed that households in this segment were overwhelmingly keen to buy and own such quality (albeit small) homes in the far suburbs and could afford to do so at market prices if supply was available. They were comfortable with taking on mortgage loans, but found few players who would service them.

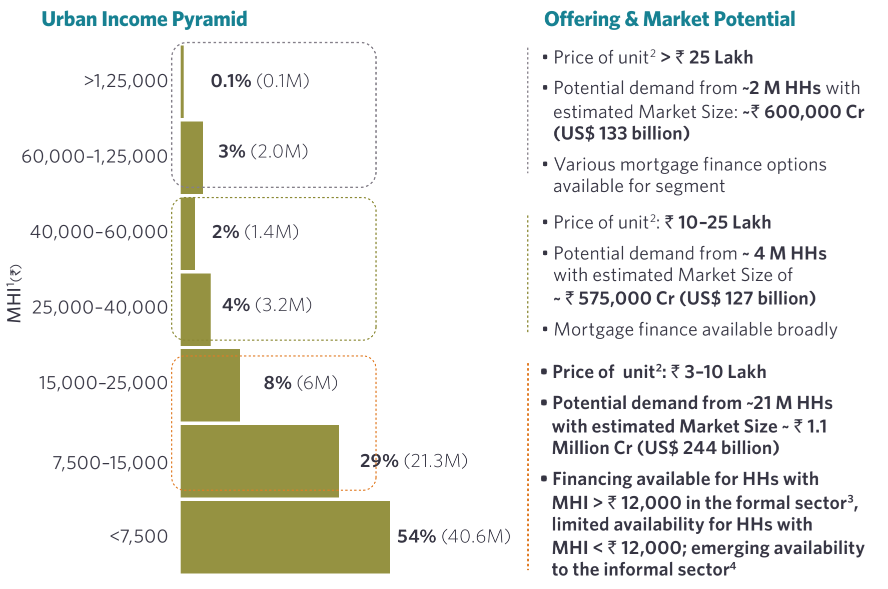
Monitor tested whether their aspirations were backed by an ability to make the mortgage payments. Reassuringly the study found that these households often had the ability to make initial down payments and regular monthly payments. However, the lack of housing supply and mortgage availability—especially for the "informal"[2] sector—remained key barriers for these customers.

THE OPPORTUNITY: INCREASING SUPPLY OF HOUSING BUT A LACK OF CUSTOMER FINANCING

THE LOW-INCOME HOUSING MARKET

A typical household in India can avail a mortgage that is forty times its monthly income. As the graph below shows, with mortgage financing in urban India geared primarily towards higher income groups, home ownership in urban India has largely been restricted to the upper 15% of the urban households. This has resulted in a huge pent-up demand for housing amongst lower-income urban households[3]. Households in this income group can afford to buy apartments of ₹3-10 lakhs—a market that, according to our research, is worth almost ₹1,100,000 crores (US$242 billion) today and is growing fast.

Figure 2



Note: [1]Monthly Household Income; [2]Affordable to that income group where EMI on the loan availed (assumed at 80% of the price of the unit) is 40% the household's monthly income. [3]Formal sector refers to salaried employees who receive a pay slip; [4]Informal sector refers to self employed and salaried workers who do not get an official pay slip

Source: NHB Trends in Housing; CRIS Infac Report; NRS Data 2005, Monitor Research, Monitor Analysis

1 At 2010 prices, ₹5,000-16,500 at 2005 prices

2 "Informal sector" denotes individual employees or enterprises whose financial activities are not regulated under any legal provision or that do not maintain regular accounts (and therefore have no payslips or income tax returns). Over 80% of urban lower-income households are in the informal sector.

3 Lower income households is defined as those earning between ₹7,500–25,000 (US$165-550)

However, in a recent study, **"Building Houses, Financing Homes"** Monitor found that a number of developers are starting to address this low-income market by building good quality, multi-family units in the ₹3 to 7 lakh range (US$6,600-15,400)[4]. These homes are of smaller unit sizes (starting at 250-300 square feet[5]) than those historically available, in order to be affordable to this income group. They are also connected to good social infrastructure and often have access to good schools, hospitals and markets.

In the current fiscal year (April 2010 - March 2011), 25,000-50,000 houses in that price range are expected to come onto the market. We believe this increase represents a fundamental shift in the low-income housing supply curve and expect exponential growth in the market in the coming years. The continued evolution of the market is likely to see a supply curve shaped by the geographic expansion of scale players and subsequent deepening by local developers.

This shift in supply has partly been driven by the macro-economic recession, which has led to some traditionally up-market developers down-switching their target customers and starting to seriously consider the provision of low-income housing. However, credit is also due to the efforts of dedicated "market-makers" and "field-builders", (including NHB[6], World Bank, IFC, Michael and Susan Dell Foundation) who have demonstrated the value of and the opportunity in the urban low-income housing market through encouraging pilots. Many of these activities have been actively facilitated by Monitor Inclusive Markets over the last four years, through working in close quarters with various players in the low-income housing ecosystem.

Low-income housing developers are a mix of small developers and larger, more established developers as well as some corporate players. Smaller players have proved the commercial viability of building low-income housing projects, through early efforts in cities such as Mumbai and Ahmedabad. However, larger players and corporates are entering the space with rapid growth plans in mind. They differ from the smaller developer in that they see the market as a large scale "manufacturing" opportunity, and are conducting sizable initial projects to confirm the feasibility of their plans before scaling up.

For example, VBHC[7] has already announced plans to build a million homes priced below ₹10 lakhs in the next decade, and Neptune (an erstwhile premium builder) says it intends to expand from Mumbai to other cities in Maharashtra with its "Swarajya" brand, before expanding nationally.

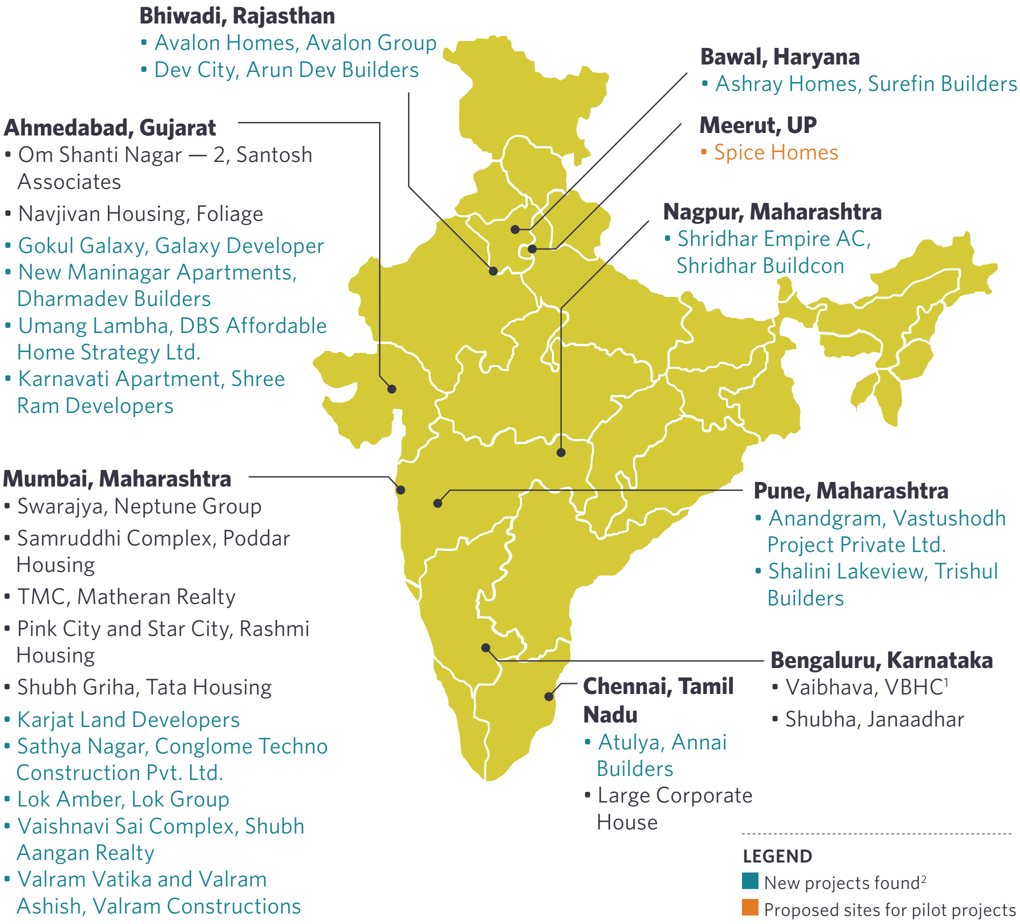
4 These prices represent the cheapest apartments in a project since a project may have multiple formats and sizes available. Please note that these findings represent the findings of the Monitor team, which are meant to provide indicative and directional guidance as to the state of the market and the housing supply curve. They do not purport to be an exhaustive listing of all urban, low-income housing supply in this price range.

5 Saleable area

6 National Housing Bank

7 Value Budget Housing Corporation

Figure 3: Current Low-Income Housing Supply Between ₹3-7 Lakhs (US$ 6,660-15,400)



Note: The list provided is not an exhaustive list. It is an indicative list based on our research of the market. We spoke to over 25 developers who are in the process of making LIH supply available for less than ₹ 7 lakhs.
[1] The lowest priced apartment in the Bengaluru project is ₹ 8.8 lakhs — it is included in this map because of the scale at which VBHC plans to build LIH — 1 million units in urban India in the price range ₹ 5 to 10 lakhs over 10 years;
[2] New projects found indicates that we found these projects as part of our scan for low income housing during the project research, which started in January 2010. SAS Group also has plans to enter the LIH space and is currently in the process of finalizing the pilot project sites

Source: Primary research and interviews of developers, housing finance companies and stakeholders; For a full list of sources used, please see Nodes & Sources and Filtering Long List of Developers for ₹ 3-7 Lakh Homes slides in the Appendix of the full report "Building Houses, Financing Homes", which is available in the public domain, and available for download at the NHB and Monitor websites.

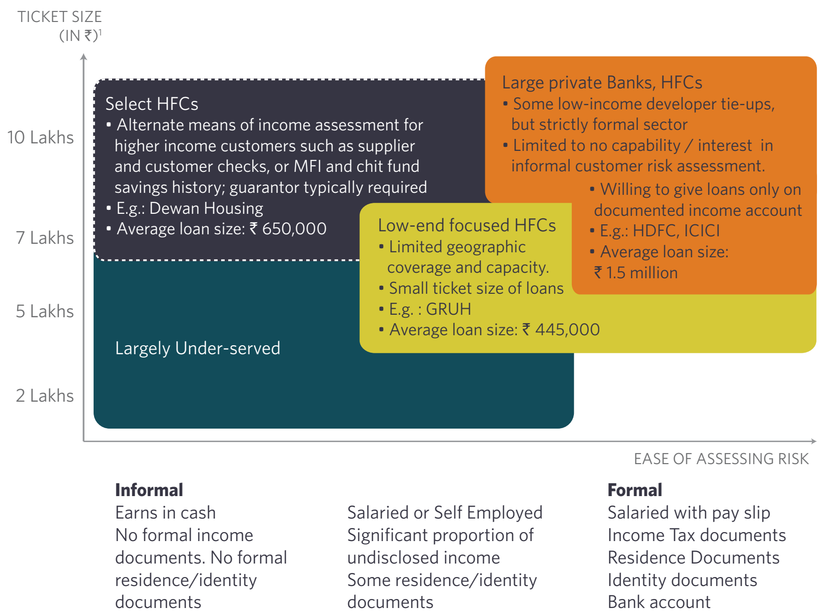
MICROMORTGAGES — AN EMERGING FIELD

Ironically, this traction in housing supply has served to emphasize the lack of access to affordable housing finance from which millions of lower income households suffer.

Historically, HFCs in India have been geared towards higher income customers. Two of the largest HFCs, for example, are the Housing Development Finance Corporation (HDFC), whose average ticket size for mortgages is ₹15 lakhs (US$33,000), and the Life Insurance Corporation of India (LIC) which disburses an average of ₹16 lakhs (US$35,200) to each customer. This is partly because it is more expensive to issue lots of small-ticket loans than a few larger ones—but processing fees tend to cover some of these costs, so this is not the main issue.

The real challenge with serving low-income customers is that a significant proportion (notably those classed as informal sector) lack conventional documentation of their incomes or assets, which are fundamental to every conventional HFC's loan application process. As a Chairman and Managing Director (CMD) of a large Indian bank said, "my staff can only interact with paper, not people—how can I serve this segment?"

Figure 4: Housing Finance Market Map



Note: [1]Indicative of the primary product offering (usually average ticket size), though other loan sizes and products may also be offered
Source: Primary research and interviews with housing finance companies and stakeholders; For a full list of sources used, please see Nodes & Sources slide in the Appendix of the full report "Building Houses, Financing Homes"; which is available in the public domain, and available for download at the NHB and Monitor websites

As the figure above shows, the vast majority of housing finance activity is focused on the middle and high-income segments of the formal sector market—leaving tens of millions of households in urban India unable to borrow money to buy a home. This is a glaring gap in terms of social equity, but is also a huge commercial opportunity: the market for mortgages for customers likely to buy ₹3-10 lakh (US$6,600-22,000) houses is an enormous ₹825,000 crore (US$182 billion). Companies such as MHFC, MAS Financial Services and established HFCs like Dewan and Gruh are among the few players addressing this gap, but last year they only disbursed a few thousand loans to this segment, leaving a huge unserved population.

Although there are challenges in strategy and execution to be overcome, mortgage financing for low-income customers is a commercially viable opportunity. With increasing momentum in low-income housing supply, there is an urgent need for more entrants or for existing HFCs to expand into this segment and offer small ticket housing finance—**"micromortgages"**—to the lower income households.

PLUGGING THE FINANCING GAP

The traditional mortgage-lending model serves an urban income group with well-understood risk and behavioral profiles. When dealing with low-income formal[8] sector customers, conventional processes could be adapted with a few tweaks. Credit appraisal and collection mechanisms will not be significantly different from existing approaches: the process will continue to rely on standard documents such as pay slips, income tax returns and bank account records.

However, for the informal salaried and self-employed segments (which make up more than 80% of the market), the business model requires fundamental innovations. There is no proven credit assessment framework for these segments and the transaction costs of interaction are higher. These costs arise from a significantly lower average ticket size and also from the more intensive field-work required in order to accurately document each household's income and expenditure profile [see **"A Day in The Life of A Credit Officer"** later in this paper]. Thus, the key question that emerges is:

How can a commercial HFC focused on serving low-income, informal customers accurately assess credit risk and offer affordable 'micromortgages'?

8 Formal implies employment in a medium to large scale organization with a formal payslip, preferably a provident fund (PF) account, income tax documents, some form of residence proof and/or a bank account

DEFINING THE BUSINESS MODEL: A SAMPLE COMPANY — INDIAN MICROMORTGAGES INC.

Given that few players target low-income, informal sector customers, there is no 'established' business model for dealing with this segment. Nevertheless, broad guidelines have been put in place by current micromortgage companies. Monitor has built upon these to model an indicative HFC[9] focused on the urban informal micromortgages segment, based on real cost data at branch and organizational level operations — let's call it *Indian Micromortgages Inc (IMI)*.

"People pay rent month after month without defaulting, so they will pay for home loans. Down payment is similar to deposit in case of rented house."

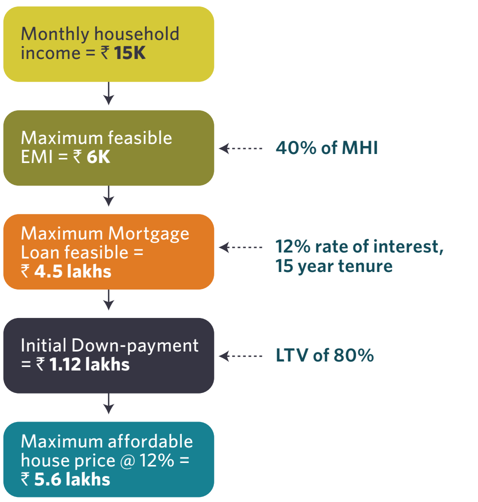
INFORMAL MONEY LENDER, MUMBAI

OVERVIEW

We have assumed that *Indian Micromortgages Inc (IMI)* will focus on urban informal households across Tier 1, 2 and 3 cities[10], with monthly incomes between ₹7,500-25,000(US$166-550). *IMI* is a start-up and will build the requisite skills and core elements of its operating model (sales expertise, branch infrastructure, technical backbone, etc) over a period of time[11]. The economic model built by Monitor predicts the growth of *IMI* over a period of 10 years.

PRODUCT AND PRICING

Figure 5: Mapping MHI[1] to House Price Affordability



Note: [1] Monthly household income

Given the currently evolving low-income housing supply in urban areas, *IMI*'s primary[12] product offering will be a micromortgage product that covers under-construction or new home purchases. It will be a standard mortgage with an average ticket size of ₹4 lakhs (US$8,800)[13] and a tenure of 15 years. However, institutions such as Dewan and Gruh that have served low-income customers have observed that many households choose to repay their loans early. Consequently, it is assumed that the majority of *IMI*'s customers will repay their loan in an average of 8 years.

9 While only one amongst many possible approaches, it provides a frame of reference in which to place and evaluate variations to, or even fundamental innovations in, the micromortgage business model

10 Common classification for cities: Tier 1 = >4 million population; Tier 2 = 1-4 million population; Tier 3 <=1 million

11 This path to growth differs from that of a low-income focused HFC created by an incumbent financial institution; such an HFC might be able to leverage its parent's branch and technical infrastructure, existing capabilities in fund-raising and management expertise in running a financial services operation at scale. All these could cumulatively shorten the time to scale for such an HFC.

12 Other products that could be introduced at later date include the renovation/upgradation of existing houses, purchase of land, etc

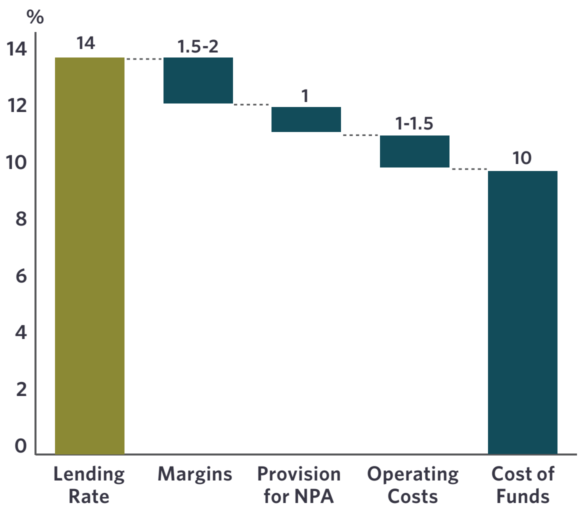
13 Assuming cost of home to vary from approximately ₹3-6 lakhs (US$6,600-13,200) when bought

HFCs serving this income group generally operate with a loan-to-value ratio (LTV) of 60-80%. *IMI* will expect the household to contribute a minimum of 20% of the purchase price of the home as down-payment. These down-payments are usually made with financial support from close relatives (which is interest-free), liquidation of alternative assets such as land in an ancestral village or family jewellery, and the household's own savings.

While urban, low-income households might meet the initial down payment, will they be able to make the regular EMI payments? Most of these households currently pay 20-25% of their income as rent. Monitor's research in this segment shows that families are able and willing to pay an extra 10-12% over their rent to meet their EMI payments—as ownership gives them an opportunity to improve their quality of life and build asset ownership. Thus, an income-to-installment ratio (ratio of EMI payments to monthly household income) of 30-40% is considered feasible, but will have to be assessed on a customer-by-customer basis.

Assuming that *IMI* will borrow wholesale funds at between 8-10%[14], customer interest rates would need to be between 12-14% for the company to be profitable (see figure below). This would include the cost of credit assessment of informal customers and a strictly conservative approach towards non-performing assets (NPAs). The **"Operating Model"** section below gives further details on income assessment and the **"Transaction Economics"** section covers per-loan costs.

Figure 6: Lending Rate And Pricing Structure[15]



14 This is a range based on current industry standards in India; this may change based on inflation rates and the term of the loan

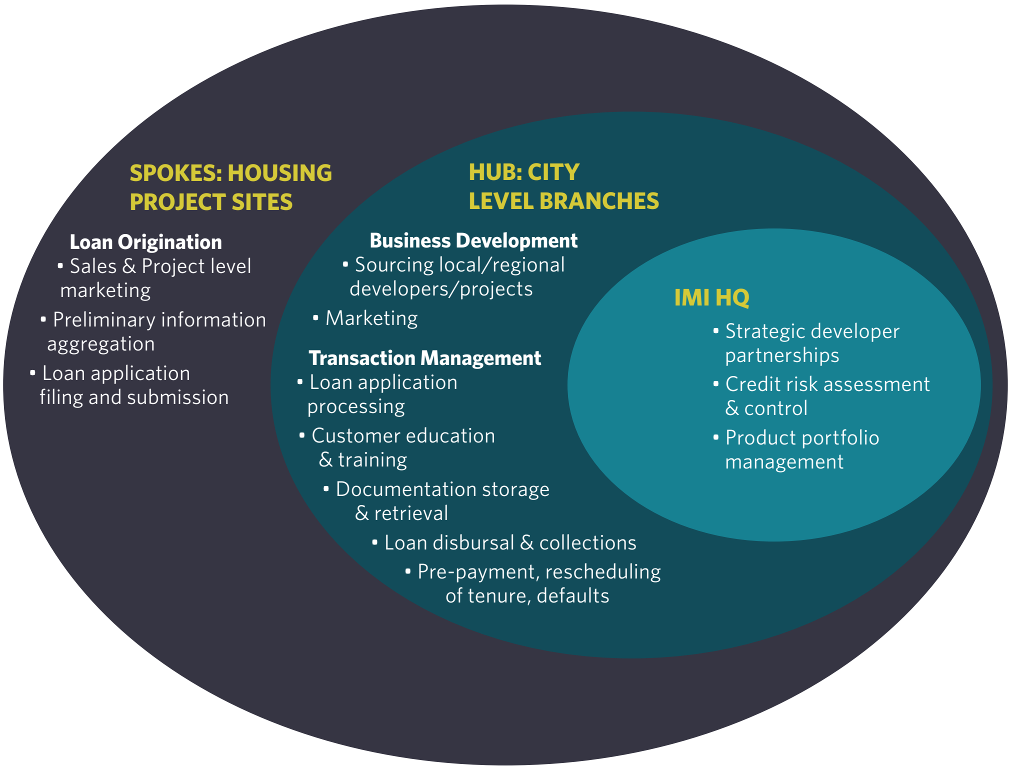
15 These estimates are based on industry benchmarks, and are broken down in more detail in the "Transaction Economics" section later in this paper

OPERATING MODEL

For traditional mortgage companies, branches remain a key means of sourcing customers. In contrast, due to the emerging nature of low-income housing projects in most urban areas and the high fixed costs associated with setting up branches, one of the most cost-effective approaches for a micromortgage HFC would be to directly source customers from project sites through tie-ups with developers. A "hub and spoke" network of branches could be used to achieve this.

Each spoke would cover one or more project sites at a time to source customers and manage the post-sales process. These spokes could even be temporary, moving from project to project as new developments are built. Meanwhile, hub branches could do more in-depth activities such as customer risk assessment, documentation storage and follow up activities in case of default or other irregularities. The HQ could handle loan sanctions and portfolio management, as well other commonly centralized functions such as HR and training.

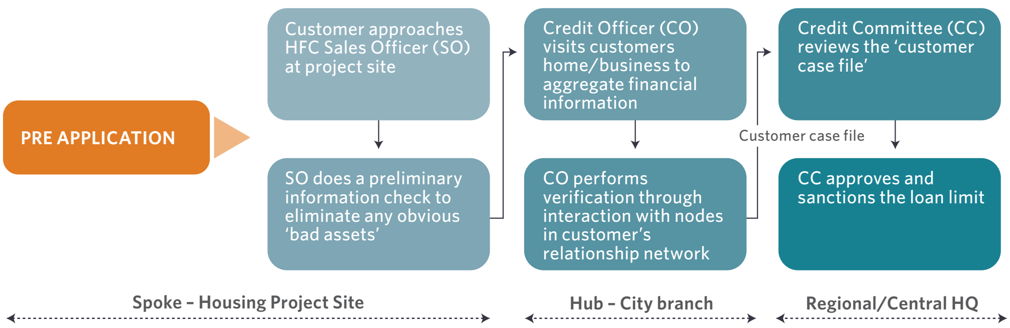
Figure 7: Suggested Operational Structure



During the initial years volumes are likely to be low, but will grow more rapidly in later years. Consequently, the HFC will adopt a conservative approach towards capital investments at first. In an HFC, the branch network absorbs a significant amount of capital expenditure. Thus *IMI* will need to minimize unused branch capacity during the initial stages. This will be achieved through tightly pacing the growth of its branches with that of low-income housing supply. In our model, *IMI* will start with one branch (with a minimum capacity of 750 loans per annum) per urban city. It increases its branch density progressively as it scales and builds a critical customer-base.

The fundamental challenge for *IMI* will be customer assessment. The lack of adequate financial documentation possessed by informal households will require *IMI* to collect and assess information on the household's income and expenditure patterns in order to gauge their ability to make monthly mortgage payments. The credit assessment system is designed to provide multiple checks and balances and is achieved through participation of entities across *IMI*'s operating structure.

Figure 8: Customer Risk Assessment Process For Informal Sector Customers



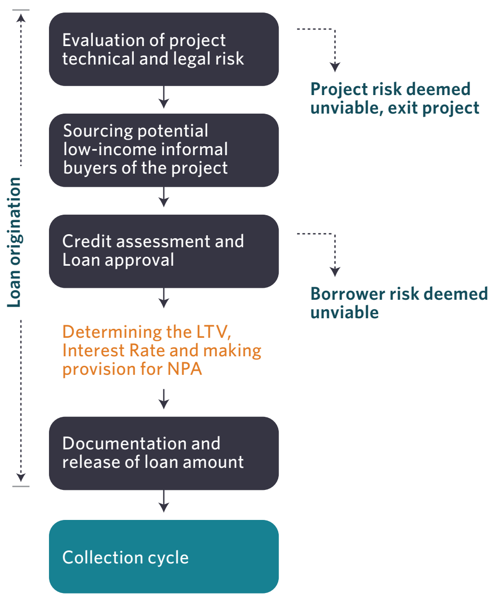
For credit assessment of informal sector customers, the verification and field investigation elements are intensive processes. This could mean that credit assessment officers visit a customer's home, assess his income and its stability and validate what they have been told about the customer with key nodes in the customer's relationship network—such as neighbours, employers or suppliers if the customer is self-employed. As an example of how one HFC—Micro Housing Finance Company—does this, see the attached excerpt, **"A Day in The Life of A Credit Officer."**

It is important to note that this whole process helps document and quantify facts about the customer that were previously unconfirmed. The risk associated with informal sector customers has not decreased due to the storyboarding and verification—it has simply been better understood. Low-income, informal sector customers are often considered "high risk" by conventional HFCs, but in reality they are often simply "unknown risk". Companies like MHFC, MAS, Dewan and Gruh have taken the time to understand these customers, and in doing so have come to believe that they can be reliable repayers. Not all low-income customers will be able to meet EMI repayments, however, and the verification process above helps weed out potential 'bad assets'.

Documenting informal customers' incomes and financial status systematically takes time and effort, but loan officers can be trained to do this and the costs can be recouped via processing fees. There can be greater risks associated with certain low-income customers (e.g., if a customer has very small savings, she may be more likely to default on mortgage EMIs in the case of a medical emergency), but the loan is secured against the house, after all, and the "extra" risk can be accounted for through appropriate interest rates.

TRANSACTION ECONOMICS

Figure 9: Transaction for Mortgage Product for Purchase of New/Under Construction Home



IMI's origination process is not dissimilar from that of a conventional HFC offering loans for under-construction or new homes.

As a first step, *IMI* will perform a legal evaluation of the housing project that it is considering for financing, to ensure that necessary regulatory approvals are in place and that the project will be completed as planned (or with minimal delays). *IMI* will release the loan payments on behalf of its customers directly to the developer, mostly in tranches linked to the project development status. This finances the developer's working capital needs.

From a customer's perspective, *IMI* will charge a pre-EMI payment[16]. Thus, *IMI* will need to understand the duration for which the customer will need to shoulder the burden of pre-EMI payments. This is important, because the customer is bearing the dual burden of rent as well as pre-EMI payments, which is especially acute during the later stages of the project. Every month of delay in construction will prolong this burden for the household.

16 EMI = Equated Monthly Installment; pre-EMI = Interest on the outstanding principal released to the developer

A DAY IN THE LIFE OF A CREDIT OFFICER

It's a hot Saturday morning in Ahmedabad — the last before the monsoons start — but Leeladhar Bhatt Hall in Behrampura is packed with visitors. They have gathered here to attend a two-day customer evaluation session by the Micro Housing Finance Company (MHFC). MHFC has tied up with DBS, a builder in Ahmedabad who is building apartments on the outskirts of the city for as little as ₹3.2 lakhs, to provide mortgages to their prospective customers. These customers, however, are far from typical applicants for housing finance.

Rameshbhai, MHFC's first customer of the day, is an autorickshaw driver. He earns between ₹8,000-9,000 a month, but he has no proof of this income. He has no income tax returns and naturally does not issue himself salary slips. He does not keep any accounts of his income or expenditure, but he does have a bank account, which he rarely uses. He has no proof of his current address. He has about ₹70,000 of savings and is applying for a loan of ₹2.5 lakhs. Most housing finance companies would send him back to the street before you could say "non-performing asset".

Ashish Kothari, the loan officer who is serving Rameshbhai, begins the process of assessing his application. The first step is to "storyboard" Rameshbhai's life. Ashish asks him questions about his family, living situation, his income, previous loans and his assets. The questions are well structured and go into a lot of detail — and all the time Ashish is making copious notes, in a very open and qualitative form designed for this purpose. While the output of this process is always the same — understanding the customer's ability to pay the requisite EMI — the process itself must be tailored to each applicant. Having said that, Ashish has interviewed many autorickshaw drivers before, and asks all the right questions: how long are your fares, on average? Do you work at night? Do you own your autorickshaw or do you rent it?

More important than gathering this information, however, is verifying it. Unlike most HFC loan officers, who rarely leave their branches, Ashish will spend a full day on the street ensuring that the data Rameshbhai has given him is correct. He will visit Rameshbhai's house, speak to his family and check the condition of his autorickshaw. He will go to the road junction where Rameshbhai usually keeps his auto parked and talk to his fellow auto-wallahs, to understand whether the average income of those drivers is in the same ballpark. He will call up the three references that Rameshbhai has given him, including the autorickshaw garage where he has his vehicle repaired (to check whether Rameshbhai pays on time). These are just some of the elements of Ashish's verification, which could involve any number of measures to test that the storyboard that he constructed on first meeting Rameshbhai is accurate. Ashish has similar but distinct procedures to assess customers involved in trade (such as kirana stores), the service industry (such as tailors) and informal sector jobs (such as drivers).

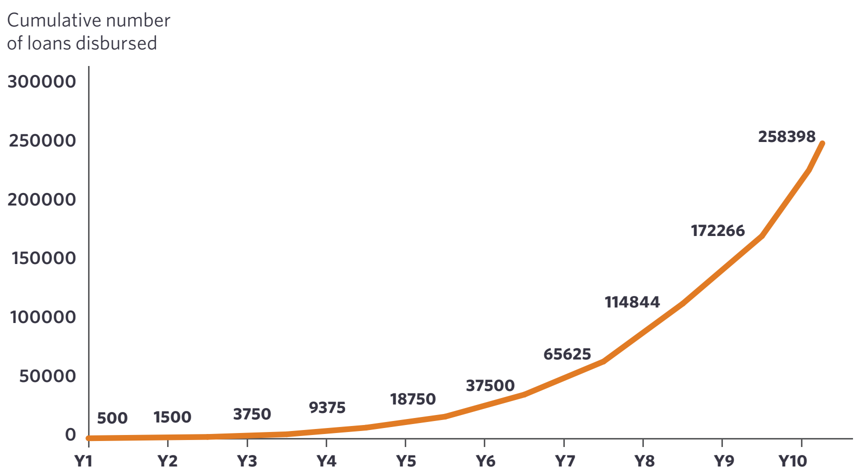
Following the project risk evaluation, *IMI* is in a position to provide loans to buyers of the particular project. As described earlier[17], for any such potential target applicant, a credit assessment officer would perform an assessment to measure the credit risk the borrower represents. This is evaluated and approved by a regional or HQ team. If the credit risk of the borrower is deemed sufficiently low, the team fixes the maximum loan-to-value ratio and interest rate to be charged.

Next, the HFC completes customer and loan-related documentation. With all papers in place the HFC will release the designated loan amount. A large fraction of the transaction costs go towards this initial legal evaluation and credit assessment process. In addition, there will be a sales incentive associated with each loan origination. For *IMI*, this incentive will be linked to volume of loan origination (rather than size of loans) and will comprise of 0.5% of the loan amount—distributed across the operational hierarchy of the branch or region.

There is considerable 'innovation head-room' available to HFCs like *IMI* to enable it to streamline costs over time. *IMI* will build a captive knowledge base on customer behavior, which will enable it to streamline its information needs and build greater 'intelligence' into the process. Usage of hand-held devices by field agents in sales, credit and collection could potentially eliminate a lot of intermediate paper work and reduce processing time. Further, technology can enable the centralization of a lot of back-office activities. With increased volumes over time these innovation efforts will be complemented by scale efficiencies.

THE GROWTH PATH

Figure 10



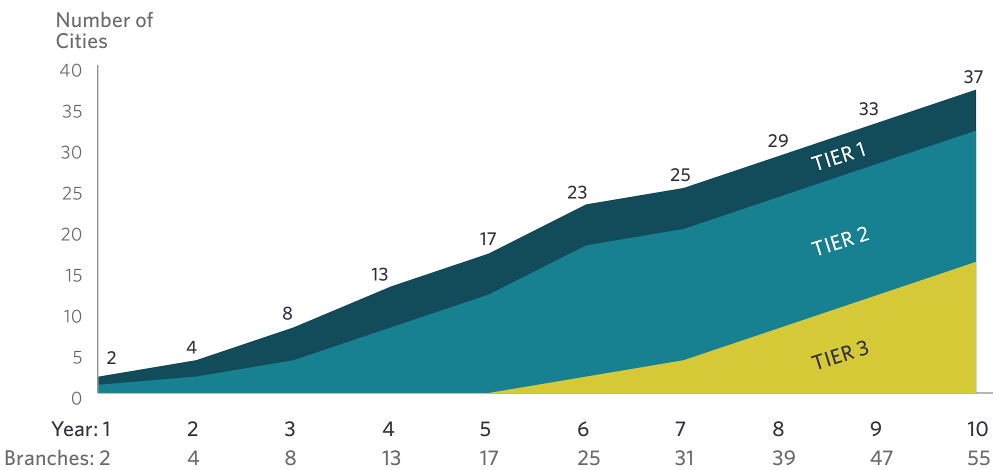
17 See section on 'Operating Model'

The pace at which *IMI*'s overall loan portfolio grows will be influenced by two factors. The first will be *IMI*'s ability to scale up its operational capacity (including an effective credit assessment framework and collection process) in an efficient manner.

Secondly, and importantly, will be *IMI*'s ability to raise long-term debt[18] at competitive rates. For the first two years, *IMI* will rely solely on equity funding. In its first year of operation, with a start-up capital of approximately ₹30 crores (US$6.6 million), it can disburse 500 loans[19]. It increases its leverage to 4X by the fifth year and to 6X by year 8. This leverage ratio is conservative compared to most HFCs — including those serving the lower income groups — that typically have a leverage ratio in the range of 10X.[20]

How does this intended growth translate to *IMI*'s operating footprint?

Figure 11: Expansion Of Operating Footprint



The initial operations are focused in select Tier 1 and 2 cities. Subsequently, they extend deeper into Tier 2 and Tier 3 cities covering 37 urban cities by year 10. The branch network grows along with the geographic footprint — cautiously at first, with one branch per urban centre, but taking off once its customer base and supply of low-income housing reaches a critical mass[21].

18 For an overview of potential financing sources refer to section "Our Key Recommendations to New Entrants in Micromortgage market"

19 Assuming that the average ticket size is ₹4 lakhs (US$8,800) and capital provisioning is 16%. NHB requires a minimal capital provisioning of 12%. But, typically, most HFCs maintain a provisioning of 16%.

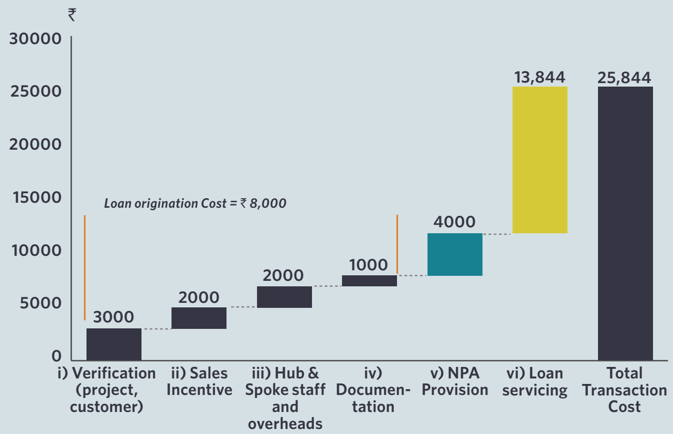
20 As per NHB mandates, the maximum leverage permissible for an HFC is 16X

21 Evidently, there are alternative growth patterns possible — with varying combinations of rate of growth and mix of cities. For an established financial institution entering the low-income mortgage business, its existing operating footprint and fund-raising abilities could result in a much quicker path to scale.

ILLUSTRATIVE MICRMORTGAGE TRANSACTION ECONOMICS

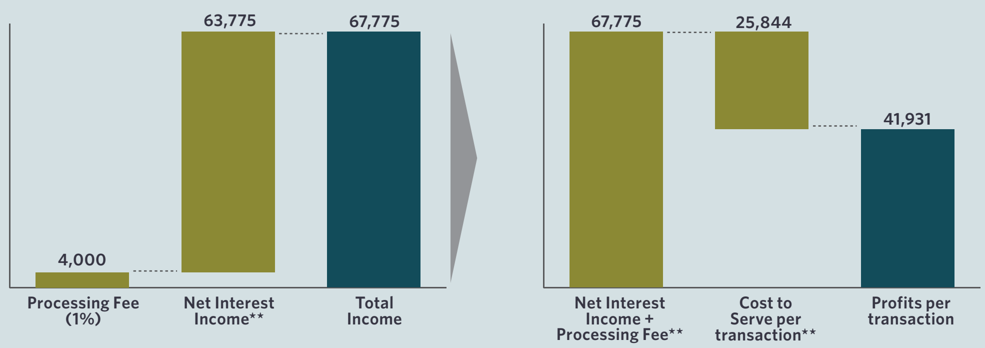
We have modeled *IMI*'s costs on a steady state basis. Figure 12 shows the transaction cost structure for a loan with a ticket size of ₹4 lakhs (US$8,800) and interest rate of 14%[1] assuming that *IMI* is able to borrow at 10%. These costs are typical for HFCs operating at reasonable (but not large) scale — e.g., more than 50,000 cumulative borrowers.

Figure 12: Transaction Cost Structure



The total transaction costs amounts to ₹25,844 (US$569)[2] — 7% of the loan value. Upfront origination costs account for 31% of the transaction costs (₹8,000 (US$176)) including a sales incentive of 0.5% of loan value, while recurring loan servicing cost (primary collections over the tenure of the loan, i.e. 8 years) accounts for 54% of the total costs. For the transaction modeled above, *IMI* will earn a net interest income of ₹63,775 (US$1,404). Including an upfront processing fee of ₹4,000 (US$88) towards various statutory/legal charges, it would earn a net income of ₹67,775 (US$1,936) over the loan tenure. Significantly, then, for its primary product offering, the HFC is able to achieve healthy profitability on a per transaction basis.

Figure 13: Per Transaction Profits



*** Discounted to present value*

1 This rate is reflective of present (2009-10) interest rate environment in India

2 All figures are on a discounted basis; rate of discount at 10%

PERFORMANCE SUMMARY

As illustrated below, *IMI* becomes profitable in its third year of operation. The performance of the modeled HFC compares very favourably to India's leading HFCs. A return on equity (RoE) of over 20% is considered very robust by Indian financial industry standards.

Monitor also modeled various scenarios in which things turn out a little differently than in the above scenario. Profitability is most sensitive to branch utilization (building branches without having a large enough customer base is a sure way to reduce profits), while an increase in default rates has a relatively modest impact on the HFC's performance.

Figure 14: Expected Profitability Curve

OUR KEY RECOMMENDATIONS FOR NEW ENTRANTS TO THE MICROMORTGAGE MARKET

Indian Micromortgages Inc's estimated financials above highlight that it is possible to build a commercially viable mortgage finance business to service the low-income informal customer base. However, Monitor's research and economic model also revealed certain challenges for new entrants to the market. These challenges — and recommendations to address them — are laid out below.

'Follow the supply' to align with the growing low-income housing market. As discussed, the supply of low-income housing is growing rapidly and is poised at an inflection point. As a result, an incipient HFC should initially 'follow the supply' and grow symbiotically with low-income housing projects and developers. There are several ways to incorporate this consideration within the design of its operating model. One approach, used by *IMI*, is to have few permanent branches and instead have mobile spokes that attach themselves to and follow specific housing projects.

Poorly understood credit behavior requires empirical learning. Lack of seasoned customer data makes credit appraisal a formidable challenge. An income-only assessment doesn't suffice. The credit team needs to reconstruct, through personal interactions, the household's income, free cashflow, and it's overall financial position (including current liabilities). This involves 'field-based' interactions with nodes in the household's immediate network (employers, suppliers, relatives, etc) to capture and verify surrogates for formal documentation. This can also help unearth any concurrent loans and 'hidden' expenditures.

One of the key drivers of scale is an HFC's capacity to control defaults. In order to do this, an HFC needs to effectively aggregate and analyze customer information. An important step in this direction would be to set up a process to capture data on households that have been granted loans, those that have had applications rejected and a wider sampling of households in the target customer base. The resultant income/expenditure patterns revealed by this databank can feed into and develop a more robust analytic framework. A key outcome of this will be to help the HFC develop empirically tested filters for application rejection, resulting in a cost-efficient, 'lighter touch' credit appraisal process.

Build flexibility into the collection process. An HFC targeting low-income customers has to be particularly sensitive to distinguishing between intentional and accidental defaults. Other financial institutions targeting this group—such as MFIs and certain Non Banking Financial Companies (NBFCs) — offer useful insights here. Reinforcing self-discipline with regard to payment is important. This reinforcement could be via an SMS sent a few days before the payment is due, or—in cases that are deemed riskier—through the collection officer calling the borrower to remind him of the upcoming repayment.

HFCs may also need to be flexible with respect to unavoidable delays in payments given that low-income customers often have variable income flows. For example, a microfinance institution in Ahmedabad, which recently introduced housing loans, makes monthly cash collections, but in case there is a delay on the part of a household, a degree of flexibility is allowed to the collection agent to collect the payment at a later date. This flexibility combined with payment monitoring, especially during the initial period, not only ensures self-discipline but also gives the HFC an opportunity to thoroughly understand payment deviations and default risk.

For many borrowers employed in the informal sector or who are self-employed, income is received in cash. Depending on the degree of usage of conventional banking products (for example, savings accounts), the borrower might prefer to pay in cash rather than cheque or electronic transfer. Accordingly, the collection process needs to be geared to manage frequent cash transactions. The HFC must have the physical infrastructure to manage collections, and is also exposed to the risk of fraud by collection agents handling large repayments.

There is rich scope for innovation here—particularly technological. For instance, in the collection process cited above, the field agent can be equipped with a hand-held device to record and directly transmit data to the relevant processing entity. Customers can be given an electronic receipt in the form of an SMS informing them of receipt of their payment. Eventually significant efficiencies are likely to be driven by households migrating to being regular users of organized banking platforms (e.g. mobile), an existing conventional platform, or one tailored to this group. This will in turn activate several options to use other low-cost collection channels, such as mobile phone-based payments.

Build partnerships with other groups connected to the customer base and housing supply. The base of low-income, informal households is large and continues to grow, but is by no means a homogenous or well-connected pool. Fortunately, as highlighted earlier, there are already a variety of entities operating across this segment (urban MFIs and also NGOs/self-help groups) that can provide insights into and even direct links to this customer group. For example, MHFC links with Saath, an NGO in Ahmedabad, to help gain access to, filter and aggregate low-income customers requiring housing. On the supply side, HFCs have the opportunity to tie up with developers; this is often a mutually beneficial relationship as it encourages the quick sale of housing to the right customer group.

Access to low-cost, long-term funds is key. While equity is likely to form the basis of funding for a new HFC in the first few years, as it grows, it will need to tap into long-term sources of funding. Monitor's research shows that a significant proportion of lower-income customers[22] (around 60%) prefer fixed-interest rate mortgages, even if they are offered at a premium of 2-3%, citing financial planning and stability as the key reasons for their choice. This preference is even more pronounced amongst the customers in the lower tier[23] of this income group, who feel they may not be able to manage fluctuating EMI payments due to their already variable income. This means HFCs are likely to need access to longer-term and preferably fixed-rate debt.

Thus, in order to keep mortgage rates affordable, managing the cost of debt is critical[24]. Some of the most common sources of funding are term loans from banks and debentures. However, these may not be available at competitive rates of interest. In the interim, for an HFC that has been operational for more than 3 years[25] an NHB refinance line might be amongst the most viable sources of funds. It is a credit facility made available by NHB to various types of financial institutions that offer mortgage financing, including HFCs[26]. Insurance companies and pension funds that have access to long-term capital may also be ideal lenders for HFCs.

22 ₹7,500-25,000 (US$165-550)

23 ₹7,500-15,000 range (US$165-330)

24 For established players like Gruh and DHFL (over 20 years of presence), the cost of borrowing is 9-10% under the prevailing interest rate scenario.

25 In select cases, the NHB might be willing to extend financing to an HFC with less than 3 years of operations

26 The NHB conducts an internal assessment to establish the viability of the HFCs business and its performance and risk profile in the short to medium term. On the basis of this assessment, it will extend a credit line over a fixed time-frame and of a specified quantum and interest rate.

MICROMORTGAGES: THE NEXT MICROFINANCE?

The micromortgage market naturally evokes a comparison with 'traditional' microfinance activities. Microfinance in India, as elsewhere in the world, has attracted immense interest due to its potential to provide access to microcredit to the 'unbanked' population, profitably and at scale.

The micromortgage model certainly shares many themes with its microcredit counterpart. The target groups share similar attributes — informal, low-income households — although microcredit models have largely focused on rural populations to date, where average household incomes are correspondingly lower.

The business model pioneered by the Grameen Bank — of joint lending to rural women — was fundamentally different from mainstream banking. In the same way, micromortgage companies' risk assessment models will need to be fundamentally different from the trend. The scale of the opportunity is certainly large — the ticket size of the loans is roughly 40 times greater than that of microfinance loans — and micromortgage companies intend to take advantage of the huge, underserved, pent-up demand through commercially sustainable, for-profit institutions (just like large MFIs).

The beneficial impact of allowing people to buy their own homes is as high, if not higher, than that of providing small loans—for income generation as well as consumption purposes. Understandably, micromortgage companies are attracting significant interest, like MFIs, from both social and commercial investors keen to take advantage of the opportunities in this market.

Nevertheless, there are important differences between the two business models. Microfinance loans are inherently unsecured: indeed, the genius of the business model is that it relies on peer pressure to avoid defaults. Micromortgages, however, are secured loans, with the customer's house as collateral. This means that the customer — even without peer pressure — is very likely to repay his loan; the trauma and economic loss associated with losing a house is usually sufficient threat to ensure that mortgage payments become a priority. Additionally, the larger ticket size loans associated with mortgages mean that operating costs are a much lower percentage of the customer's debt, reducing interest rates considerably. Both these factors mean that micromortgage companies can offer loans at 12-14%, as opposed to 18-36% for most MFIs.

Beyond economics, the evolution of the micromortgage space could also differ from microfinance. The successful precedence of DHFL and Gruh, serving a similar customer profile, is likely to attract the interest of other financial institutions, especially large banks and NBFCs. A number of commercial MFIs have already shown interest and are developing models that tie in with their existing business. We are seeing "allied businesses" such as NBFCs aiming to cross-leverage their capabilities in financial services and customer bases — a prime example being Muthoot Pappachan Group (a pioneering gold loans company), which already has a large group of low-income households as existing customers. While the micromortgage business model discussed in this paper is certainly different from those currently used by large HFCs and banks, it is not as radically different from conventional financial models as the group lending approach of microfinance — and thus we expect to see some movement 'downmarket' from traditional mortgage players, in time.

Lastly, the regulatory environment for micromortgages is positive. Government schemes such as the Rajiv Awas Yojana offer subsidies on small ticket housing loans, while the NHB is consistently trying to facilitate housing finance companies' attempts to serve low-income customers. Meanwhile, the SARFAESI Act of 2002 ensures that housing finance companies can recover housing assets from customers in the case of default — which substantially reduces the risk of write-offs.

Given that micromortgages are in great demand, collateralized, affordable and commercially sustainable, Monitor believes that the market has extremely high potential. Indeed, we believe the impact on low-income households could be even greater than that of microcredit, possibly with an even faster track to scale. The business model we have outlined in this paper captures the many innovations emerging from the key micromortgage players. There also remain many challenges that need to be addressed: specifically around credit assessment, transaction costs and access to long-term debt. In the long run, HFCs that develop the most cost effective, robust and scalable models will become the leaders in this large and fast growing market.

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