



Micro-finance of housing: a key to housing the low or moderate-income majority?

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SUMMARY: *This paper considers why most households in Latin America and the Caribbean remain unserved by traditional housing finance systems and how micro-finance potentially offers a key to help the low/moderate-income majority meet their shelter needs. The characteristics of micro-finance include small loan size for incremental upgrading of an existing dwelling or a new core unit, short repayment period, small or no subsidy, creative underwriting adapted to the conditions and prospects faced by low/moderate-income, technical assistance in documentation and building, and - sometimes - alternate forms of title as collateral. The article presents the work of the Bolivian NGO PROA as a successful case of micro-finance and draws lessons about the possible expansion of micro-finance in Africa, Asia and Latin America.*

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1. Here, "traditional mortgage finance" means a long-term (10 to 30 years) loan at market interest rates extended by a formal sector financial institution - typically one specialized in housing such as a building society - that quali-

I. INTRODUCTION

TYPICALLY, THE GREAT bulk of home finance in Africa, Asia, and Latin America and the Caribbean comes from outside commercial financial institutions. Households use their own savings, sweat equity, barter arrangements and other sources to build their homes over five to 15 years. In turn, traditional mortgage finance in these regions faces three basic dilemmas.⁽¹⁾

First, low-income and most moderate-income households usually cannot afford the debt service required to finance the cost of a core minimum unit, even under the best of circumstances. These positive conditions include a stable macro-economic and financial context in which the level and volatility of inflation has sharply declined,⁽²⁾ and functioning urban land markets in which land prices bear a relationship to effective demand for real estate.

The first two data columns in Table 1 present affordability calculations for two countries that enjoy such favourable circumstances. One is a low-income country (Bolivia) and one a middle-income country (Colombia). Both enjoy a relatively stable macro-economic and financial context, and functioning urban land markets. In both, low-income households fall far short

Table 1: Illustrative Home Affordability Calculations for a Contractor Built Core Unit financed by a Mortgage (US\$)

	Bolivia	Colombia	Venezuela	Suriname
Cost of a 40 m ² house on a 100 m ² lot	\$6,000	\$16,000	\$ 5,000	\$13,000
Typical amount borrowed ^a	\$4,800	\$12,800	\$4,000	\$10,400
Annual interest rate	14.5%	31%	33%	39%
Average term	9 years	20 years	10 years	15 years
Monthly payment ^b	\$78	\$142 (UPAC)	\$111	\$328
Typical monthly earnings of low-income households	\$75	\$350	\$225	\$200
Typical monthly earnings of moderate-income households	\$200	\$1,200	\$350	\$400
Maximum payment to income ratio of lenders	25%	30%	30%	35%
Payment to income ratio of low-income households	104%	40%	49%	164%
Payment to income ratio of middle-income households	39%	12%	32%	82%
Estimated share of low-income households in population	Above 60%	78%	80%	Above 70%

a. Eighty per cent loan to value ratio in the four countries.

b. Venezuela, Suriname and Bolivia use mortgage instruments that amortize conventionally. Stable macro-financial management has allowed Colombia to adopt successfully a price level adjusted mortgage. This instrument fixes mortgage principal amounts and repayments to a unit that remains constant in real terms (the "UPAC"). This system greatly lowers monthly payments in the first years (helping to resolve the "tilt" problem of conventional amortization, which concentrates the real value of repayment disproportionately in the first years of the loan) and thus assists households to qualify for loans.

SOURCES: (Field research by the author in these four countries, including: Ferguson, B. (1996), *Housing Sector Diagnostic-Venezuela*, Abt Associates, Bethesda, MD; Ferguson, B. (1996), *Un Proyecto de Fortalecimiento Institucional para Facilitar Creditos para La Vivienda Social en Bolivia*, Abt Associates, Bethesda, MD; and recent interviews with local housing organizations including Davivienda in Colombia (the largest mortgage bank in the country); the Fundacion de la Vivienda Popular in Venezuela (a large social housing developer and the oldest housing non-governmental organization (NGO) in the country); and PROA in Bolivia.

fies mortgagers based on standard underwriting criteria (such as those mandated by Fannie Mae and Freddie Mac in the US) for a conventional property (such as that described by the US Federal Housing Administration's "minimum property standards" in the US), with monthly payments that are fixed (if at a fixed interest rate) or which vary with an inflation

of affording a minimum core unit because they cannot meet the criterion used to qualify households (the mortgage payment to income ratio) by financial institutions. The ratio of mortgage payment to income for low-income households (104 per cent in Bolivia and 40 per cent in Colombia) far exceeds the maximum (25 and 30 per cent, respectively) allowed by commercial financial institutions in these countries.

Moderate-income households come closer to or are able to afford traditional mortgage finance of a minimum formal sector unit under such favourable conditions. The ratio of mortgage

and/or wage index (such as price level adjusted mortgages including Colombia's UPAC system, and double-indexed mortgages such as that of Mexico), and that uses a lien on the property, to which mortgagers must have full legal title, as physical collateral. Mortgage loans with these characteristics represent the overwhelming bulk of home-lending by financial institutions in emerging countries as well as advanced countries. Typically, no other options are available from regulated financial institutions.

2. Other favourable circumstances include: adequate collateral for long-term home-lending - typically, in the form of a first lien on real property on which financial institutions can effectively foreclose without egregious costs in resources and time; and financial institutions that have the ability, interest and instruments to lend to moderate-income households.

3. Venezuela has unstable macro-economic and financial conditions (with high and volatile inflation ranging from 30 to 200 per cent per year from 1991 to the present) and widespread problems in securing property rights and, hence, in using mortgage liens for loans. In Suriname, although inflation has dropped to under 5 per cent over the last two years, the memory of the high inflation of the early 1990s and an oligopolized financial sector result in mortgage interest rates of close to 40 per cent per annum. Urban land markets are frozen at wildly uneconomic levels and have largely ceased to function.

4. The 32 per cent mortgage payment to income ratio of moderate-income households in Venezuela is deceptively low. Very few of these households want the small (40 square metres) units distant from city centres that they can afford. In Caracas, for example, very few middle-class households use the market rate mortgage system, and financial insti-

payment to income of moderate-income households in Bolivia is 39 per cent, somewhat above the qualifying criterion of 25 per cent. This ratio has dropped to 12 per cent in Colombia, well below the 30 per cent underwriting standard necessary to qualify, largely because of the successful adaptation of this country to a price level adjusted mortgage instrument.

Moderate-income households, however, still fall short of affordability in most countries that lack such positive characteristics. Suriname and Venezuela are, respectively, a low-income and a middle-income country with less favourable conditions - as presented in the third and fourth data columns of Table 1.⁽³⁾ Only the upper-middle and upper-class have access to traditional mortgage finance in these countries,⁽⁴⁾ and the unsubsidized mortgage market is extremely thin.⁽⁵⁾

Second, the characteristics of traditional mortgage finance poorly suit the conditions that low/moderate-income households face. Mortgages require payments every month for a long period of time. However, low/moderate-income households are often self-employed, their incomes vary greatly and they occasionally face crises - such as sickness and injury - that absorb all their available resources. Hence, these households have trouble making regular payments when these payments represent a large part of their income.⁽⁶⁾

Mortgages typically require that households hold full legal title to their property. However, in many countries, most low/moderate-income households have para-legal rights to their property (bill of sale, receipts for payments of taxes, etc.) that fall short of full legal title. These para-legal rights often provide good security, ensuring permanence on the property and the ability to sell it to another household⁽⁷⁾ but are usually unacceptable collateral for financial institutions. Because of problems with land records and registry systems, acquisition of full legal title ("regularization") is a costly and time consuming process, often beyond what is affordable by, and of interest to, individual low/moderate-income households.

Mortgage lending - particularly when credits are transformed into tradeable securities - uses standard documentation and underwriting criteria. But low/moderate-income households have difficulty providing such loan inputs and meeting these rules. Instead of a salary - which is easily verified through an employer - low/moderate-income families often derive a substantial portion of their income from self-employment. Mortgage lenders have difficulty verifying self-employed income and developing an accurate estimate of self-employed income from analysis of tax returns.

Third, even when financial and other conditions allow, commercial financial institutions usually have little interest in and lend little to low/moderate-income households, particularly for mortgages. The small loans required by these households are much less profitable to commercial financial institutions than larger loans.⁽⁸⁾ The extra work of lending to low/moderate-income households (for example, in documenting self-employed income) compounds the problem of small loan size. Assuming other business is available, such loans stunt the equity and

tutions originate a token number of mortgage loans at unsubsidized rates. In contrast, some low and moderate-income households receive highly subsidized finance under the National Housing Law (*Ley de Política Habitacional*).

5. Excluding two credit unions that make micro-loans to low/moderate-income households, the major commercial financial institutions in Suriname have averaged originations of less than 100 mortgages per year in the 1990s. In comparison, new household formation is roughly 10,000 per annum.

6. In contrast, low-income households often pay back smaller loans well, when provided by private sector sources, and take their credit more seriously than middle-income households.

7. Caracas, for example, has a well-functioning system of paralegal rights to the improvement (the structure). Local government registers these rights, which form the basis of an active market, although occupants of these structures seldom regularize the ownership of the land beneath because of the high cost and complexity of this procedure. The classic study on this phenomenon is Perdomo, R.P. and P. Nikken (1979), *Derecho en los Barrios de Caracas*, Universidad Central de Venezuela, Caracas.

8. The problem of small loan size challenges attempts to lend to low/moderate-income households worldwide. Extending the loan term and increasing interest rates lower the minimum amount at which financial institutions can cover their costs. In the US, the Federal Reserve has documented this problem by developing figures from surveys on the minimum loan amount at which banks of various sizes break even, at different interest rates. For example, commercial banks with over US\$ 200 million in deposits must lend US\$ 31,009 to break even on a new loan at 7.5

asset growth of these institutions from the perspective of their management and shareholders.

The financial sector in many Latin American, Asian and African countries still operates as a club that enjoys some legal and *de facto* protection from competition. Partly for this reason, effective demand for loans often substantially exceeds supply. In addition, volatile inflation, susceptibility to economic shock and embryonic capital markets exacerbate the term-risk problem presented by mortgages - the funding of long-term assets with short-term liabilities. Thus, commercial financial institutions often have little interest in making the extra effort required to earn the lower profits from mortgages to a low/moderate-income clientele.⁽⁹⁾

In sum, these three problems greatly limit the use of traditional mortgages. Certainly, reform can and does push conventional home-lending considerably downmarket. Useful reforms range from restructuring and strengthening the financial system⁽¹⁰⁾ to removing key bottlenecks that block urban land and housing supply.⁽¹¹⁾ Such measures lower the costs of housing towards the optimistic affordability scenario illustrated in the first two columns of Table 1.

Thus, traditional mortgage finance reaches only a modest fraction of households, even in the best of circumstances. Colombia, for example, has enjoyed a relatively stable financial system, steady real growth of household incomes and widespread acceptance of a mortgage instrument based on a constant value unit (the "UPAC") that adjusts for inflation and avoids tilting real repayments towards the first years of the loan - a serious problem with mortgages that amortize conventionally.⁽¹²⁾ As a result, a strong and sophisticated home finance industry has developed in this country, yet new mortgage loans average only about one-quarter of new household formation.⁽¹³⁾ Conventional home-lending leaves three-quarters of the population unserved.

As shown in Table 1, the bulk of households in Suriname, Venezuela and Bolivia are also low-income and unable to afford traditional mortgages. In this context, gradual upgrading, financed incrementally, generally represents the only possibility for the low/moderate-income majority to obtain their own home.

II. INCREMENTAL UPGRADING AND MICRO-FINANCE

SCHOLARS FROM JOHN Tumer⁽¹⁴⁾ to Jorge Hardoy and David Satterthwaite⁽¹⁵⁾ have emphasized that households build the physical plant of Latin American, Asian and African cities without the support of formal institutions. Typically, low/moderate-income households construct their own units over five to 15 years.

Usually, low/moderate-income home ownership starts with the acquisition of land through one of a variety of means including squatting or the purchase of a lot in an informal sub-division.⁽¹⁶⁾ Particularly when some threat of expulsion exists, households build a small, makeshift, temporary dwelling to vouchsafe the property. Family or friends live in the dwelling, gradu-

per cent per annum with a one-year term. If the term rises to 10 years, the break even amount declines to US\$ 10,263. If, instead, the interest rate rises to 18 per cent, the break even loan amount declines to US\$ 5,822. See Federal Reserve (1995), *Functional Cost Analysis of Commercial Banks*, Washington DC.

9. This problem extends to mortgages for all income categories. In Guyana, commercial financial institutions make relatively few mortgage loans (around 500 per year) even though recent growth has stimulated substantial demand. Instead, they prefer to invest in government paper that provides higher earnings than mortgages (16 per cent as of January 1997 compared to mortgage rates of 12-14 per cent), lower risk and which requires virtually no work. Even the largest building society has only 30 per cent of its assets in mortgages with the remaining 70 per cent mainly in government bonds. Even Chile, renowned for its private sector dynamism and, in particular, its direct-demand subsidy system for housing, has this problem. By and large, Chilean financial institutions still do not lend to low/moderate-income households to complement direct-demand subsidies provided by government for housing. See Rojas, Eduardo and Margarita Green (1995), "Reaching the poor: lessons from the Chilean experience" in *Environment and Urbanization* Vol. 7, No. 2, October, pages 31-50.

10. Such as stabilizing macro-financial conditions and bringing inflation under control; increasing competition in the financial sector, and regulations that require and assist financial institutions in managing the risks of banking (term, credit, liquidity, foreign exchange); development of capital markets (and pension system reform) that promise longer-term liabilities; housing secondary market facilities and new mortgage instruments such as doubled-indexed and price level ad-

ally adding space and increasing quality. When the lot is small, households usually add another storey, ideally on a flat cement roof. If the lot is sizeable, they expand outwards. As the community becomes established, residents band together to pressurize government for basic services. In the meantime, households usually obtain some of these services through clandestine connections to electricity and water lines.⁽¹⁷⁾

Governments and private developers are learning to support this incremental building process. Twenty years ago, governments typically built relatively large (50 to 100 square metres) complete units. Now, many government production programmes build "core units" - ranging from 15 to 40 square metres - that low-income households are expected to expand. Even such core units, however, require large subsidies and result in very low population coverage of government housing programmes. In order to stretch scarce resources further, some governments now provide land with minimal infrastructure and other essential resources (building materials and technical assistance) necessary to support households in incremental upgrading.⁽¹⁸⁾

Increasingly, private developers are building modest, expandable units for a moderate to middle-income clientele. The better developers support their client home buyers with technical assistance (construction plans, advice) in upgrading and with the option of contracting the private firm for future expansion.⁽¹⁹⁾

The incremental building process works, although not without generating large public and private costs when unguided.⁽²⁰⁾ It is the only shelter strategy available to most low/moderate-income households. Strategic support of this home ownership process represents the best hope for increasing the scale and effectiveness of settlement efforts - both public and private. A crucial ingredient of this support is finance.

Households finance the incremental upgrading of home and community from many sources. These include individual and group savings,⁽²¹⁾ windfalls, fabrication of their own building materials,⁽²²⁾ sweat equity, small loans from neighbourhood money lenders, barter arrangements and communal self-help, and remittances from family living abroad.⁽²³⁾ These funding sources share a common problem. They dribble in unevenly and, often, slowly because they remain unconnected to formal institutions and markets. The overall result is that much of the built environment in cities improves unevenly and slowly.

Ironically, formal financial markets are booming. International capital flows are an example. In 1990, international development finance totalled US\$ 100 billion - US\$ 56 billion from official development assistance and US\$ 44.4 billion in private capital.⁽²⁴⁾ By 1996, these flows had swollen to US\$ 285 billion - US\$ 41 billion from official assistance and US\$ 244 billion from private sources. The six-fold increase in private capital is striking. Capital markets in many larger and some smaller countries have also expanded.⁽²⁵⁾ The reform of pension fund systems underway in a sizeable number of countries promises great increases in longer-term funding.

In high income nations - particularly the US but also Western Europe - home loans⁽²⁶⁾ increasingly come from capital markets.

justed mortgages that help overcome the "tilt" of repayments towards the first years of the loans.

11. Such as reform of land title and registry systems; streamlining and lowering development approval regulations and land-use planning; property taxes and other incentives for development of urban land; direct-demand programmes that target subsidies transparently to bridge the affordability gap; phasing down of rent control.

12. Note the relatively low monthly payment for the first year for Colombia in Table 1. This lower repayment greatly helps households qualify for loans although at the risk of much higher monthly payments in later years relative to conventionally amortizing mortgages. For a discussion of the "tilt" problem, see chapter 7 "The tilt problem and the creation of other mortgage instruments" in Fabozzi, F.J. and F. Modigliani (1992), *Mortgage and Mortgage-backed Securities Markets*, Harvard Business School Press, Boston.

13. New mortgage loans ran at 50,000 to 60,000 over the last five years, while new household formation is roughly 200,000. As Table 1 illustrates, the bulk of households who are low-income (78 per cent) cannot afford even a UPAC based loan for a minimal contractor built unit.

14. Turner, John and R. Fichter (editors) (1972), *Freedom to Build*, Collier Macmillan, New York.

15. Hardoy, J. and D. Satterthwaite (1989), *Squatter Citizen*, Earthscan Publications, London.

16. Many publications have detailed the process and its variations. Hence, I only briefly summarize it here. For a detailed account of how this process works in one emerging country, see Ferguson, B. (1996), "The environmental impacts and public costs of unguided informal settle-

Since secondary market institutions such as Fannie Mae, Freddie Mac and Ginnie Mae began issuing mortgage bonds and pass-through securities in the 1970s, the share of mortgages financed by capital markets has risen from below 5 per cent to over 40 per cent in the US and promises to go higher.⁽²⁷⁾ Home mortgages have proved particularly suitable for transformation into tradeable securities for fundamental reasons.⁽²⁸⁾ Some middle-income countries - including Colombia and Argentina - have begun to tap local and international capital markets to fund home mortgages.

In this context, connecting the incremental building process to formal sources of capital takes on special importance. A key piece of this puzzle potentially lies in micro-finance.

Here, "micro-finance" of housing means small loans - typically US\$ 300 to US\$ 3,000 - at market rates of interest amortized over short terms - often, two to ten years. These micro-loans can rotate, that is, after paying off one loan, the household becomes eligible for another. Collateral can take various forms depending on the legal system and local practice, ranging from a mortgage to liens⁽²⁹⁾ on various forms of para-legal ownership of the land and/or the structure.⁽³⁰⁾ Sometimes, specialized NGOs accustomed to working with low/moderate-income households package these loans and provide technical assistance to households. This technical assistance can involve the loan and the building process, ranging from the preparation of plans and cost estimates for construction work to reconstructing self-employed income and other necessary documentation for the credit file so that the loan can be underwritten.

Micro-finance of housing well suits the incremental upgrading process. Loans are small, incremental and, hence, affordable to low/moderate-income households. Standards for underwriting and establishing appropriate collateral are highly flexible. Self-employment, an incomplete structure and para-legal title to property are the norm for micro-finance, while they typically disqualify households for traditional home-lending.

Micro-finance also jibes well with the policy and fiscal context of most countries. Few governments can afford to grant ample per-unit subsidies for complete units.⁽³¹⁾ Although the politics of this traditional approach still beguiles many, it condemns housing programmes to very low coverage and irrelevancy. Housing programmes funded by salary taxes (often, with social security contributions) are prime examples of such high per-unit subsidy and low coverage. For example, the *Ley de Política Habitacional* in Venezuela - which grants subsidies averaging 60 to 80 per cent of the price of the home - reaches only one in 100 contributors to this funding system each year. Other salary tax systems for funding "social housing" - including NHT in Jamaica, FGTS in Brazil, INFONAVIT in Mexico and FONVIS in Bolivia - that grant high per-unit subsidies, also achieve dismal coverage.

Forced by thin budgets, governments are looking for ways of assisting settlement at scale on a market basis. Micro-finance comes on market terms and thus offers the potential for scale.

Not surprisingly, groups of low/moderate-income households

ment; the case of Montego Bay" in *Environment and Urbanization* Vol. 8, No. 2, October.

17. A good set of essays on the informal land development process can be found in Baross, A. and J. van de Linden (1990), *The Transformation of Land Supply in Third World Cities*, Avebury Publications, London. See also Doebele, William (1987), "Land policy" in Rodwin, Lloyd (editor) (1987), *Shelter, Settlement and Development*, Allen and Unwin Publishers, Boston, pages 110-132.

18. Examples include Operation PRIDE in Jamaica, the Sou-Sou programme in Trinidad and Tobago, and the state of Aragua's housing programme in Venezuela. This alternative, in principle, provides the essential support for upgrading and thus differs from the "sites and services" programmes of the 1970s which delivered serviced lots but failed to support consolidation.

19. For example, the largest developer in the Venezuelan state of Lara, BYCA, gives its homebuyer clients classes and a "user's manual" that provides: guidance on maintaining the structure and common areas; the administrative procedures of the condominium association; physical design specifications for the home, sanitation and electrical systems, and drainage; suggestions for landscaping; instructions on common repairs; standards for remodelling and expanding units and the lot; advice on seeking help in expansion; and plans for a series of typical expansions. This firm also actively markets its services for these expansions to its homebuyer clients.

20. See reference 16, Ferguson (1996) for a quantification of these costs.

22. In many countries - ranging from Venezuela to South Korea to Asian communities in the US - groups of households form savings clubs. Each month, a house-

often spontaneously set up micro-finance systems when funding becomes available. In Venezuela, for example, *barrio* improvement programmes have adopted a low-tech type of micro-finance as the norm. Housing NGOs such as the FVP (*Fundacion de la Vivienda Popular*) help organize community groups and channel small amounts of government funding to them. In turn, these community groups make small loans (US\$ 500-2,000) to households for two to five years, usually in the form of payment of receipts for building materials. Households use these funds for a wide range of home-building activities, from additions to remodelling to new construction. Families are expected to pay as much as they can afford - usually in the range of US\$ 25-60 per month. The community group also sets the term to achieve affordability. More prosperous households that can afford higher monthly payments pay over shorter periods - one to two years. More needy ones pay over longer periods - four to five years. Households sometimes go into arrears to meet a crisis. Non-payment, however, is typically nil because of peer pressure from other members of the neighbourhood who are waiting for the borrowers' repayments to fund their own loans.

Micro-finance of housing bears some important similarities to micro-finance of enterprise as practised by the Grameen Bank in Bangladesh, Banco Sol in Bolivia, Working Capital in the US and countless other organizations, particularly in low-income and middle-income countries. Both involve small loans, have the potential to rotate and often operate through specialized NGOs accustomed to working with low/moderate-income households.

Not surprisingly, a significant share of loans made by many micro-enterprise programmes in these countries end up financing housing. A high proportion of the Grameen Bank's loan portfolio is now for housing. A major micro-enterprise lender in Bolivia - FIE⁽³²⁾ - estimates that 20 per cent of its supposed "micro-enterprise" loans go for home construction and expansion. Partly for this reason, FIE is now interested in developing a new line of micro-credit specifically to finance housing.

However, important differences distinguish these two forms of lending to low/moderate-income households, and raise issues. These challenges remain largely unresearched and help explain the great difference in the scale of the two phenomena. Micro-enterprise lending is widespread and is a tested means of reaching low/moderate-income households in low and middle-income and, increasingly, high-income countries. Thousands of programmes dedicated mainly to micro-enterprise lending have made roughly 8 million loans worldwide by one estimate.⁽³³⁾ In contrast, very few programmes or organizations dedicated principally to micro-finance of housing appear to exist.

a. Challenge 1: Cost (Loan Terms) vs. Affordability

Interest rates for micro-enterprise finance have been much higher than for most other market transactions in order to compensate lenders adequately. Banco Sol in Bolivia, for example, lends at rates of 25 to 35 per cent per annum for micro-enterprise when traditional home loans come at around 15 per cent.

hold contributes a certain amount to the savings pool, the group holds a lottery and the winning household gets this pool of savings. The process theoretically continues until all households win once. On winning the monthly lottery, the households often use this mass of savings for home purchase or consolidation although other applications include the start of a business, dowries and pilgrimages.

22. Typically, at very high interest rates but with much more flexible repayments than commercial mortgage finance allows.

23. In areas such as the Caribbean, a large part of the investment in housing comes from remittances from family members living in North America or Western Europe. For example, one analyst estimated 90 per cent in the case of Guyana.

24. See the New York Times (1997), "The chief banker for the nations at the bottom of the heap", September 14.

25. Colombia is an example. Since 1990, when government regulation removed key barriers, the domestic capital market - particularly the bond market - in Colombia has taken off. Corporations, local governments and banks increasingly finance their activities from these markets. Davivienda - the largest mortgage bank in Colombia - has started securitizing its mortgage portfolio in this local market and intends to go international soon.

26. "Home loans" here refer to what are typically called "single-family mortgages" in the US, that is, mortgages on one to four unit properties. Securitization has proved less useful in financing multi-family residential property.

27. Fannie Mae (formerly called the Federal National Mortgage Association), Freddie Mac (an alternate name for the Federal Home Loan Mortgage Corporation) and Ginnie Mae (alternate

The spread above "normal" rates of about 10 per cent compensates lenders for the high fixed costs (relative to the small size of these loans) and the extra work that financing businesses run by low/moderate-income households entails. These high rates seldom deter micro-entrepreneurs, who would otherwise face astronomical rates from neighbourhood money lenders. Experience has confirmed that micro-entrepreneurs need rapid loan availability rather than low costs and can afford interest rates somewhat above those prevalent in formal markets.

However, this set of price and affordability assumptions may work less well for micro-finance of housing because these loans require larger amounts. Thus, micro-finance of housing may also require interest rates well below those necessary to support micro-enterprise lenders in order for households to afford these larger (housing) credits. Put another way, the effective demand for micro-housing finance at the rates necessary to make this activity commercially viable has yet to be widely tested.

The longer term of housing micro-finance creates greater term risk. Micro-enterprise loans are so short (usually six months to one year) that they minimize the risk of mismatching assets and liabilities. These short-term assets can be funded with the short-term liabilities (often a maximum of one year). However, micro-finance of housing may well have to offer substantially longer terms to lower monthly payments and achieve widespread affordability - typically from two to ten years. Hence, micro-finance of housing generates term risk, although less than the longer term of traditional home-lending.

b. Challenge 2: Loan Security

Many micro-enterprise loans use solidarity groups to enhance credit. Typically, if one borrower fails to pay back, none of the other members of the solidarity group can receive new loans. This collective security has proved quite effective and has resulted in good repayments in well-managed programmes. A different form of collective security may also work for micro-finance housing programmes that operate in one low-income community, such as the Venezuelan case described above.⁽³⁴⁾

Such collective loan guarantees, however, appear much less suited to micro-finance housing programmes operated by financial institutions and NGOs, for two reasons. First, NGO and lender based programmes typically work in many communities. Thus, the peer pressure created by programmes that function in one neighbourhood is largely absent because those waiting for loans to be funded from repayments do not know or come into contact with current borrowers. Second, if a solidarity group were used, the larger loan amounts and longer term of a micro-finance housing loan would impose greater risks on the other members.

c. Challenge 3: Technical Assistance

Solidarity groups also function as a key means of self-help technical assistance to micro-business borrowers. Members of

name for the Government National Mortgage Corporation") are organizations created by the US federal government to provide a secondary market in home mortgages. Hence, the primary market consisting of savings and loans, credit unions, commercial banks and other financial institutions can sell their loans to these secondary market organizations to replenish their funds, which helps increase the availability and improve the terms on loans to homeowners and allows financial institutions to manage better the risks of such loans. Fannie Mae and Freddie Mac have become private corporations and now operate as "government sponsored enterprises" while GNMA continues as a government agency. In addition to these, the US has experimented with a wide variety of other secondary market methods and institutions, including the tax-exempt issue of state housing authorities and local governments and the Federal Home Loan Bank System.

28. Securitization: helps solve the term-risk problem inherent in long-term mortgages by allocating this risk to institutions (such as pension funds and other long-term investors) that can handle it; greatly increases the liquidity of home mortgages, thus securitization helps financial institutions get these mortgages off their books by selling them when necessary to meet capital, liquidity and other requirements; and increases competition and lowers spreads (hence, costs to home borrowers) in mortgage lending by allowing qualified institutions without substantial capital (mortgage brokers) to originate mortgages. In turn, home mortgages have proved susceptible to a high degree of standardization and have low credit risk relative to many other types of assets, which has appealed to investors.

29. A lien is a legal claim on a property registered in title or property records.

the group, typically, are in the same or a related line of business. Hence, they can share advice, collectively purchase and sell goods to achieve economies of scale, and jointly lobby government and larger businesses.⁽³⁵⁾

Incremental home builders often require technical assistance to consolidate their structure and some means of organizing collective action to bring basic services to their community. However, micro-finance housing programmes may have difficulty in finding a mechanism as effective and as low-cost as solidarity groups to meet these needs.

In sum, these challenges have contributed towards making housing micro-finance more difficult and less widespread than enterprise micro-finance. Section III describes and analyzes one of the few cases of successful micro-finance housing programmes, to distil lessons useful in meeting these challenges. The concluding section applies these lessons for addressing the issues and considers the potential for greatly expanding micro-finance of housing.

III. MICRO-FINANCE OF HOUSING; THE CASE OF PROA

PROA STARTED IN 1988 as an NGO dedicated to urban development in El Alto, a rapidly growing city with some 500,000 inhabitants which has grown adjacent to La Paz, the capital and largest city of Bolivia.⁽³⁶⁾ Since then, this NGO has developed a wide variety of programmes, including housing credits, sewer connections, reforestation, health and micro-enterprise credits. PROA's method has stressed community development and translating indigenous (Aymara and Quechua) cultural traditions into an urban context, namely that of El Alto. For its first five years, PROA depended mainly on donor funding, in particular from the United States Agency for International Development (USAID). Since 1992, the organization has become increasingly self-sufficient and now supports the bulk of its programme costs through fees.

PROA's involvement in housing has gone through three stages, all of which have channelled formal sector funding from Mutual La Paz, one of the two largest and healthiest of Bolivia's mutual savings associations.⁽³⁷⁾ As of March 1996, for all three PROA housing programme stages, Mutual La Paz had disbursed US\$ 4,248,162 through 1,535 credits.

The first phase of PROA's housing programme began in April 1991. PROA started channelling Mutual La Paz funding for home improvement loans backed by solidarity groups - much as micro-enterprise credit has functioned in Bolivia. PROA channelled 400 of these credits for a total of roughly US\$ 400,000. This first experiment failed for a number of reasons. PROA's origination procedures were inadequate and naive. Foremost, the solidarity groups failed as a guarantee mechanism. In addition, the quality of documentation for property ownership left much to be desired. Finally, PROA failed to monitor carefully the repayment of loans and deal with problems. The overall result was

30. For example, in Barbados, credit unions have developed a business of home improvement lending to owners of "chattel houses" - moveable homes (although some seem quite fixed on foundations) that lie on land owned by a third party.

31. Chile has had an interesting experience with its programme of subsidies for low-income households - see, for instance, reference 9, Rojas and Green (1995). However, the Chilean context of relatively high GNP growth in recent years, fiscal surplus, low unemployment (around 6 per cent) and well-organized central government bureaucracies make it unusual.

32. *Centro de Fomento de Iniciativas Privadas.*

33. Made by the Micro-credit Summit, an organization headquartered in Washington, DC that researches micro-enterprise.

34. In the Venezuelan low-tech example, micro-finance of housing also uses community solidarity as a form of security. However, this community solidarity is not necessarily a collective obligation for repayment, as is common in micro-enterprise solidarity groups.

35. The micro-enterprise programme may and often does supplement this self-help technical assistance with training.

36. This account is based on Ferguson, B. (1996), *Un Proyecto Piloto de Fortalecimiento Institucional para facilitar Creditos para la Vivienda Social en Bolivia*, prepared for the Inter-American Development Bank, Abt Associates, Bethesda, MD.

37. In addition, the second stage counted with USAID housing guarantee loans.

38. First, PROA reviews, with lawyers, the documents relating

that many of the borrowers simply refused to pay back loans. PROA covered half of the losses from this first phase to maintain its credibility with Mutual La Paz.

The second stage of PROA's involvement in housing began in January 1993. The failure of solidarity groups as a guarantee method led PROA to arrange loans backed by individual guarantees. Instead of solidarity groups, the guarantee for these loans consisted of "pre-mortgages" - that is, documentation of ownership short of a mortgage. The costs of registering a mortgage in money and time are significant for low-income households which, typically, earn US\$ 50 per month. For a mortgage of US\$ 3,000, registering a mortgage with the Office of Property Rights costs US\$ 35 and takes one month. When the loan is repaid, the lien must be cancelled, costing another US\$ 35 and taking another month. Instead, PROA required the borrowers to provide various documents that proved ownership. In addition, the NGO instituted better methods for monitoring and resolving repayment problems, inspection of the construction and financial analysis of credit worthiness.

In cases where households lacked legal title, PROA helped them secure small loans through amassing a range of documentation⁽³⁹⁾ which, together, provided proof of ownership (which PROA calls "pre-mortgages"); this falls short of full legal ownership but provides adequate security for a loan. In total, this process costs roughly US\$ 200-300 in expenses - mainly in fees to the Office of Property Rights. PROA continues to operate this land regularization programme as part of its overall housing loan efforts.

PROA then lent these households sums ranging from US\$ 300-2,000, largely for home improvements. PROA channelled a total of US\$ 466,382 to fund 410 loans under this second phase of its housing programme.

Interestingly, households have repaid these "pre-mortgage" loans well, by Bolivian standards.⁽³⁹⁾ Thus, the security offered by the pre-mortgages proved sufficient to guarantee the amount of these loans, US\$ 300-2,000. Nonetheless, Mutual La Paz suspended the line of credit for this second phase in December 1993 because of the repayment problems with the first phase of PROA's housing programme.

PROA's experience with these first two stages laid the foundation for a third stage of low-income housing finance that has proved highly successful. In this third stage, PROA has honed its methods of advertising, of counselling home buyers, of underwriting and handling servicing problems. These methods well suit the conditions of low-income informal sector households and, in effect, greatly reduce, for the financial institution, the cost of promoting and packaging low-income housing loans. Essentially, PROA performs these services for the financial institution efficiently and at reduced cost.

From the beginning of this third stage in April 1993 until March 1996, PROA channelled US\$ 3,883,883 to 755 borrowers. The loan amount averaged US\$ 3,750. PROA gears construction amounts and adjusts terms from five to ten years, to put them in line with the borrower's ability to repay. In general, PROA has found

to ownership of the households. Typically, the main document is the sales receipt. PROA then assists the households in registering this document with a notary public who provides a certificate that is registered with the Office of Property Rights. The Office of Property Rights then provides a computerized card indicating registration of the sales receipt. PROA requests that the Office investigate the existence of any other liens on the property. Finally, this Office also conducts a title search of the property to examine changes in ownership over the last ten years.

39. Ninety-day arrears on these pre-mortgage loans have run at 10 per cent, while only 5 per cent of this portfolio has reached the foreclosure stage.

40. In El Alto alone (the municipality where PROA is most active, with a population of more than 400,000 and growing at around 10 per cent per annum), 80 per cent of housing units are "informal", 70 per cent have one to two bedrooms and are overcrowded, more than 85 per cent lack a bathroom, and the great bulk suffer from poor construction.

that repayment amounts must range from US\$ 25-50 per month to keep late payment and foreclosure rates low. Some households, however, can borrow more. Interest rates vary from 13.5 to 15 per cent per annum. PROA requires a mortgage for these loans.

The bulk of loans under PROA's most recent programme are for home improvement - the main housing problem in Bolivia - including remodelling, finishing, additions, and construction of bathrooms and kitchens. In addition, PROA also finances connections to water and sewer lines, regularization of the property, self-help new construction and new construction by small contractors.

Foreclosure and late payment rates are low by Bolivian standards - and below those of Mutual La Paz's overall mortgage portfolio. Loans that are four to 90 days late account for 7.1 per cent of this portfolio. The great bulk of these late payers lag behind because of temporary problems such as late payment for goods and services or late paid salaries. Thus, the irregularity of informal sector incomes makes the four to 90 day category inappropriate for measuring repayment problems. Loans that are more than 90 days late and, hence, are in the process of foreclosure account for only 1.09 per cent of this portfolio, a figure substantially below that of Mutual La Paz's middle to upper-income mortgage portfolio (4.1 per cent).

PROA continues to operate this programme at a loan volume of around US\$ 175,000 per month, the key constraint being the funding available from Mutual La Paz. PROA has the capacity to channel US\$ 500,000 per month and no lack of effective demand.⁽⁴⁰⁾

PROA receives a fee of 5 per cent of the principal amount of the loan, a figure set by Mutual La Paz who has resisted attempts to raise this ceiling "because this programme is for low-income households." The fee is added to the total amount of the loan and financed. PROA management estimates that a fee of 7 per cent - which is US\$ 280 per loan - is necessary to break even at the current loan volume of US\$ 175,000 per month. Hence, PROA subsidizes its housing programme somewhat from other areas because of the fee cap set by Mutual La Paz.

A key indicator of the success of this programme is how well it is received by low-income households in El Alto. As a result of this success, Mutual La Paz has opened an office in El Alto, two blocks from PROA. However, virtually no low-income borrowers go directly to Mutual La Paz to apply for loans but, instead, go to PROA and agree to pay PROA's 5 per cent fee to be financed by their loan.

The main characteristics of PROA's housing micro-finance loan programme and process are as follows:

- Ninety per cent of borrowers are informally employed. PROA typically works with a household to arrive at a realistic estimate of its monthly income and then documents this income creatively.
- PROA uses three architect/loan agents to advertise its loan programme to low-income households and to take loan ap-

plications and prepare the first draft of a loan file. These architect/loan agents also draw up plans and budget construction costs for the household and, in turn, hire a number of assistants to help them. The agents receive a small sum on a commission basis - about US\$ 40 per loan - from PROA and earn the bulk of their remuneration from charging households directly for the design and construction budgeting.

- The architect/loan agents and PROA technical staff help households to size their construction projects so that they can afford them, help estimate the costs and design the construction projects. PROA has computerized the construction cost estimation process.
- PROA has also computerized the preparation of loan files that the NGO submits to Mutual La Paz - including the underwriting and the preparation of the contract between the borrower and Mutual La Paz. Mutual La Paz checks these files, requests any additional documentation and approves them for funding.
- Typically, two construction progress payments occur. PROA inspects the work to confirm adequate performance before the disbursement of the second progress payment.
- Households make monthly payments to Mutual La Paz. However, PROA receives weekly reports on repayment problems and resolves the great bulk of them in advance of judicial judgement and foreclosure. Mutual La Paz conducts these legal processes.
- Throughout the process, PROA spends considerable time counselling and informing borrowers so that they understand the loan process, provide necessary data and documents, and do what is expected of them.
- The overall result is that PROA greatly lowers the costs that Mutual La Paz would otherwise face in lending to informally employed low-income home borrowers. In essence, Mutual La Paz reviews PROA's work.
- The programme operates essentially without subsidy. Mutual La Paz raises funds at 9 to 10 per cent and lends them under this programme at 13.5 to 15 per cent per annum. Because of PROA's efforts, Mutual La Paz earns adequate profits. PROA would break even if it were allowed to raise its fee from 5 to 7 per cent of the loan amount or if the Mutual increased the funding to allow PROA loan volume to rise from US\$ 175,000 per month to US\$ 500,000.

In sum, PROA's current housing programme is a striking success, particularly for the low-income borrowers - who have no other viable alternative. However, the programme suffers from a critical flaw from the perspective of PROA management. It

41. The 30 Bolivian organizations dedicated to micro-enterprise finance face a parallel problem. With the exception of Banco Sol, these organizations - all NGOs - must rely on financial institutions, donors and others for liabilities. This limitation hampers their growth and threatens the continuity of their programmes.

42. *Fondo Financiero Privado* (FFP).

43. Banco Sol is the fifth of nine commercial banks that increased their share of the market between 1990 and 1993. Seventeen other banks either maintained or lost share. See Muller, et al. (undated), *Comportamiento y Evaluación del Sistema Bancario*, La Paz.

44. The greater the education, the more Bolivian households save - keeping income levels constant - for the acquisition and improvement of housing. In effect, households view acquisition of, and investment in, housing - as well as pension funds - as social security in case of sickness and for old age. Bolivia's low savings rate - only about three-fifths of investment - is an important barrier to economic growth. Increasing the savings rate is critical to lifting economic growth to the level (around 6 per cent, according to some studies) necessary to make good progress in reducing poverty. The availability of housing loans - particularly if linked to household savings performance - is likely to strongly stimulate savings. FFPs could also educate low-income households on the importance of savings, both through the on-going contact which results from visits to make deposits and from instructional programmes. Increasing Bolivia's savings rate is critical to lifting economic growth (from 3 to 4 per cent per annum, currently) to levels (estimated at 6 per cent per annum) that decrease poverty. See Siles, Armando Pinell, et al. (1996), *Ahorro Privado e Inversión en Bolivia*, La Paz, draft document.

depends on the limited availability of funding from one financial institution. PROA has the capacity to lend three times the amount available from this financial institution. Put negatively, a decision by Mutual La Paz to end this funding would shut down PROA's housing programme.

Hence, organizations such as PROA who seek to channel funds for low-income housing must secure sustainable sources of funding.⁽⁴¹⁾ The best alternative is to qualify with the Central Bank as a financial institution in order to take deposits. The Central Bank has established a new category of financial institution, the FFP,⁽⁴²⁾ for the purpose of intermediating funds to low-income groups. With the creation of this category, authorities have sought to provide a vehicle for NGOs dedicated to micro-credits to qualify as financial institutions in order to raise funds independently.

Once qualified as FFPs, these low-income credit intermediaries could aggressively pursue deposits and substantially expand their scale - both for micro-enterprise and, in particular, for housing - a virtually untapped market. Through lending to and taking deposits from the low-income majority, some of these organizations might achieve growth rates similar to Banco Sol, one of the fastest growing commercial banks in Bolivia.⁽⁴³⁾

In addition to providing a source of liabilities, taking deposits from low-income households would mobilize a substantial source of funding largely untapped by the financial system. It would also bring low-income households into the market on the liability as well as the asset side.⁽⁴⁴⁾

IV. PROGRAMME AND POLICY LESSONS

THE PROA CASE suggests that micro-finance of housing has the potential to support the incremental building process and connect the low/moderate-income majority in many low and middle-income countries with formal sources of capital. But, how much potential and, hence, how much effort should governments, donors and others put into cultivating this activity?

The evidence to date suggests cautious optimism. Micro-finance of housing clearly offers scope far beyond the extent of its current practice. Reaching this potential depends largely on solving the key problems inherent in this activity.

Foremost, is the cost and affordability challenge - how to adequately compensate lenders while maintaining affordability for households. "Adequately compensate lenders" is shorthand for a range of activities, which include:

- Raising revenue (points, loans fees and margins). One benchmark is that of PROA, who charges a fee of 5 per cent on the principal amount of the loans, although management notes that 7 per cent is necessary for the organization to break even.
- Reducing costs. The PROA case suggests computerization, innovative servicing, assigning the responsibilities and costs of many tasks (plans, cost estimates, collection of key docu-

mentation) to consultants designated by the lender but paid by households, and raising the scale of operation. Reducing costs takes time, intelligence and effort. PROA achieved good results only after five years of experimentation, failure and innovation. Pioneer housing micro-lenders must expect a similar learning curve.

- Managing term risk. Dramatic structural reforms in the early 1990s stabilized Bolivia's finances. The country now enjoys modest interest rates. Hence, the funders of PROA's loans (Mutual La Paz) have a much easier job of managing term risk.

Second, solving the collateral and credit risk problem at reasonable cost depends on the legal framework and para-legal practices that govern rights to property. PROA has effectively used both para-legal proofs of title ("pre-mortgages") as security for loans and full legal title (mortgage loans). PROA also takes the lead in resolving any loan payment problems. In contrast, solidarity groups perform poorly as loan security for housing loans although they work well for micro-enterprise lending in Bolivia, including PROA's micro-enterprise programmes.

PROA's ability to foreclose expeditiously underlies its success in solving the credit risk problem. This ability varies greatly across countries and regions. Much of Latin America has effective laws or para-legal systems for foreclosure on the structure, the land or both; much of Africa, portions of South Asia (such as India) and much of Eastern Europe and the newly independent states do not. As with home finance generally, micro-finance is likely to be feasible in countries with a legal and regulatory environment that allows expeditious foreclosure. Elsewhere, home-lending markets tend to clear near zero.

Third, PROA loans involve a wide range of technical assistance necessary for micro-finance of housing. PROA directly provides a portion of this, including advising households on the responsibilities of home ownership and home loans (called "home ownership counselling" in the US) and helping develop records of income and credit. However, PROA off-loads much of the cost of this technical assistance onto the borrower by requiring households to hire expert help for the preparation of plans and estimates and for the initial collection of documentation for the credit file.

PROA's experience suggests a final key challenge for micro-finance of housing shared by micro-finance of enterprise, namely, improving access to funds. As in many other countries, the commercial financial sector in Bolivia enjoys some legal and *de facto* protection from competition, is highly conservative, and hesitates to lend to low/moderate-income households. Although more innovative than most Bolivian financial institutions, Mutual La Paz still strictly limits its funding of PROA's housing programme.

The "bottom-up" solution lies in transforming organizations specializing in packaging loans for low/moderate-income households - such as PROA - into regulated financial institutions so that they can take deposits. Although a good idea in principle,

this evolution requires demanding steps. First is the creation of a legal framework for such an NGO *cum* bank and the capacity within the regulatory authorities to supervise such a new type of financial institution. Bolivia has taken this first step by creating the FFP category but has largely failed to move beyond it.

With the regulatory framework in place, these would-be financial institutions need important support to qualify with financial regulators, including:

- a source of equity capital;
- staff with bank management experience and systems to manage new types of risk (such as liquidity and term risk) for these loan packagers;
- systems for financial record-keeping and reporting to the financial regulator; and
- help in shifting the organizational culture towards that of a bank while retaining the capacity to work with low/moderate-income households.

The "top-down" solution involves teaching mainstream financial institutions how to work with, and make money from, home loans to low/moderate-income households. Useful approaches are, in many respects, the reverse of those required for the bottom-up solution. They include:

- hiring staff with community development experience;
- development of and training in creative methods for underwriting and servicing low/moderate-income loans;
- selective use of para-legal rights to property as collateral and/or streamlining of title regularization;
- careful attention to raising revenues and reducing costs through technology and off-loading tasks to outside agents; and
- cross-marketing of other products and services to low/moderate-income households along with the home loan product.

Both the bottom-up and top-down solutions can work. An emphasis on one or the other depends on the institutional and regulatory context. Transforming NGOs into regulated financial institutions appears most useful if a country, such as Bolivia, has a well-developed NGO network with experience in packaging loans and flexible financial authorities. Reform should emphasize moving banks downmarket if a region has competent financial institutions but few NGOs with experience in housing and loan packaging, such as in much of the Caribbean.