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THE STATE OF MEXICO'S HOUSING
~ 2004 ~

Prepared for CIDOC and CONAFOVI

by the

**JOINT CENTER FOR HOUSING STUDIES
OF HARVARD UNIVERSITY**

June 9, 2004

The State of Mexico's Housing 2004

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EXECUTIVE SUMMARY

Mexico is at a crossroads. Restoration of macroeconomic stability and economic growth, coupled with strong commitment to housing reforms, provides the nation with a unique opportunity to improve its housing conditions and meet increasing demand.   It also presents unique opportunities to use housing as a tool for economic and social development. Housing is important because:

- Housing is an important driver of economic growth.

- Housing is a vehicle of wealth creation for households and constitutes a store of national wealth.

- Housing has large multiplier effects.

- Investment in rental housing is a source of household income generation.

- Housing provides a location for micro-enterprise.

- Larger financial systems are influenced by the flow and performance of capital to the housing sector.

- Safe, clean, adequate housing produces positive externalities by improving the health and well-being of households and communities.

- Proper planning for the location of new development promotes functioning of urban systems and labor markets and avoids the higher cost of integrating unplanned communities into the urban fabric after the fact.

But the road ahead is challenging. Housing finance is available almost exclusively for new construction and directed mostly to formal private sector and public sector workers with modest wages. As a result, the majority of the population must rely on self-financing strategies to build or consolidate self-built housing, to purchase developer-built housing, or to purchase existing housing. 50 percent or more of all new homes are self-built by low-income households and large shares of these are built on land without clear title and often without basic infrastructure and

services. Similarly, a large share of the standing stock has uncertain legal status and is served by less than adequate infrastructure.

Meanwhile, broader geographic dispersion of economic growth than in the past has created demand for more infrastructure, planning, and information on housing markets at the municipal level. Making matters more challenging, intergovernmental cooperation to finance and coordinate an infrastructure is uncommon and there is little consistency or continuity in local land use planning practices. Expanding production is a goal of both government and private sector actors. Over the last three years, housing production and investment has increased nearly 45 percent, according to CONAFOVI. Addressing the underlying challenges to the housing sector is essential to support continued investment.

FIVE KEY STEPS TO HOUSING PROGRESS

All these challenges must be addressed to advance housing's role in social and economic development. Future progress depends particularly on the following five actions:

- extending housing finance to more segments of the population;
- encouraging housing production within the legal framework;
- improving land and infrastructure planning and finance;
- facilitating trades within a working secondary housing market[1];
- collecting better information on housing and mortgage markets.

Both industry and government leaders recognize that these steps form the path that must be taken to meet the housing needs of the people of Mexico. Extending the housing finance system depends on leveraging available capital and mobilizing capital from additional sources. That in turns depends on improving the capacity of financial institutions to measure and manage risk, which requires both better information on risks and the ability to take control of underlying housing assets in the event of borrower default. Leveraging public capital effectively also

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[1] In this report, the term "secondary housing market" is used to describe the buying and selling of existing (rather than newly constructed) homes. We distinguish the secondary housing market from the secondary mortgage market, which refers to securitization and resale of mortgage loans.

requires coordination among publicly mandated agencies.[2]   Much of the lending done by publicly mandated agencies involves extending whole loans rather than insuring loans, guaranteeing pools of loans, or co-mingling funds, all of which could help stretch limited funds further and leverage more private capital.

Trying to create a system by which creation of new settlements is done on a legal basis, as well as regularizing settlements that now have uncertain legal status, is critical because until this is done the stock of wealth held in much of Mexico's housing cannot be tapped to finance consumption and investment.   That wealth has been estimated at over one trillion pesos. Facilitating an active secondary housing market allows households to realize accumulated wealth, build up as equity in their homes, encourages mobility based on labor market and life-cycle changes, and provides critical information on housing markets through recordation of sales transactions.   Until this is done, wealth in the form of housing cannot be liquidated and used by households to trade up to better housing or to finance other consumption and investment.

Improving the physical infrastructure and land planning is vital because the quality of housing depends on sanitation, water, and access to transportation and utilities.   Builders need greater certainty in the development process to contain costs and manage risks.   Communities need better planning because settlement takes place spontaneously and illegally where it is not planned and channeled. Once developed, that spontaneity makes integrating communities into the fabric of the municipal area and into an efficient transportation system costly and difficulty. It also adds to the cost of extending services.

Finally, information is vital because it is the basis for improving risk management and prudent decisions by financial institutions, government agencies, builders, developers and consumers. To expand the amount of credit and extend housing and mortgage markets, Mexico needs better information on ownership of land, the value and legal status of its existing stock, the payment history of its citizens, the financial performance of financial intermediaries, the financial

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[2] Institutions which we call "publicly mandated agencies" throughout this report include INFONAVIT, FOVISSSTE, SHF, FONHAPO, and the OREVIs. Although INFOVAVIT is financed by private-sector employers and workers, and the board is composed of representatives from employers and unions as well as the government, because its mission derives from federal government, in this report it will be included as a publicly mandated agency. Further discussion of the interaction between public and private lenders is in Section 3.1.

performance of mortgage loans, the value of homes bought and sold in the market, the supply of new homes under construction and completed but not yet sold, the demand for new housing, the costs of providing infrastructure, and best practices in land use planning and infrastructure finance.

PURPOSE OF THE STUDY

Recognizing the need for a concise study and diagnosis of housing problems in Mexico, CIDOC commissioned this study in June 2003. Over the past year, in partnership with CIDOC and CONAFOVI and their members, as well as an extraordinary group of dedicated public officials, the Joint Center for Housing Studies of Harvard University prepared this evaluation of the state of Mexico's housing and crafted a blue print for action. This report draws upon recent studies and interviews with Mexico's housing leaders. It does not involve primary data collection but instead relies on data already included in other reports or available from government agencies. The action plan it contains recommends the questions, issues, and information gaps that the public and private sectors, working cooperatively, should address. Also, it recommends an organizational structure to foster the ongoing diagnosis and coordination of plans to solve Mexico's housing challenges.

This report is a first step in developing a process for the ongoing study of housing in Mexico. Its goal is to stimulate debate over Mexico's housing future and spark a process that leads to cooperation and concrete actions among key stakeholders.

MEXICO'S HOUSING SYSTEM

The diagnosis of Mexico's housing challenges, opportunities, and information gaps rests on a review of the state of Mexico's housing. It is of course difficult to reduce a complex sector like housing to a simple description. Doing so, therefore, must generalize to an extraordinary degree. Nevertheless, such a description helps motivate a discussion of the nation's principal challenges and opportunities.

The following are lists of findings that help place the report's problem diagnoses and recommendations in the context of Mexico's housing system.

Housing and Housing Markets

1. Mexico's housing stock consists of about 24 million units, with an estimated value of more than 1.1 trillion pesos (about 110 billion USD).[3] Less than 13 percent of housing units have outstanding mortgage debt; thus a significant store of home equity is untapped. Even though the vast majority of units are in the lowest price ranges, much of the value of the housing stock is concentrated in the small fraction of higher cost homes. In a very real sense, much of Mexico's savings, especially among those with low incomes, is embodied in the materials used to build their homes and the value of the land underneath it. Tapping into that savings requires access to home equity loans as well as to loans to buy existing housing.

2. Roughly half of all new housing—approximately 300,000 units per year—and about two-thirds of existing homes are self-built. A substantial fraction of self-built and a portion of developer-built units are in poor condition and require significant upgrading. Measures of housing quality are scarce and incomplete even for formally built units.

3. The informal housing sector consists of housing that is self-built, lacks clear title and formal connections to urban services, and is financed through cash or informal loans.[4] Data on self-built houses, such as the number and location of existing units, the proportion that has been retrofitted with urban services and granted clear title, and secondary sales of these units, is incomplete and difficult to find. Most information is based on extrapolation from partial surveys or interviews.

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[3] Accurate estimates of the size and value of the stock are difficult to obtain, due largely to the informal or self-built sector and the lack of observable sales transactions. While the exact numbers are open for discussion, we believe the figures in this report are correct to an order of magnitude. This estimate is based on detailed work done by SOFTEC.

[4] The defining characteristics and appropriate name of the informal sector (also called self-built, irregular and illegal) are issues of dispute among industry members and different definition are employed in previous reports. For purposes of this report, the term informal or self-built will be used to identify housing with the four characteristics listed above. The rationale for this definition is discussed later in the Executive Summary and in Part II, Section 1.1.; Section 2.2 discusses the operation of the informal sector in more detail.

4. The secondary housing market is quite small, and the main publicly mandated agencies have historically imposed rules that restrict the operation of documented resold housing transactions. Hence, housing is an extremely illiquid asset and appreciation in home values is seldom realized through capital gains on sale.

5. About 13 percent of households rent, although the share renting may be underestimated because owners of rental housing may not report the income received.

6. The greatest absolute demand for housing comes from the four largest cities (Mexico City, Monterrey, Guadalajara and Puebla), but rates of growth are increasing especially among mid-sized cities along the US-Mexico border and coastal tourist areas.

7. Based on the income distribution, the majority of demand is for housing in the lowest three market segments—minimum, social and economic—but the fastest growing segments are economic and middle.[5]   An indeterminate but certainly large number of low-income households are likely to require up-front subsidies in order to afford housing.

8. The small scale of construction in rural areas (locations with population under 15,000) makes it uneconomic for developers to meet housing demand in these areas.

9. Limited information on local demand and on the allocation of publicly mandated loans below the state level creates local imbalances between supply and demand. Although there is clear need for new housing in virtually every market, the geographic distribution of housing finance limits the translation of potential demand into effective demand (conversion of households with interest in buying a home into households with the financial capacity to purchase a home by getting loans). Particularly given the transition to borrower-based rather than developer-based loans, this may result in some local excess supply as developers try to anticipate how many homes they can sell.

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[5] Standard market segments are defined by price (in pesos) as follows: Minimum segment is under $80,000; Social segment is $80,000-200,000; Economic is $200,000-380,000; Middle is $380,000-1 million; the Residential segment is $1-2 million; and Residential Plus is over $2 million.

In summary, housing markets operate mostly in the purchase and sale of new housing, in self-built housing, and to a much more limited degree in the relatively small rental sector. Mobility is limited, and what mobility there is maybe concealed to avoid taxes and fees or to conform to agency rules. Demand is primarily concentrated in the lower end of the market and large urban areas.

Housing Finance

1. The roles of the government and the private sector within the Mexican housing finance system have fluctuated over the past half-century, and are currently positioned to begin a new cycle. In the 1960s, commercial banks were quite active in mortgage lending. High inflation discouraged private capital in the 1970s, prompting the formation of federal public and publicly mandated housing finance programs. During the 1980s, banks, newly under the ownership of the federal government, had required quotas for social interest housing loans. Then following re-privatization in the early 1990s, banks rapidly expanded mortgage lending, but were devastated by the peso crisis in 1994-95.

2. Currently, the private sector provides very little capital for housing finance; bank lending has still not reached pre-peso-crisis levels and many potential borrowers are wary of bank loans after the previous negative experience of the 1990s. However, in recent years private capital has expressed interest in returning in more active ways to the market.

3. Public or publicly mandated institutions provide the majority of housing finance. The housing sub-accounts of the pension programs (INFONAVIT and FOVISSSTE) are financed through mandatory contributions by firms and employees. Meanwhile, a new source of capital has emerged since the peso crisis. The housing trust fund, FOVI, has evolved into the national mortgage bank, SHF. SHF receives direct budget appropriations and funding from international donors, which it channels through the SOFOLes, which are privately-owned specialized financial institutions, to reach new markets.

4. The publicly mandated agencies primarily finance the sale of new homes to low-wage employees in formal private and public sector jobs. Although most formally employed

private-sector workers contribute to INFONAVIT, the relatively low maximum loan amount allowed (250,000 pesos) has to this point effectively discouraged moderate- to high-income households from using these loans. Only recently has SHF, through the SOFOLes, begun to target housing finance for self-employed working families. This constitutes a major advance in reaching out to underserved markets.

5. Until recently, publicly mandated agencies have not explicitly targeted financing for the secondary housing market. As recently as 2002, almost all loans were for new construction, but INFONAVIT begun promoting the use of its loans to fund purchases of existing housing. This too constitutes a major departure from past practice and signals strong interest in creating an active secondary housing market.

6. Public resources earmarked for housing are primarily used to fund whole loans, often with subsidized interest rates. Thus, these funds do not leverage additional private debt capital. Under terms from the pension programs and SHF, borrowers can finance between 90 and 100 percent of the value of the house. INFONAVIT and FOVISSSTE also set caps on real interest rates that have historically been below market rates, although more recently market rates have decreased, converging with those of INFONAVIT.

7. Publicly mandated agencies have only recently begun to consider ways to leverage their funds to mobilize private capital sources. A new program, APOYO INFONAVIT, allows borrowers to use funds from their housing sub-accounts as collateral towards mortgages from other lenders, including private banks, and the employer contribution can be applied to pay down the capital or reduce the monthly payment. Again, this is a major step forward in leveraging other funds and tapping new demand.

8. Government programs no longer support rental finance. During the 1950s, public programs from IMSS and ISSSTE offered finance and direct construction of rental housing. In the 1980s, FOVI offered rental finance in conjunction with federal income tax benefits. Since then, however, little purpose-built rental housing has been developed and little financing is available.

9. Very little financing is available for products other than finished housing. FONHAPO and the state OREVIS offer mortgage loans for progressive housing, lots with services, and home improvement, but the amount of capital thus allocated is tiny relative to that allocated by the pension programs and SHF for finished housing.

10. Both SHF and INFONAVIT are currently implementing a variety of programs designed to increase their leverage, improve operations and broaden the population of households that they serve. Specific programs include APOYO INFONAVIT, timely payment guarantees for construction loans, and mortgage insurance and loan securitization by SHF.

In short, the housing finance system in Mexico serves only a small segment of the overall potential market, both in households and in product types, and relies on government-sponsored financial institutions and mandated housing finance revenue streams. However, current programs at some of the major lenders are beginning to address these challenges.

Intergovernmental Relations and Land Use Planning

1. Infrastructure planning and finance is limited and is not well coordinated across levels of government. Responsibility for financing and providing services sometimes belongs to the municipality and sometimes to the state, complicating the development process.

2. Urban service requirements and infrastructure finances for formal settlements vary across jurisdictions and are often the subject of individual negotiations on the project-level between developers and municipal governments.

3. Municipal governments perceive the costs of adding new housing as exceeding the municipal revenues generated, making them unwilling to plan for and accommodate growth. Lack of data on tax revenues and costs borne by different levels of government make it difficult to analyze the impacts of development.

4. Smaller municipal governments do not have the resources to retain professionally trained planning staffs.

5. By law, mayors can only serve one three-year term; the frequent turnover of elected mayors, their administrative staff, and the municipio board results in limited continuity in land use planning and regulations. Hence, the environment within which formal sector developers must operate is constantly shifting, making it harder for them to plan and potentially adding to costs.

6. Pre-existing informal settlements pose major challenges and generate negative externalities. They are often located in areas that are environmentally sensitive or otherwise poorly suited for housing, create difficulties for planned urban growth, lack services that reduce public health risks, and are costly to retrofit with services after the fact.

7. Informal settlements continue to be created because the government has limited control over some lands, poor administration of ejidal land, and lack of affordable formal housing alternatives.

In summary, local land use and infrastructure planning frequently involves individual negotiations, is fragmented among multiple jurisdictions, extends only to formal sector developments, and proceeds without benefit of professional planning or adequate financing and without long-term continuity in public officials in many areas.

MEXICO'S PRINCIPAL HOUSING CHALLENGES

The review of the state of Mexico's housing uncovered a number of fundamental challenges.

1. **Better meeting the housing demands of lowest-wage employees and self-employed working families.** Perhaps Mexico's greatest challenge is to do a far better job in meeting the housing needs of its lowest wage workers, both formal sector and self-employed, than it does now. This is not an easy challenge. For workers earning less than two minimum wages, purchasing a house through the formal housing finance system is

nearly impossible. Even government programs have a difficult time meeting this demand without up-front subsidies. Informal sector workers are not covered by the INFONAVIT. They also often have wages as low or lower than low-wage formal sector workers, and have intermittent incomes that are hard to document and often intentionally underreported to avoid taxation.

2. **Better meeting housing demands in smaller municipalities and rural areas.** The scale of projects necessary for formally built, finished housing to be profitable for developers discourages such development in small towns and rural areas. Furthermore, zoning restrictions and inadequate infrastructure finance often inhibit the formal development and sale of serviced lots for legally titled progressive housing. And many small cities are surrounded by ejidal land that makes planned expansion more difficult.

3. **Facilitating the development of a secondary housing market, including extending mortgage credit to existing housing.** Until very recently, INFONAVIT rules restricted the sale of houses with outstanding mortgage loans, creating an incentive for home sellers and buyers to not formally report transactions (discussed more below). Limited public or private financing exists for purchase of finished existing housing or for home improvement loans, despite evidence of strong demand in both market segments. High transactions costs also discourage reporting of sales and recorded transfers of title. As a result, vital information on sales prices is being lost. This information allows for more reliable estimates of collateral value through the comparable sales methods.

4. **Using government and dedicated pension resources to leverage private capital.** As long as the housing finance system relies primarily on government spending commitments and earmarked pension funds, the capacity to produce housing will be limited by the availability of these resources and subject to the political will to allocate them. Moreover, the prevalence of below-market rate loans has the potential to crowd out private capital. By using public funds to buy down risk, the government can increase the willingness of private capital to enter the market and spread its limited resources more widely.

5. **Creating continuity and professional planning capability at the municipal level.** Assuming that the restrictions on the terms of locally elected officials will not be lifted, efforts need to be made to provide training to municipal staffs that oversee land use planning and development. Measurement of how costs and revenues of new development are shared across local, state and federal governments is also necessary.

6. **Coordinating the development of infrastructure at the local level.** Varying local requirements and bargaining power of municipal governments with developers have resulted in unequal provision of infrastructure. Particularly as urban growth crosses jurisdictions, coordination is necessary to ensure that transportation, water, electrical and other urban service systems are complete and comparable.

7. **Regularizing existing informal settlements and preventing future illegal settlements.** Efforts should be made to speed up the process of regularizing older informal settlements to incorporate them into the general housing stock. At the same time, better planning of urban growth and an attempt to offer formal housing options to currently excluded households are needed to prevent the growth of additional illegal settlements.

8. **Rethinking the role of rental housing and creating rental housing options.** Lack of appropriate financing as well as recent high returns on government securities have led to restricted capital flows to rental housing. In addition, the lack of information on the financial performance of rental properties makes it difficult to monitor or analyze performance of properties in this market segment. However, further development of the rental market would provide more options that give flexibility to households, particularly young households and mobile workers.

9. **Removing disincentives to formal recording of land and secondary housing market sales.** High fees and taxes levied on transactions encourage underreporting of land and home sales. In addition, management of ejidal land allows it to be subdivided and sold illegally, resulting in irregular settlements. Municipal governments have weak capacity to monitor and enforce transactions. A lack of formal reporting inhibits the observation of

prices for land and housing, makes it difficult for owners to sell and realize capital gains, and deprives municipalities of revenues.

10. **Strengthening the financial infrastructure, including improving information (discussed below) and legal process for attaching housing collateral.** Greater macroeconomic stability in the past several years has paved the way for the re-entry of private capital into the housing market. Some progress has also been made at standardizing credit reporting and developing private capital markets. More work is needed to improve the process of asset recovery in the event of loan default, in order to reassure lenders. Cooperation between publicly mandated agencies would facilitate collection and sharing of information, and better targeting of policies.

MEXICO'S PRINCIPAL HOUSING INFORMATION NEEDS

The review of Mexico's housing also revealed 11 information gaps. The following information needs are not fully met.

1. **Municipality specific estimates of new housing supply.** Perhaps the most urgent information need is data on local supply and demand conditions. This would enable developers to decide whether and where to build new housing, lenders to judge the likelihood that new properties will sell, and municipalities to plan for appropriate infrastructure and public services. On the supply side, this requires tracking housing starts and completions, as well as average time to completion, in order to estimate months supply of new housing completed and under construction. Additionally, monitoring length of time on market and vacancy rates would give better estimates of whether excess supply exists. These data are needed at least at the level of the municipality. Ideally, for the largest cities, this information would be available for areas within the municipality. Currently there is no central source tracking housing permits, starts and completions. Information on some cities, however, is already available from Softec and URBIData.

2. **Municipality specific projections of new housing demand.** The second half of measuring local supply-demand conditions is monitoring demand at the municipal level.

Specific data required includes city-level demographic information on job creation and household formation, growth, and mobility—ideally broken down by income level and type of employment (in order to determine eligibility for specific housing finance programs). Gauging home much potential demand can be converted to real effective demand requires tracking flows by city and state of government-allocated capital for housing loans, for without these loans few households can afford to buy developer-built housing. Current data includes periodic surveys by INEGI of household demographics and income, demographic projections by CONAPO, some tracking of remittances by Banco de Mexico, and detailed program data from the major government lenders on geographic allocation of credits. One concern is the accuracy of these data; incomes are likely to be underreported, particularly by households at the top and bottom of the distribution. Moreover, it is important that the demand data be collected so that eligibility for government loan programs can be determined (i.e. number of households in the city with at least one formally employed worker in INFONAVIT's target income market).

3. **Income distribution and income volatility of low and moderate-income self-employed workers.** If an expanded housing finance system is to serve the majority of the population that is currently excluded from formal financial institutions, it will be necessary to better understand the purchasing power of these households, particularly the self-employed. The accuracy concerns about income surveys discussed above are especially relevant for this group. In addition to better tracking of remittances, one means of verifying income estimates is to gather data on expenditures. In addition, to determine volatility of income, information should be gathered on income during various periods of time (i.e. compare hourly rate with weekly, monthly, annual totals). This will not be an easy task, but should be attempted so that self-employed households can be better served.

4. **Comparable housing sales price information.** In a market economy, prices are the mechanism that brings supply and demand into balance. Prices convey a great deal of information about market conditions: if home prices for similar units rise in one city or neighborhood compared to another, that indicates stronger demand, rising incomes, or

constrained supply for the appreciating neighborhood. Prices can also provide insight on specific consumer preferences for different unit sizes, locations, designs, features and amenities. Having timely and easily observable sales price information enables developers and lender to evaluate prospects for investment and households to make informed decisions about preferred locations. These data should be observed from actual transactions as much as possible, and should include information about the property sold (size, age, structure type, condition, and location). Private firms such as Softec currently track housing prices by market segment for a sample of properties in 80 of the largest cities in Mexico. Further dissemination of the data, matched with unit characteristics, would be helpful.

5. **Loan performance information.** In order to encourage private capital investment in mortgage lending, it is necessary for potential lenders to have information on past loan performance, so that they may price risk correctly. Program reports from INFONAVIT and SHF provide data on delinquency and default rates. Such information should be matched to loan terms (i.e. rates, loan-to-value, loan type), characteristics of the collateral property (including geographic location), and borrower characteristics.

6. **Payment and savings records of households and individuals.** A second data need for private lenders is access to payment histories and credit records, available in comparable format. Past payment of long-standing accounts, such as utilities, as well as loans (credit cards, car loans, and mortgages), will enable lenders to assess the credit risk of borrowers and price loans accordingly. Efforts have been made to standardize and improve credit reporting. For households operating outside formal financial institutions, effort should be made to establish methods for assessing payment history and creditworthiness. SOFOLes have shown considerable success in this area; their methods should be studied and replicated.

7. **Value and condition of self-built housing in regularized settlements and older formally built housing.** For households to build wealth, for municipalities to assess their tax base, and to enable a market in existing housing, it is essential to have estimates of the value of the existing stock. Currently the only reliable estimates available are for higher-end, formally built housing. In this report, we present three different estimates of the number of

self-built homes – between 12 and 16 million units on approximately 6 million lots – which reflect the insufficient study and imprecise classification of these units, while estimating their value is still more difficult. Given the limited scope of the self-built and moderately priced formal market, there are likely to be few observable transactions that would provide information on the market value of older self-built and modest formally built housing. With respect to rental properties, data on rent, if observable, could be used to construct income streams and present value estimates of value. Failing those methods, hedonic estimates based on conditions of self-built housing and parameters estimated by modeling similar observable formal transactions might serve to approximate values.

8. **Value of housing-related construction activity.** It is difficult to assess the full value added to the economy by housing-related activity without tracking construction and housing investment. Data should be collected on the value of materials and labor used in housing construction, both in the formal and informal sectors. Also, household expenditures on improvements and additions to existing housing should be monitored. The National Accounts kept by INEGI and the Banco de Mexico have some estimates of construction activity, but not broken out by housing and non-housing sectors. There appears to be no data collected on home improvements, although this is clearly an active market. In fact, sales of building materials to self-built housing are significant.

9. **Distribution of fiscal impacts of new construction by level of government.** In order to provide adequate funds for infrastructure for growth, and to resolve inter-jurisdictional coordination problems over planning for growth, it is important to understand who bears the costs of new development and who reaps the benefits. Data should be collected on the amount and distribution of revenues generated by housing – impact fees, title fees, property taxes, income taxes on rental properties, capital gains from sale – as well as the public expenditures related to housing – direct mortgage lending, provision of urban services, transportation infrastructure, social services (schools, police, fire, medical). Tax information ought to be available from revenue collection agencies (state, local, federal), and it should be possible to assemble expenditures information form various government agencies. Currently there is no centralized source for these data.

10. **Costs of regularizing informal settlements.** To better understand both the negative externalities imposed by informal settlements and the potential cost savings by preventing future settlements, attempts should be made to estimate the cost of past regularizations. Local municipalities should be able to construct accounts of the costs of titling, retrofitting infrastructure, and repairing environmentally damaged land. Currently no data are available on these costs.

11. **Creation of a housing information system.** CONAFOVI has contracted to assemble a National Housing Statistics system, and SHF's database on mortgage information will also be useful for future work. A considerable amount of data described above already exists, but may not be widely available at the appropriate level of detail or frequency, or must be assembled from a variety of government agencies and private firms. Consolidating and integrating all the available data in one location would make it more accessible and more likely to be used.

A VISION FOR THE FUTURE

Mexico is engaged in a process of reforming its housing system to meet the challenges that lay ahead. As Figure 1 below illustrates, collectively, the reforms should expand and diversify the housing finance system, leading to more sources of capital (particularly private capital), more conduits through which capital can flow, and a more diverse range of final housing products. Much attention has been focused on President Fox's goal of 750,000 new houses built per year. More broadly, a transformed housing finance system could finance nearly one million loans per year, for new and existing finished housing, progressive housing development, improvements to existing housing, and the purchase of rental properties for investment.

Figure 1: Mexico's Housing Finance System Transformed

Sources of capital	Conduits of capital	Final products

Today

Pension plans

Government

→ Mortgage loans → Formal payroll workers

→ Construction loans → Developers/builders

→ New finished homes

Household savings → Self-built housing (cash financing)

Future

Government

Pension plans

Private capital

→ Mortgage, construction, home equity loans →

Developers/builders

Lenders

Consumers

→

New finished homes

Existing finished homes

Home improvements

Rental housing

Self-built housing

An important component of the transformation is the ability to tap into the equity already present in Mexico's extensive stock of current housing. As *Figure 2* below shows, currently new housing enters the stock in the top two boxes from formal new construction and the bottom box from self-built housing, while older formally built units can filter down in value (box 1 to box 2) and the regularization of informal settlements is essentially a filtering up (box 4 to box 3). One of the long-run goals should be to eliminate the future development of illegal irregular settlements. By providing legal opportunities for progressive housing and enforcing land use planning, such new development could be channeled directly into the self-built but regularized stock (box 3). Moreover, with greater ability to trade existing housing, households could move up the housing ladder as their income and wealth increase. By legally selling their current home and realizing capital gains on the asset, households could obtain a downpayment on a larger, newer, or otherwise preferable house (or alternately, use the liquid gains to finance current consumption). Currently, without the ability to assess the value of existing housing, to borrow against it or to

resell it, housing wealth cannot be fully realized and households are limited in their upward and geographic mobility.

Figure 2: Market Segmentation of Housing Stock (2003 estimates)[6]

New formal construction →

Households filter up

Titled; serviced; developer-built; privately financed
Units: 3.73 mi
Value: $536.9 bi

New formal construction, downward filtering of units

Titled, serviced, developer-built, publicly financed
Units: 8.45 mi
Value: $366.3 bi

Regularization of irregular settlements

Regularized (possibly titled, retroactively serviced); self-built; cash financing
Units: 4.68 mi
Value: $89.7 bi

New construction of self-built units

Untitled; unserviced; self-built; cash financing
Units: 7.57 mi
Value: $103.0 bi

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[6] The size of each segment is calculated as an aggregation of corresponding traditional market segments, using Softec (2003) data on number and value of units. These are estimates based on limited information and assumptions and should be taken as approximate only. The first tier (titled, serviced, privately financed) includes all units built in the Residential and Residential Plus segments, and 25% of the Middle units. The second tier (titled, publicly financed) includes 75% of Middle units and 50% of Economic units. The third tier (regularized, self-built, cash financing) includes half of Economic units, and units in Social and Minimum segments built more than 20 years ago (average time period needed for regularization), about 15% of these segments. The fourth tier includes newer self-built informal units, about 85% of the Social and Minimum segments. The size of the tiers will vary according to changes in these assumptions.

ACTION AGENDA

The housing sector in Mexico is undergoing a remarkable transformation, aided by favorable economic conditions, innovative leadership of key organizations, and supportive political will. However, Mexico's housing system faces several difficult challenges, including insufficient information to make necessary policy and investment decisions. In order to address these challenges, we recommend that a group of industry experts drawn from the public and private sectors convene a regular series of forums and produce an annual report on the state of Mexico's housing.

Convene Regular Forum and Produce Annual Report

Holding a regular forum, open to policymakers, industry constituents, academic institutions, advocacy organizations and the general public will enable discussion of the critical issues facing the housing sector. Specific purposes of such a forum would be to present new information that fills some of the data gaps listed above; to identify and investigate broader topics of interest or concern; and to engage in frank discussion of critical issues.

Production of an annual report on *The State of Mexico's Housing* would serve several purposes. Although many reports exist that focus on various aspects of Mexico's housing sector, and considerable data can be found in raw format, the particular purpose of this report is to present relevant information in a concise, readable format that is accessible to a broad audience. Essentially, the report should tell a story about how the key segments of the market are working, what issues are particularly salient in the given year, and how conditions have changed over time. This report should present factual information rather than specific policy recommendations; identify the boundaries of common ground that various parties and perspectives can agree upon in terms of baseline information and issues facing the housing sector; place the operation of the housing sector within a larger context of economic, political, demographic and social issues within Mexico; and reinforce the importance of studying and investing in the housing sector in the eyes of private industry, government agencies and the broader public.

Public-Private Partnership to Oversee Action Plan

In 2001, President Vicente Fox created the National Housing Action Council, a body composed of 50 board members, appointed by the President, with expertise and interest in the housing sector. All major organizational stakeholders in the housing industry are represented on the board. Besides the federal and state housing-related government agencies and municipal governments, the board includes developers, homebuilders, private mortgage lenders and academics. The Council members meet quarterly, with the President or his chief of staff to chair the meetings. In addition members are assigned to four working committees that deal with Financing, Productivity, Market Growth and Land and Infrastructure. Research and staff support for the Council are provided by CONAFOVI.

The existence of an umbrella organization drawn from both public and private sectors with such diverse membership and wide-ranging knowledge of the housing sector provides an invaluable resource for the types of sustained conversations and dissemination of information recommended in this report. Any efforts to coordinate the forum and produce an annual report should not duplicate either the structure or the efforts of the Council, but rather build upon the resources and relationships already in place.

We recommend that a *Housing Information Working Group* be assembled from the Council's membership. In order that the forum and report not be purely either a governmental or private industry effort, it is vital that both public and private sectors should be equally responsible for the leadership of this group. To provide the appropriate balance, the National Housing Commissioner (chair of CONAFOVI) and the General Coordinator of CIDOC have agreed to serve as co-chairs of the Housing Information Working Group. The Executive Committee of this working group should be composed of the major publicly-mandated housing institutions (INFONAVIT, SHF, FOVISSSTE, FONHAPO) as well as private industry members (developers and lenders). The group should be of a size conducive to the type of work involved in investigation of relevant issues and the assembly of an annual report. Furthermore, it should have appropriate staff resources and expertise to identify key issues, gather missing information, analyze data and draft the report. The involvement of local consulting firms or academics with

intimate knowledge of the Mexican housing sector and the organizations on the Council is strongly recommended.

A Vision of Housing in Mexico in the Years Ahead

Mexico's housing markets are currently undergoing a series of transformations. During the course of the past year, while the research for this report was in progress, many of the pieces of Mexico's housing system have been evolving and changing shape and direction. Many of the challenges and recommendations highlighted in this report are already underway, particularly in the housing finance system, and to a lesser extent in land use planning. Many of the programmatic reforms are clearly rooted in a similar diagnosis of the situation as was reached by the Joint Center for Housing Studies research team. President Fox expressed a bold vision, with the production of 750,000 new homes by 2006. As ambitious as this goal remains, with continued leadership within key agencies, collaborative efforts across public and private sectors to address existing challenges, and the dissemination of information to make processes more transparent and more efficient, it is conceivable that Mexico's housing system could extend beyond the presidents' goal. In addition to 750,000 new homes, a comprehensive vision for the future encompasses many more families provided with decent housing and services, more wealth accumulated and realized through the sale of housing assets, and communities made more livable by improved planning, better infrastructure and state and municipal services.

INTRODUCTION

Context of *The State of Mexico's Housing 2004* study

There has long been a recognition in Mexico that housing is an important sector of the economy, not only because of the monetary value of the physical assets but because it contributes to the productivity of households and the economic and social well-being of families, neighborhoods and cities. President Vicente Fox's goal, to increase production to 750,000 units per year by 2006, is an historic policy statement identifying housing as a political and economic priority. In response to this challenge, both government and private sector participants in the industry are currently focusing their attention on enhancing industry performance as well as expanding production. Over the last three years, housing production and investment has increased nearly 45 percent, according to CONAFOVI.

Mexico is well positioned at this time to leverage housing more fully. The presence of stable macroeconomic conditions, recent achievements in domestic capital formation, and enhanced trade opportunities with the United States and Canada under NAFTA all contribute to a favorable economic environment for the industry. In the domestic financial markets, better information on market conditions and better lending technologies have resulted in lower costs and improved accuracy of risk management. Political and economic conditions make this time ripe for refocusing and reinvesting in housing.

A careful review of the current state of the market, and establishment of short- and long-term goals, are necessary first steps to undertaking policy changes and investment decisions. The Joint Center for Housing Studies at Harvard University conducted a previous study in 1997 on the state of Mexico's housing markets that analyzed data from the census (INEGI) and other government sources and described the current findings and performance of the industry. More recent reports, cited in Appendix D, presents and analyzes most of the relevant available data, notably Softec's annual *Mexican Housing Overview* and occasional reports by investment banks.

Thus the contribution of this study will be to focus on barriers to the long-term goals of expansion and diversification; areas of particular concern are the need to:

- Mobilize and leverage capital,
- Provide the information infrastructure for efficient allocation of capital,
- Plan development effectively, and
- Support segments of the housing market that are currently underdeveloped

The remainder of this introduction provides some background on the importance of the housing sector to the larger economy and to local communities. Section 1 of Part I reviews the historical evolution of roles played by public programs and private actors in the housing sector and discusses unintended consequences of past interventions. Section 2 presents an overview of housing markets. Section 3 reviews the structure and operations of the housing finance system. Section 4 discusses intergovernmental relations and land use planning. In Part II of the report, Section 1 presents issues and recommendations for future analysis and discussion; Section 2 highlights information gaps; and Section 3 outlines a process of ongoing discussions around these questions and the annual production of a report on the state of the housing sector.

Housing Drives Economic Growth

National and local governments, NGOs, and scholars around the world have long recognized that housing is an industry that drives economic growth, but the full contribution of the sector to the overall economy, the financial and physical well-being of households and communities, as well as the efficient functioning of local labor markets and urban systems, is only beginning to be understood.

Housing is a vehicle of wealth creation. Home equity is a predominant source of household wealth in many countries, especially for lower-income owners who are unlikely to hold other assets. The rise in value of the underlying asset increases the household's net worth; such an increase in wealth may be realized through sale of the house or, with appropriate loan products, households can also access their house wealth by borrowing against equity. For

households to benefit from appreciation of their assets, there must be a mechanism to assess the value of properties, a functioning market to facilitate resale of homes, including secure and insured property titles, and information on prices paid in market transactions should be freely observable. Within Mexico, restrictions on legal resale of properties, including problems with titling and transfer, financing, and high transaction costs, lead to a low volume of legal and observable transactions, which in turn makes it difficult to assess the market value of properties. Tapping into housing wealth also required access to home equity loan products – given the high level of improvements shown in the self-built market there is strong interest in allowing homeowners to borrow against that wealth so that can use the proceeds to reinvest in their existing homes.

Activity in the housing industry has a multiplier effect. Through vertical and horizontal links, the housing industry spurs activity in other economic sectors. It encourages construction, manufacture of building materials, household payments on rents, utilities, maintenance, repair and expansion of existing units, as well as household goods and furnishings. The value of residential construction activity in Mexico is recognized. Measurement probably understates its true value because some related activities are not fully captured, particularly rental income from informal arrangements and expenditures on home improvement and expansion (both in the formal and self-built markets).

Investment in rental housing is a source of household income generation. Owning rental housing can be a source of income for middle-income households. In the United States, for example, residential rental property is a common form of investment. Anecdotal evidence suggests that this is also fairly common source of income in Mexico, including rental of single rooms within family house as well as independent housing units. Building codes and financial tools that allow and encourage investment in rental housing could increase opportunities for income generation among small investors.

Housing provides a location for micro-enterprise. For self-employed persons and entrepreneurs, housing provides a location from which to engage in business. From anecdotal data, such household-run businesses are quite prevalent in Mexico, both in urban and rural areas:

small bodegas, car repair services, hair-cutting services and similar small businesses frequently operate from proprietors' homes. Indeed, some older self-built communities on the urban periphery serve as diverse and integrated commercial centers, allowing households to forego long commutes to large retail centers downtown. Currently household-based micro-enterprise is illegal under housing finance programs, but regulations are apparently moving to allow some mixed-use development.

Funding for housing is closely tied to the larger financial system. Since the majority of households are unable to purchase houses through one-time cash transactions, converting potential demand into effective demand requires that households have access to borrowed capital. The extent and efficiency of financial infrastructure affects the ability of households to purchase homes beyond their current income and savings. Mexico has developed financial institutions whose primary purpose is housing finance, with limited ties to the rest of the financial system, but some are reaching out to capital markets. The current period offers relative macroeconomic stability and increased availability of global capital, thus creating the potential for greater access to capital than previous times.

Safe, clean, adequate housing produces positive externalities by improving the health and well-being of households and communities. Proper housing, including access to potable water, sanitation systems, and other urban services, contributes to improved health and safety of residents. Home environment affects the preparation and performance of children in school and productivity of workers. The potential of housing to generate wealth and income constitutes a major incentive to motivate desired economic behaviors, such as maintaining the physical condition of homes and cleanliness of the neighborhood, and encourages resident efforts to monitor crime in the vicinity.

Planning for the location of new development promotes functioning of urban systems and labor markets. Housing is the predominant land use in urban areas. Thus the location and condition of existing housing, as well as new development, shape the physical patterns of urban growth and decline. Proximity of households to employers and availability of transportation infrastructure affects the operation of urban labor markets. Policy towards older

self-built settlements (i.e. retrofitting on urban services and titling) establishes incentives that influence future housing investment behavior. Some of the larger cities in Mexico, particularly Mexico City, are experiencing difficulties with the distribution of housing, access to jobs and services, and the environmental and time costs of sprawl. Planning for adequate development and enforcement of designated land use can decrease the negative externalities of housing in inappropriate locations.

PART I: MEXICO'S HOUSING SYSTEM

Section 1: HISTORICAL CONTEXT OF HOUSING IN MEXICO

Understanding housing in Mexico today is enhanced by understanding the history of housing policy and housing finance. Prior decisions and experiences with housing mold the present and the future.

1.1 Past Public Policies Shape Today's Environment

Since the Mexican Revolution, housing has been both a policy priority of the government and a constitutional right. Appendix B presents a chronology of significant events and trends in Mexican housing. The 1917 constitution established the obligation of employers to provide housing for their workers, as a reaction to tenant pressure under feudal landholdings during the 19th century.

Most major public policy regarding housing has been established (and often implemented) by federal agencies. The establishment in 2001 of CONAFOVI to coordinate housing programs across several federal agencies and the private sector reiterates the commitment of the federal government to address housing needs and conditions.

Most housing finance programs have been conducted through employers and have targeted particular groups of workers. The first housing assistance program in 1926 was aimed at federal employees through the Directorate of Civil Pensions and Retirement. In 1947, ISSSTE began financing housing for public employees more broadly. The largest program currently in operation, INFONAVIT, was established in 1972 to finance and build housing for formal private-sector workers through mandatory savings by firms and employees.

Support for rental housing has fluctuated greatly over the past century. Rental was the most common form of tenure during the first half of the 20th century, particularly in large cities. Large private houses in the center of Mexico City, built initially for wealthy households then

abandoned as the rich moved farther west and south, were turned into tenements (vecindades) for poorer households. Through the 1950s, most public programs supported rental housing, including some financing and development by IMSS and ISSSTE. In 1942, President Manuel Avila Camacho declared a national rent freeze; the freeze was eventually lifted, although in Mexico City it lasted several decades. During the 1970s, new tenements (nuevas vecindades) were built in older irregular settlements. Little purpose-built rental housing has been developed since then, and nearly all current housing finance programs are aimed at homeownership.

Self-built housing on the urban periphery grew rapidly in the 1950s and 1960s, as rural to urban migration occurred and the cities' population boomed. In the early phase of migration, new migrants would often first rent rooms in the vecindades near the central city, then as family size increased, the household would "buy" and self-build housing on the periphery. In more recent decades, with the decline in rental housing, recent migrants moved directly to the periphery, sometimes living temporarily with family members before building on illegally purchased or unpurchased land.

Public policies of land use and infrastructure investment have affected the centralized growth of the country. BANOBRAS was established in 1934 to finance roads, transportation and urban services, as well as some housing development. Mexico City received the vast majority of infrastructure funding. The capital grew more dominant in the nation's economy until the 1970s, assisted in part by a disproportionate share of public funding for housing and infrastructure. In the 1980s, the three largest cities – Mexico City, Guadalajara and Monterrey – developed congestion problems as a result of continued migration from rural areas. The 100 Cities program, established in 1992 encouraged growth of mid-sized cities as regional hubs to distribute growth away from the three largest metropolitan areas. Land use at the local level has also become increasingly decentralized over the past century. In 1934, President Cardenas redistributed 200,000 km of land from large landowners to ejidal councils to counteract 19th century legacy of concentrated ownership. Constitutional reform in 1983 decentralized authority for land use planning, and financing of land use planning and infrastructure was granted to localities in 1997.

1.2   Private Capital

1.2.1 Private capital responds to macroeconomic and public policy considerations

Since the development and purchase of housing is so closely tied to the larger financial system, the historical evolution of housing markets has naturally reflected fluctuations in the macroeconomy and domestic capital markets. In the 1960s, with an influx of capital from the sale of oil, commercial banks were quite active in domestic lending, including mortgage lending. High rates of inflation in the 1970s discouraged private capital from offering fixed-rate, long-term loans for housing. In 1982, under President José López Portillo, banks were taken over by the federal government and were given required quotas for social interest housing loans. As part of general economic reforms under President Salinas, banks were re-privatized in 1990. At the same time, additional capital entered the Mexican financial markets, partly due to the restructuring of debt under the U.S.-sponsored Brady Plan, as well as wide-ranging privatization reforms, the abatement of inflation and the signing of free-trade agreements such as NAFTA. Banks continued to lend to relatively high-income households, but with the termination of quotas, no longer contributed much for social interest housing. After the 1994-95 crisis, the SOFOLes emerged as new specialized financial institutions dedicated to housing-related lending.

1.2.2 Legacy of 1994-95 peso crisis

The peso crisis in late 1994 effectively drove private capital out of the housing market in Mexico. Due to previous experience with high inflation, most mortgage products were indexed to inflation as well as to the minimum wage (Dual Index Mortgages). As the peso depreciated, interest rates skyrocketed, driving up loan values. At the same time, the collapse of the economy forced many households out of work and decreased household incomes. The combination of escalating payments and decreasing incomes resulted in extremely high rates of default on outstanding loans (around 80 percent). Despite several attempts at restructuring debt, banks' loan portfolios lost nearly 50 percent of their value. In the years immediately after the peso crisis, banks exited from mortgage lending: banks issued 54 percent of mortgage loans by value in 1994 but only 6 percent in 1997. Even now, nearly a decade after the initial event, banks have barely re-entered the housing sector. Moreover, after this negative experience with banks as direct lenders, many borrowers are still wary of applying for bank loans.

1.3   Key Findings

As this section demonstrates, past policy interventions have been undertaken for specific purposes, in response to the macroeconomic and political environments of the time. As those conditions change, however, many of the policies result in unintended consequences that constrain the operation and growth of the market after the fact. In particular, the dominance of public funding programs, with their respective regulations, have imposed constraints on the operation of housing markets that may be a hindrance to entrance of private capital now that the macroeconomic challenges have been addressed.

Public sector involvement in markets is always a difficult balancing act between the need for stimulus and regulation and potential crowding out of capital and entrepreneurship. Nearly all prior housing programs targeted either federal government employees or formal-sector payroll workers. These institutions are not equipped to serve the large remainder of the workforce, particularly low-income households with tenuous relations to the formal labor market. Macroeconomic fluctuations have driven exit of private capital and entry of government in the form of programs designed explicitly to fill the gaps in financing and construction created by exits of the private sector. But now the dominant position of INFONAVIT has the potential to crowd out private lenders that might otherwise re-enter the market since macroeconomic stability and low inflation have been restored.

Public policies have led to underdevelopment of some market segments. The focus of most programs on new construction has diverted attention from needs and opportunities in the much larger existing stock, biased the direction of urban growth on periphery and driven up urban congestion (in largest cities, at least). Since the Revolution, the legal environment has favored tenants over landlords (to correct for highly concentrated land ownership and abuse of landlords' power in 19th century). A combination of legal protections, including periodic rent freezes, and lack of financing has led to an underdeveloped rental market. To the extent that rental housing functions as a substitute for self-built housing, neglect of rental contributes to the problems of illegal settlements.

Much of the housing aid from the federal government has been highly centralized to serve Mexico City (partly as a function of employee eligibility). Decentralization of financing to other cities and rural areas has occurred within past the 15-20 years. Larger cities suffer from congestion costs, and disparities among cities in housing and service quality. Government has directly constructed housing through many programs. Only recently has it shifted to an indirect role by providing financing first to private sector developers and then to homebuyers. The transition from allocated credits to developments to competition for homebuyers has made local demand estimation difficult and led to supply-demand imbalances. INFONAVIT rules to limit multiple loans by households constrain household mobility, or at least recorded market transactions, as well as rental of units. Regularization of informal settlements and retrofitting of infrastructure creates incentives for additional settlements to occur.

1.4   Carpe Diem: Future Directions in Policy

Macroeconomic and political conditions at the moment are favorable for restructuring and market growth. The strong interest in the sector by President Fox's administration, as evidenced by his stated goal of increased production, his establishment of CONAFOVI and the National Housing Council to oversee policy, and the emergence of SHF as a development bank, all indicate the presence of political will for progress.

This study demonstrates commitment by a broad cross-section of public and private organizations to realize the full potential of housing in Mexico. Several of the key public agencies, notably INFONAVIT and SHF, have undertaken recent internal reforms in the direction of a more market-driven policy. Furthermore, despite the continued absence of banks, the SOFOLes have emerged as a substantial segment of lending to serve low- and middle-income households.

The greater availability and mobility of global capital offers new opportunities for investment, the improvement of the domestic financial infrastructure (including credit monitoring) and availability of better information enhances the ability of lenders to manage risk. The time is ripe to rethink the goals and potential of the Mexican housing market.

Section 2: HOUSING AND HOUSING MARKETS

An analysis of housing and housing markets in Mexico reveals a number of strengths and weaknesses. Mexico's population is large, young, and growing in both size and income, portending a strong continued demand for housing. However, the low incomes of many households, difficulty documenting incomes of informal workers, the location of many families in rural locations makes it difficult to serve these households through the current system of formal new housing construction.

The existing stock represents substantial value which has yet to be fully tapped for home improvement, expansion, or other purposes. Yet many existing homes are aging and in need of repair, and the formal rental market and secondary housing markets are underdeveloped. Moreover, lack of detailed information and some recent changes in financing have led to some local imbalances of supply and demand. The most significant challenge in the operation of housing markets continues to be the presence of a large informal sector; the informal sector provides housing for many households but also creates negative externalities.

2.1   Existing Stock

The existing housing stock in Mexico represents a substantial previous investment; there are an estimated 24 million housing units in the country, worth roughly 1.1 trillion pesos (110 billion USD). As shown in *Exhibit 1* below, about two-thirds of the units are in the bottom three market segments but half the value is concentrated in the higher-end houses in the Middle, Residential and Residential Plus segments.

Exhibit 1: Existing Stock Has Substantial Value (2003)

	Price range (000s of pesos)	Avg. price (pesos)	Price (MW equivalents)	No. of units (millions)	Value (billions of pesos)
Minimum	<80	79,000	5.4 MW	1.85	$14.6
Social	80-200	151,000	10.4 MW	7.17	$108.1
Economic	200-380	217,000	14.9 MW	6.46	$139.9
Middle	380-1,000	$568,000	39.0 MW	6.96	$395.2
Residential	1,000-2,000	$1,230,000	84.6 MW	1.18	$145.4
Residential plus	>2,000	$3,628,000	249 MW	0.81	$292.8
Total				24.43	$1095.9

Source: Softec 2003

The substantial value contained in the existing housing stock is not highly leveraged. Only 12.6 percent of the housing stock is currently mortgaged. In fact, only 25 percent has ever been mortgaged. Although the share of homes with financing has increased over the past decade, the overall proportion is still quite low.

The existing housing stock is a substantial asset that could be tapped for greater liquidity. The value of unmortgaged stock is estimated at 960 billion pesos.

Exhibit 2: Stock Not Highly Leveraged (1984-2003)

Year	Total homeowners (millions)	Without financing	With financing	Share financed
1984	9.7	9.1	0.6	6.6%
1989	11.9	11.0	0.8	6.9%
1992	13.7	12.8	0.9	6.6%
1995	15.5	14.0	1.6	10.0%
2003	16.8	14.6	2.2	13.0%

Sources: JCHS 1997, BBVA 2003

Although direct measures of the age of housing units are scarce, as *Exhibit 3* indicates, nearly half the stock is over 20 years old. Age is particularly a concern for homes built out of non-

durable materials, as is common for self-built housing, especially in rural areas. Even homes made of solid materials require maintenance and upgrading after 20 years.

Exhibit 3:   Existing Stock is Aging (1980-2003)
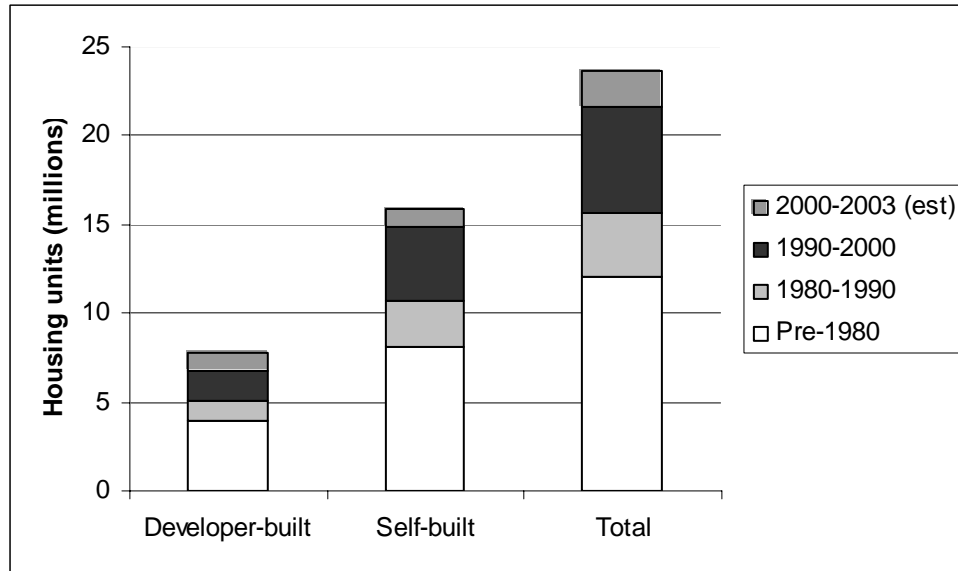
Source: JCHS calculations, data from Softec 2003

Due both to aging and poor construction, a large proportion of the stock is in need of replacement or substantial upgrading. Relatively little information is available on the quality of existing stock. The primary data source is the decennial census, which reports the number and type of rooms in the house, the availability of urban services, and the type of materials used to construct walls, floors and roofs. The data collected do not allow for assessment of the quality of construction or urban services, nor do they provide information on neighborhood conditions. It is particularly difficult to find reliable estimates of the size, location, and condition of self-built units, including those in older, regularized settlements.

The State of Mexico's Housing 1997 report, also written by the Joint Center for Housing Studies, developed a comprehensive index of housing quality, using the data available in the one percent sample of the 1990 Census of Population and Housing. The quality index classifies housing units into four categories: those in need of replacement or significant upgrading, those requiring a moderate amount of upgrading, those in need of minor improvements, and those with no

distinguishable problems. *Appendix D* describes in detail the methodology used to construct this index and the definitions of the four categories.

Exhibit 4 shows the number and proportion of homes falling into each category. In 2000 three million units, or 14 percent of the total stock, were in need of replacement or significant upgrading. Another 5.1 million units, 23 percent of the stock, required moderate upgrading. The distribution of homes by category of condition is virtually unchanged since 1990, as measured by the quality index.

Exhibit 4:   Stock in Need of Upgrading (2000)
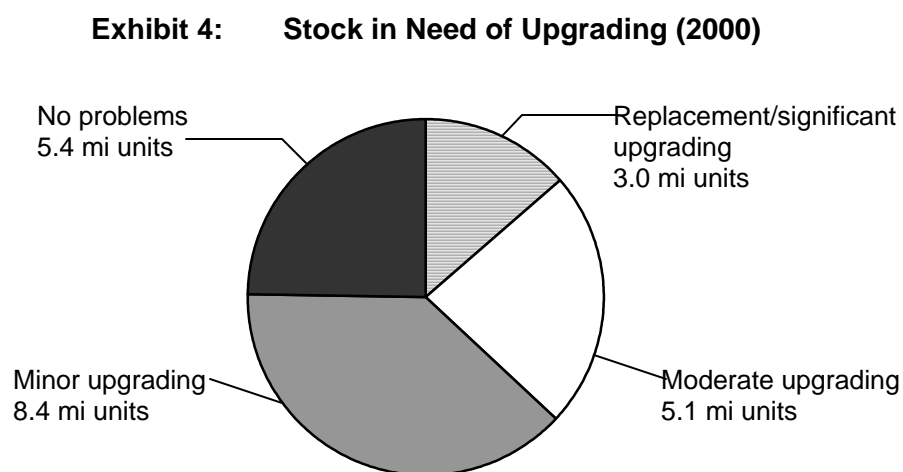
Source: JCHS calculations, data from INEGI 2000. See *Appendix C* for explanation of categories.

As might be expected, given the degree of difference in urbanization and income across states, there is considerable variation by state in the condition of housing stock. In the states of Chiapas, Guerrero and Oaxaca – all heavily rural – over 30 percent of the stock was in need of replacement or significant upgrading. Not surprisingly, housing in the Federal District is in the best condition, with less than one percent needing replacement and over 56 percent reporting no problems. The percentage of stock in each category by state is shown in *Appendix C*.

2.2   Self-Built Housing

Self-built housing forms roughly half of all newly constructed housing in Mexico and nearly two-thirds of the existing stock, yet official reports devote very little attention to analyzing this vital segment of the market. Very little data exists on the self-built market, thus it is difficult to

estimate the exact size of the market, the income range of households served, or the condition of houses in irregular settlements. Self-built housing is developed by a household, typically with the assistance of extended family, lacks clear land title, is not formally connected to urban services, and is financed primarily with cash. The cash is used to buy building materials and to get some technical assistance from people trained in design and construction. The land may be subdivided and sold by legal owners (such as ejidatarios), but without registering the sale or transferring title. Such sales avoid taxes and fees, and certain land is not legally permitted to be sold. Alternatively, households may occupy land and develop it, then negotiate with the owner post facto for sale (or grant from municipal, state or federal governments).

It is important to consider why there is demand for self-built housing, what benefits it provides and what costs it imposes. The demand for self-built housing can be roughly broken down into three submarkets: informal workers, residents of small towns and rural areas, and low-income urban workers. As *Exhibit 5* indicates, roughly two-thirds of all self-built homes are in rural areas.

Exhibit 5:   Self-Built Housing Is Large but Unknown Market Segment (2003)
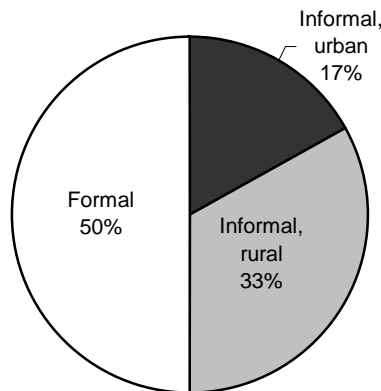
Sources: Softec 2003, World Bank 2002b, SEDESOL 2001

Until the SOFOLes recently began targeting them, low-income informal or self-employed workers were ineligible for formal lending programs. Unless their incomes were high enough to qualify for a bank loan (particularly difficult with the dearth of bank lending in the last 10 years), these households could not purchase a house that required financing. Progressive housing serves

a valuable purpose, in that it allows the household to purchase materials as their income and cash savings permit (purchase of building materials, such as concrete, bricks, or household appliances is a common means of saving, given past inflationary problems). Expansion of loans with underwriting criteria appropriate to informal workers should reduce the demand for self-built housing among this group, particularly for higher-income self-employed households.

Given the economics of developer-built housing, discussed in more detail in *Section 2.6*, it is likely that in rural areas demand will continue to exist for self-built housing. In addition, there is demand for illegally subdivided land – untitled and without access to urban services – because it is cheaper to purchase than serviced, titled lots. *Section 4* of this report addresses some of the issues of land use planning and enforcement that contribute to the market for illegal sale of land.

Self-built housing is an active market segment within Mexico that provides housing for many but, because it is unplanned and often on untitled land, imposes negative externalities on surrounding areas. As the analysis of demand indicates, without the option of self-built housing, many low- and moderate-income households in both rural and urban areas would not be able to afford any housing. However, it would be preferable for self-built housing to occur with appropriate land use planning, on legally titled land, and with greater access to formal financing and urban services.

2.3   Secondary Housing Market

The existing housing stock represents a considerable prior investment in housing; however, lack of financing for existing homes inhibits the secondary housing market. Lack of sales information makes it difficult to value homes. Without accurate mechanisms to determine the value of existing structures, homeowners are unsure of their full wealth and lenders are reluctant to lend. Currently financing obstacles (discussed in Section 3) have restricted legal transactions – anecdotally there is considerable trading of houses, but without transfer of title or mortgage. The new occupant pays the previous owner and holder of the loan monthly mortgage payments, which the official owner then pays to the lender. This lack of transparency inhibits both movement of households and observation of the true functioning of housing markets. An additional area for growth within the existing stock is the availability of financing for expansion

and improvement of homes; given the observed demand for progressive housing, it seems reasonable to assume that many households would choose to invest in improvements that would raise the value of their property and accommodate changes in family size and income.

2.4   Rental Market

The primary emphasis of Mexican housing policy for at least the last 30 years has been homeownership, and with considerable success: nearly 80 percent of households own their own homes, as shown in *Exhibit 6.*   There appears to be strong demand for owner-occupancy. However, rental housing is a lower-cost option and offers flexibility, particularly to younger households and mobile workers. Moreover, owning rental property is another means to generate household income and is a popular form of investment in many countries. Anecdotal evidence suggests that there is demand both to live in rental housing and to own it. But lack of financing, tenant protections, regulatory restrictions and higher returns on investment elsewhere has resulted in an underdevelopment of the rental market.

Exhibit 6:   Formal Rental Market Is Small (2000)

Other
9 %

Rented
13 %

Owned
78 %
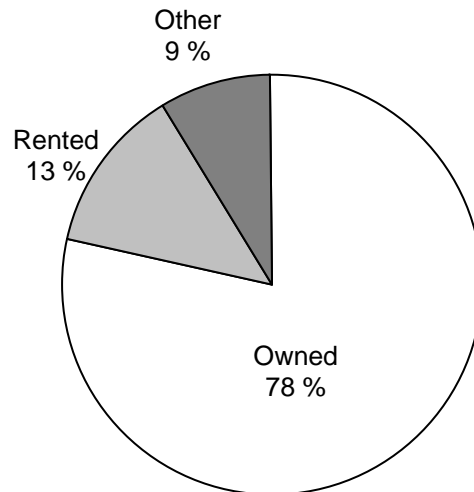
Source: BBVA 2003

Households may prefer to live in rental housing if they anticipate moving such as young workers or those in industries that respond to business cycles. Historical evidence (Ward, Barragan) suggests that in the middle of the 20th century, recent migrants from rural areas to the cities

preferred to live first in rental housing near the city center and then later move to self-built housing on the periphery. Although the rate of urbanization has slowed, there is still movement from rural areas that could be accommodated with low-cost rental housing. Today, many young couples choose to live with family, sometimes delaying marriage, until they can attain a mortgage on a newly constructed unit. An expanded rental market would allow household formation to occur without the development of new units. Demand to own rental housing is largely a function of the return on investment, relative to other types of assets. The high return on government securities (TIIES) recently has made rental housing a relatively unattractive investment, contributing to the decrease in rental share shown in *Exhibit 7*. Moreover, program rules (INFONAVIT) have prohibited renting properties.

Exhibit 7: Share Renting Has Declined (1980-2000)
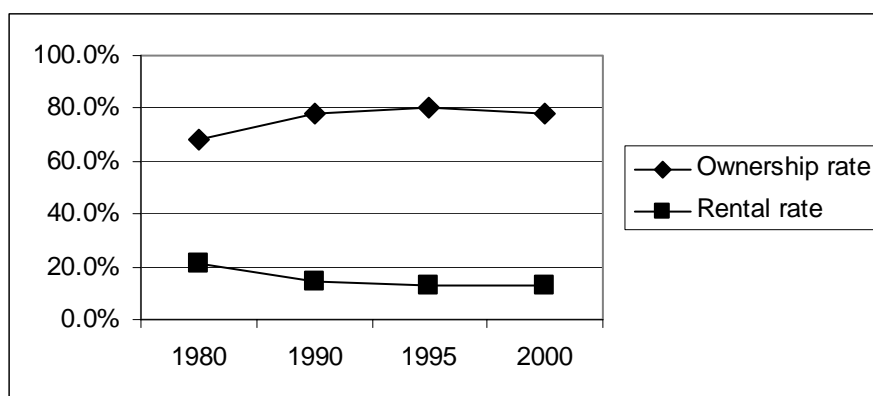
Sources: JCHS 1997, BBVA 2003

The variety of housing types within the rental market, shown in *Exhibit 8*, demonstrates the alternative housing types used for rental. Anecdotal evidence suggests that many households choose to rent a room – indeed, many construct their houses with rooms with the intention of renting them out.

Currently there is little financing available, either for construction of rental housing or for individual purchase of properties; SHF now offers some loans through SOFOLes for purchase of rental. Finally, Mexico's legal environment has traditionally offered strong tenant protections against landlords and occasional rent freezes, both of which make it a less attractive investment for potential landlords.

Exhibit 8:   Variety of Rental Housing Types (2000)
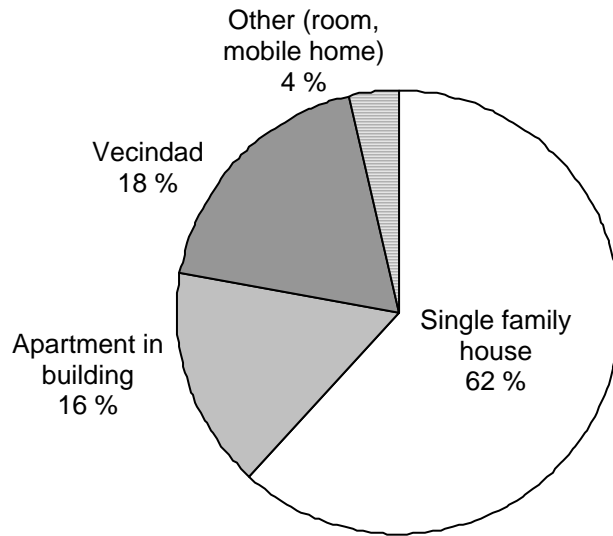
Source: JCHS calculations, data from INEGI 2000

2.5   Demand

Potential demand for housing is essentially driven by geographic distribution and demographic expectations of population growth.   Household income and savings, together with access to finance, convert potential demand into effective demand.

2.5.1 Geographic distribution

For much of the past century, population growth has been concentrated in the four largest cities – Mexico City, Monterrey, Guadalajara and Puebla.   As *Exhibit 9* shows, these four cities still contribute by far the greatest number of new households; the Mexico City metropolitan area alone is expected to grow by over 106,000 households in 2004.   Thus, the lion's share of new housing development will likely occur in these large cities.

Exhibit 9:   Largest Demand in Major Urban Centers (2003)[7]

Region	Value
Mexico City metro	106
Guadalajara, Monterrey and Puebla	76
Central	88
Border	88
North	43
South	49
Gulf	29
Tourist	33
Pacific	26
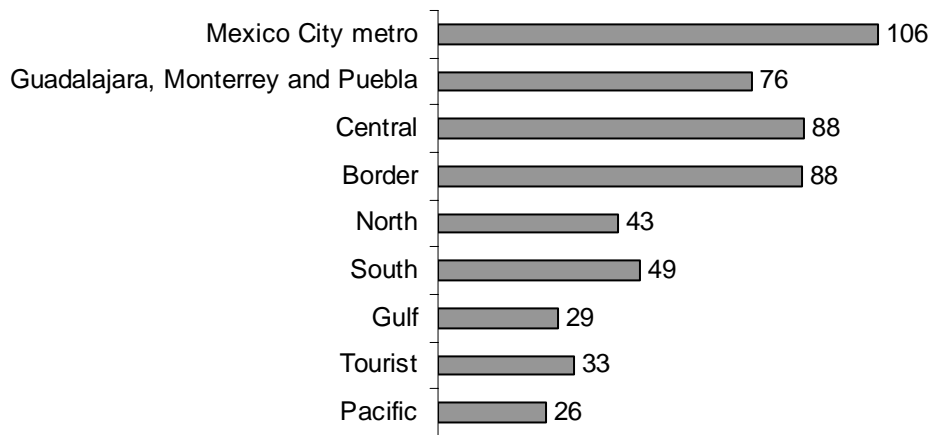
Source: Softec 2003

Some of the mid-sized cities are experiencing fairly rapid rates of growth, particularly those in the Central region, along the U.S.-Mexican border, and along coastal tourist areas.

Exhibit 10:   Rapid Rates of Growth Outside the Big 4 (2003)[8]

Region	Value
Mexico City metro	1.72%
Guadalajara, Monterrey and Puebla	2.56%
Central	2.85%
Border	4.08%
North	2.91%
South	3.23%
Gulf	2.17%
Tourist	3.39%
Pacific	2.94%
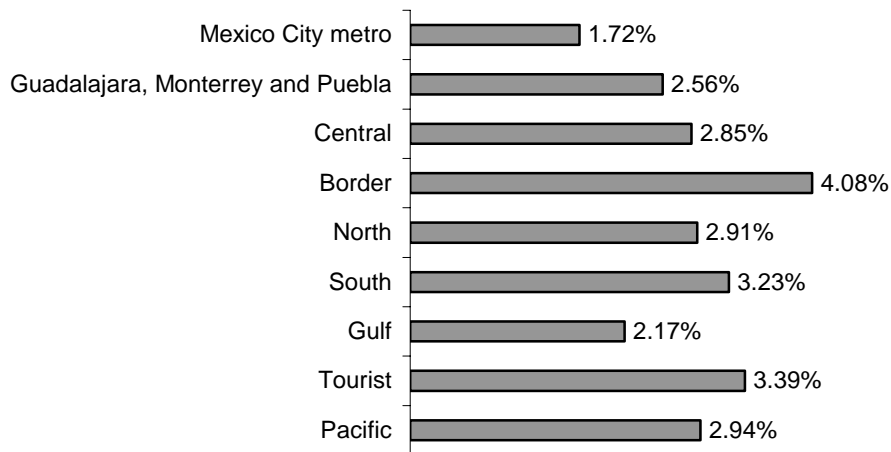
Source: Softec 2003

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[7] Thousands of new households in 80 largest cities. Border includes cities in Baja California, Chihuahua, Coahuila, Sonora and Tamaulipas. Center includes cities in Aguascalientes, Durango, Mexico, Guanajuato, Hidalgo, Michoacan, Queretaro, San Luis Potosi and Zacatecas. Gulf includes cities in Puebla, Tlaxcala and Veracruz. North includes cities in Chihuahua, Coahuila, Sonora and Tamaulipas Pacific includes cities in Colima, Jalisco, Nayarit, Sinaloa and Sonora. South includes cities in Campeche, Chiapas, Guerrero, Morelos, Oaxaca, Quintana Roo, Tabasco and Yucatan. Tourist includes La Paz, Acapulco, Puerto Vallarta, Cuernavaca, Cancun and Mazatlan.
[8] Average annual rate of household growth, 2000-2004.

2.5.2 Demographics

Virtually every study of housing in Mexico stresses the fundamentals of demand: a large and growing population dominated by young people. According to the 2000 Census, Mexico has a population of 97.3 million people in 21.5 million households. Population grew at an annual rate of 1.8 percent from 1990 to 2000. In particular, the relative youth of the population bolsters a strong demand for housing; the median age is 22, and the fastest growing segment of the population over the next 20 years is the 25-50 year age range. New household formation is expected to occur at a rate of 700,000-800,000 per year for the next 20 years, yielding an estimated need for 750,000 new units annually.

Exhibit 11:   Young Population Implies Rapid Household Growth (2001)
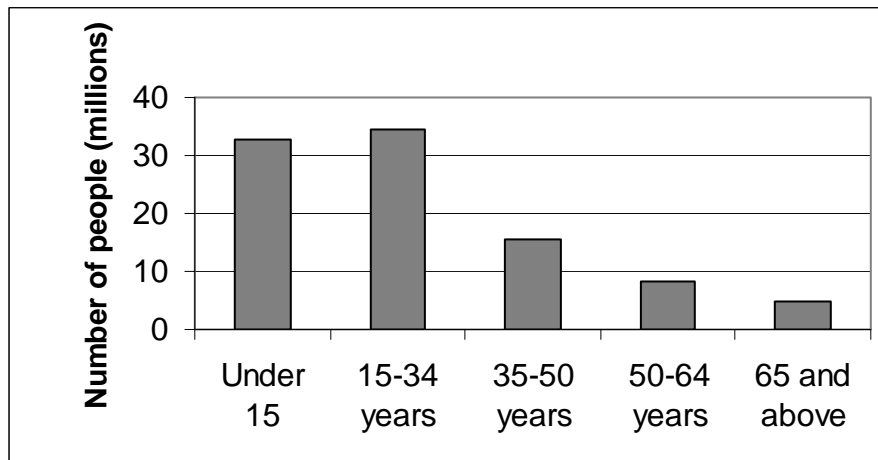
Source: SEDESOL 2001

2.5.3   Income and savings

Although these demographic trends certainly represent strong potential demand for housing, they do not translate directly into effective demand. The current mandatory pension system creates a large pool of savings designated for housing purchase, for eligible workers. Administering loans through the pension plans also alleviates the usual difficulties in documenting income. However, the highly unequal income distribution restricts the actual demand quite a bit. As *Exhibit 12* shows, just over 50 percent of the workers earn less than two minimum salaries annually (under

4,000 USD), a level that is difficult to serve without up-front subsidies.[9] However, since most households have multiple wage earners, only 25 percent of households have household income of less than two minimum wages. The demand is likely to be strongest in the 80 largest cities (population 100,000 or more) that represent the vast majority of the housing market; incomes in these cities are somewhat higher, with over 50 percent of households earning more than $8,500 USD annually. Besides the mandatory pension savings, there is little information available on the extent and location of household savings. Many households do not have relationships with formal financial institutions, thus limiting the extent of savings available for downpayments. Informal savings circles are relatively small; around 100,000 households nationally participate.

Exhibit 12:   Income Distribution Drives Demand (2000)
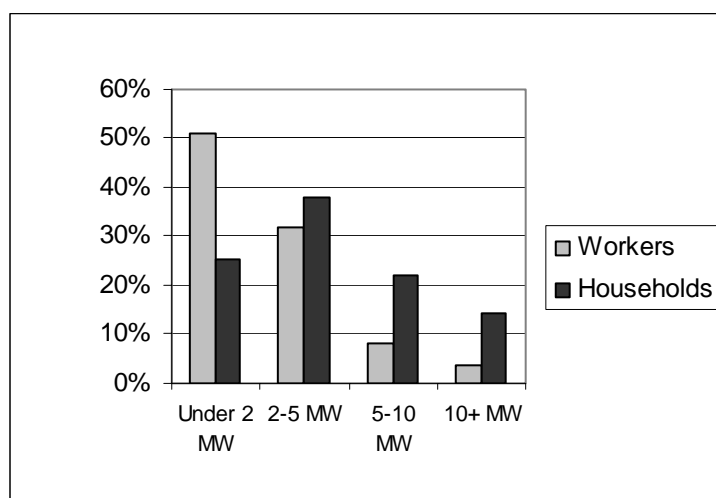
Sources: JCHS calculations, data from INEGI 2000 and SEDESOL 2001

Documentation of informal income, including remittances

One of the key challenges to serving a majority of the Mexican population is the difficulty of accurately assessing income, savings and credit histories.   With approximately half of

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[9] A caveat should be made on reliability of income data; the data presented here is drawn from the 2000 Census of Population and Housing, which is widely used among other reports. However, there is considerable disagreement over the accuracy of this data and the direction of a bias, if one exists. Critiques have been made both that official surveys overestimate and underestimate income of the poor, and that in any case monetary income may not be the best indicator of purchasing power (since it excludes both in-kind payments received and made). Surveys on expenditures indicate that underreporting of income may also be a serious problem at the upper end of the distribution. We offer this data as the most widely cited estimates available, but acknowledge that it may not be entirely accurate.

households employed in informal labor (including self-employment), and often receiving irregular income, documentation of income is not easy. Moreover, a substantial number of households receive remittances from family members working abroad; remittances provide considerable capital that could be tapped for mortgage lending, but are likely to come at irregular intervals and in varying amounts.

2.6   New Construction

Public policies and attention in the housing sector have focused largely on new construction by developers. As might be expected, the distribution of newly constructed homes by price (reflecting unit size and quality) closely mirrors the income distribution. Most developer-built new construction occurs in urban areas.

2.6.1 Price range and physical characteristics

In addition to the 300,000 units that are self-built each year, approximately another 300,000 are built by developers. As *Exhibit 13* shows, nearly all of these are in the Economic market segment (most common for INFONAVIT borrowers), with smaller numbers in the higher Middle, Residential and Residential Plus segments.

Exhibit 13:   New Construction at Middle, Low End (2003)

	Price range (000s of pesos)	Number of new units	Value new units (millions of pesos)
Minimum and rural	<80	326,400	22,800
Social	80-220	80,666	14,400
Economic	210-400	238,686	62,100
Middle	400-1,000	35,564	21,300
Residential	1,000-2,200	5,982	9,000
Residential plus	> 2,200	3,683	14,700
Total		**690,981**	**144,300**

Source: Softec 2003

After steady increases in the size of housing from 1970 to 1990, during the past decade unit size (measured by the number of rooms) appears to have dropped off, as shown in *Exhibit 14* below.

The percentage of minimal, one-room housing units has increased from 10.5 percent to 23.1 percent, while the percent or large homes – six or more rooms – has declined from 11.1 percent to 6.4 percent.

Exhibit 14:   Home Size Decreased in Last Decade (1970-2000)

Number of rooms	1970	1980	1990	2000
One	40.1%	29.9%	10.5%	23.1%
Two	28.9	28.7	23.5	24.2
Three	13.8	17.6	23.2	23.0
Four and five	11.6	14.8	31.2	22.7
Six or more	5.6	4.7	11.1	6.4

Sources: JCHS 1997; JCHS calculations, data from INEGI 2000

2.6.2 Geographic distribution and scale of development

One important consideration for the expansion of housing production is that it takes economies of scale to make formal construction work for lower-cost properties. Including developer-built and self-built, approximately 500,000 new houses per year are built in the 80 largest cities (with populations of 100,000 or more). The remaining 150,000-200,000 units are self-built in small cities and rural areas that are too small and too remote to be profitable for developers. Additionally, 200,000-220,000 of the houses built in urban areas are self-built, generally on the urban periphery. In light of the geographic distribution of new construction, any plans to expand supply must take into account the type of construction that can realistically occur in the areas with population growth. As *Exhibit 15* shows, over one-third of the population, some 35 million people, live in towns too small to attract developer-built housing.

Exhibit 15:   Large Rural Population Inaccessible by Developers (2000)[10]
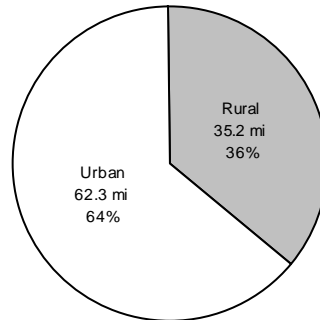
Source: JCHS calculations, data from INEGI 2000

2.7   Balance of Supply and Demand

Recently there have been reports of local imbalances between supply and demand – both bottlenecks in demand, with borrowers unable to obtain financing, and excess supply, demonstrated by longer than expected time on market. Two main factors contribute to these imbalances. Firstly, under the various loan programs prices do not fluctuate much to bring supply and demand into equilibrium since prices are primarily driven by determined price points. Developers have limited ability to lower prices when units sit on the market, both due to costs and the perception that neighbors in already sold units will be unhappy at seeing identical units sold at a lower price. The second factor is INFONAVIT's recent transition from issuing loans to developer-built projects to issuing loans directly to households. In the long run a borrower-oriented loan system should increase flexibility and choice, in the short run developers have had some difficulty adjusting to the absence of guaranteed customers.

2.8   Key Findings

In summary, Mexico's existing housing stock has considerable value but the value is not highly leveraged. Much of the stock is over 20 years old, in poor condition and in need of upgrading. A striking feature of the Mexican housing market is the prevalence of self-built housing, which accounts for nearly half of new construction. Demographics forecast strong continued potential demand for housing, but the low income and savings of much of the population limit its

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[10] Rural is defined as a community with total population under 10,000 inhabitants.

conversion to effective demand. It is highly likely that a segment of the population will need direct subsidies to afford decent housing. Rural areas and small towns are not accessible by developers, and so have few options other than self-built homes. Finally, recent changes in housing finance, combined with gaps in information and price rigidity, have created some local imbalances in supply and demand.

Section 3:   HOUSING FINANCE

Housing is generally the most expensive good purchased by a family; housing is a durable good, purchased infrequently and kept for many years. Generally, home values appreciate. These characteristics make it both possible and highly desirable for families to purchase housing using at least some borrowed capital that is repaid over time, rather than as a one-time cash transaction. The ability of households to borrow funds—and the type of products that they can purchase— depends on the availability of sources and conduits of capital, as well as the legal and financial infrastructure to support loan origination and servicing.   Due to past macroeconomic fluctuations, described in *Section 1.2,* Mexican borrowers today currently rely on publicly mandated agencies and specialized housing lenders for most housing finance, although the trend is moving towards greater involvement of private capital markets.

3.1   Roles of Public and Private Sectors

The relative roles of public and private actors in Mexico's housing finance system have fluctuated over the past half-century. Currently the public sector plays a dominant role in providing financing for all but the highest-income households, and has mobilized considerable resources dedicated to housing, directly through public lenders and indirectly through mandatory contributions of private firms and employees. Banks are a relatively small segment of housing finance, and the negative experience of many borrowers with bank loans during the peso crisis makes them reluctant to approach banks. Recent attempts have been made by several of the major public agencies to access capital markets directly, signaling a greater future involvement of private sources of funds. This will be critical to attain President Fox's goal of expanded production.

3.1.1 Overview of housing finance system

As the figures below indicate, the formal housing finance system is made up of a network of public or government-mandated agencies that lend to formally employed private and public sector workers. Increased investment of private capital sources and a higher degree of leverage are essential to expanding the housing market. Current reforms of the major players are moving in the direction of a more market-driven system, although some additional work will be needed to

provide the information and infrastructure that will induce private capital to invest in mortgage finance. More detailed discussions of each entity's programs and the relationships between agencies follow in this section.

Exhibit 1: Organization of Mexico's Housing Finance System (2003)
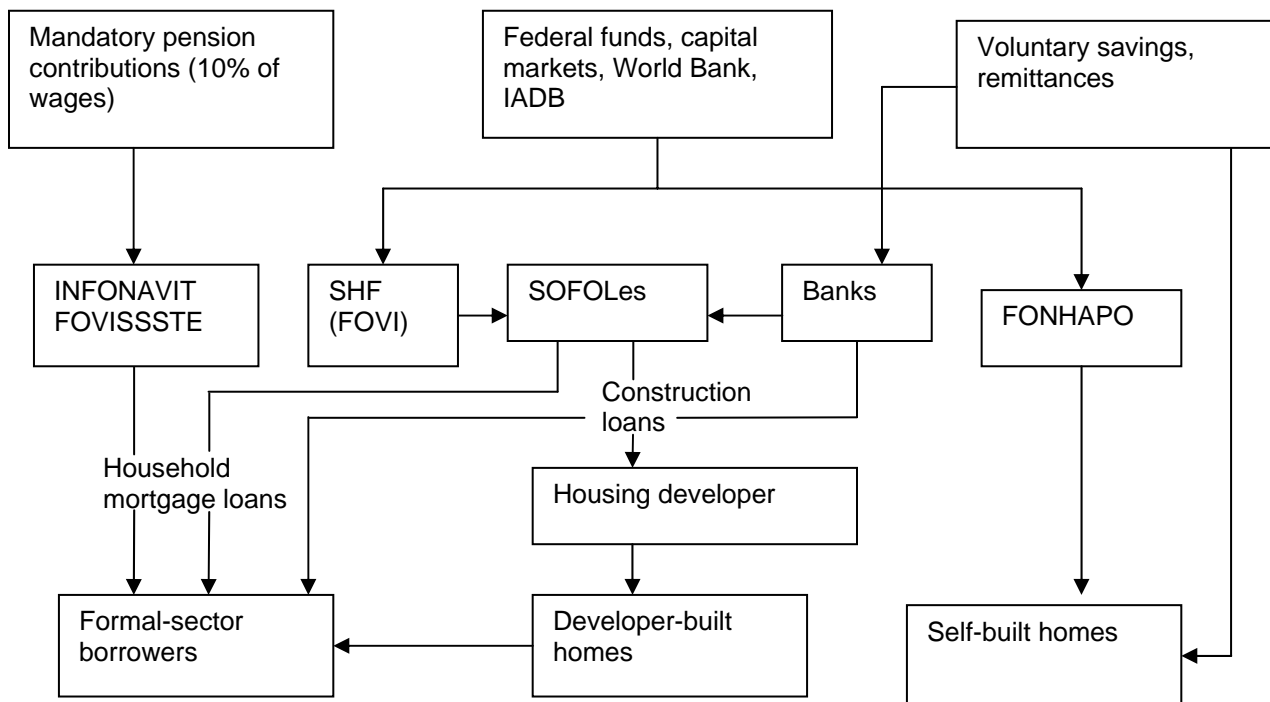
Sources: Bradley 2000, Merrill Lynch 2003

The predominant agencies in Mexico's housing finance system create a spectrum from purely private to purely public, defined by source of capital, agency management and oversight, and borrowers served.

Exhibit 2: Capital Sources from Purely Private to Purely Public (2003)

Private				Public
Banks	INFONAVIT	SHF	FOVISSSTE	FONHAPO
Private capital, management; no subsidy	Private capital; private-public representation on board; publicly mandated mission; interest rate subsidy	Public and private capital; public management	Public capital, management; public-sector borrowers; interest rate subsidy	Public capital, management; up-front subsidy

As *Exhibit 3* shows, by target market and volume of activity, the purely public and publicly mandated institutions dominated mortgage lending in Mexico.

Exhibit 3:   Target Market and Volume of Major Lenders (2003)

	Banks	**INFONAVIT**	**SHF/Sofoles**	**FOVISSSTE**	**FONHAPO**
Eligible market	Middle and upper-income households; up to two million at current interest rates	12 million private sector workers	75 percent of all households; high-end of Sofoles overlap bank customers	1.5 million public sector workers	Lower income households
Volume of activity	15,000 loans in 2002; fewer than 2000/year in previous 5 years	Over 300,000 loans in 2003; portfolio 363 billion pesos	SHF: 52,000 mortgages per year; Sofoles average 5000 mortgages/year	In 2003 more than 60,000 loans; prior years around 20,000.	140,000 loans in 2002; under 10,000/year through 2000; low total value

Sources: Softec 2003, Merrill Lynch 2003

3.1.2 Private capital: banks

Commercial banks, which form the backbone of housing finance in many countries, currently play a quite minor role in Mexican housing finance. As shown in *Exhibit 4,* over the past 30 years banks' involvement in mortgage lending has varied by macroeconomic fluctuations, government requirements and perceived profitability of the sector.

Exhibit 4:   Private Capital Has Fluctuated Over Time (1965-1990)
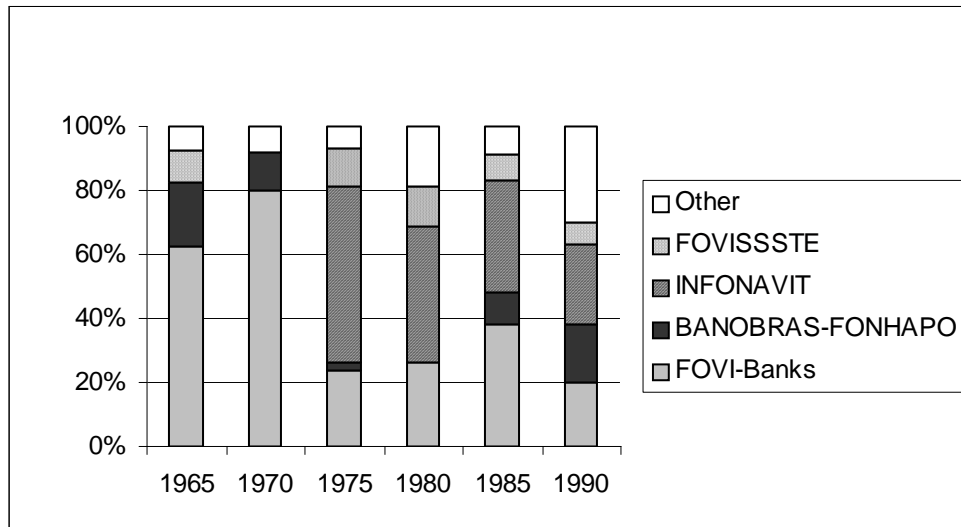
Source: Barragan 1994

Understandably enough, banks virtually exited the mortgage market following the peso crisis and have not really returned in the intervening decade. There is evidence that banks are recently expressing more interest, with offerings of new fixed-rate peso-denominated loans and are planning more aggressive marketing campaigns. In 2003, banks issued over 15,000 loans, a considerable increase over previous years.

Exhibit 5:   Today Banks Offer Few Mortgages (1990-2003)
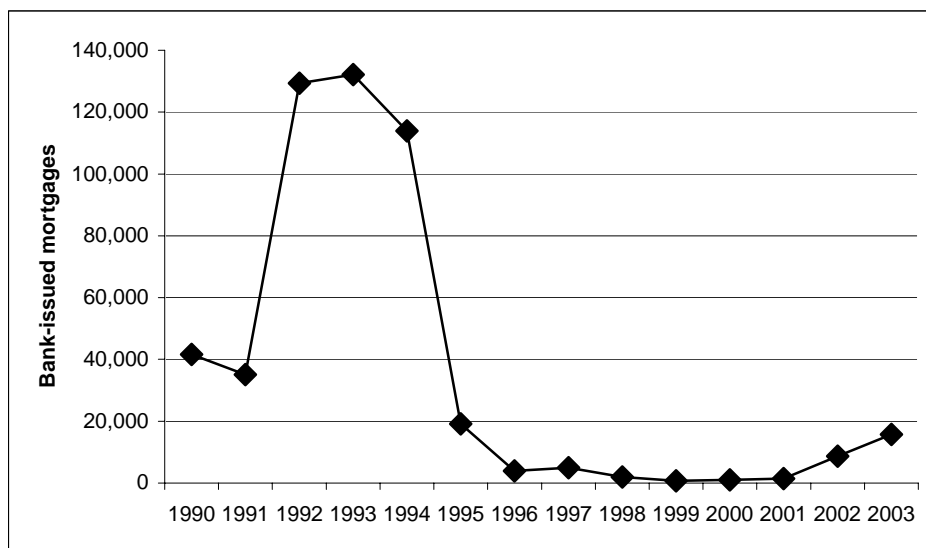
Source: Merrill Lynch 2003, Softec 2003

3.1.3 Publicly mandated private capital: INFONAVIT

By far the largest financer of formally-built housing in Mexico, INFONAVIT (Instituto del Fondo Nacional de la Vivienda para los Trabajadores) was founded in 1972 as a mandatory pension program for formal private sector workers. Funded by a compulsory contribution by employers of five percent of payroll employees' wages, INFONAVIT currently provides over half the loans for developer-built homes (and about three-quarters of the loan value), as shown in *Exhibit 6*. In the 1970s and 1980s, it functioned primarily as a housing developer, but after reforms in 1992, it refocused itself as essentially a mortgage financer, maintaining close relationships with developers of low-income housing. Currently, it holds a portfolio of about $36 billion USD, about two-thirds of outstanding mortgages. The most recent federal budget submitted to Congress estimates that out of the 505 total expected mortgages, in 2004, INFONAVIT will issue 305,000 loans.

Exhibit 6:   INFONAVIT, Public Agencies Dominate Housing-Related Lending (2002)[11]
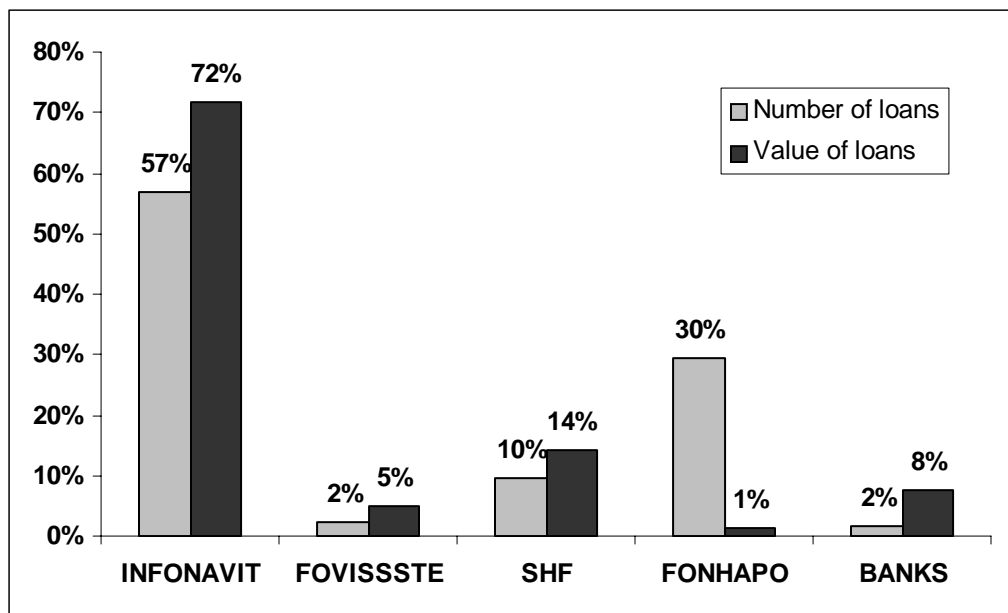
Source: JCHS calculations, data from CONAFOVI 2002

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[11] Loans from OREVIs are excluded, since nearly all of these are small in value and not for finished housing.

New program developments/issues

- **Limitations on borrower base**. For eligible borrowers within the target income range (2-11 minimum salaries), INFONAVIT loans will continue to be the most attractive option, since the interest rate is capped at four to nine percent over increase in the minimum salary. However, the traditional target population is expected to grow at a declining rate as incomes rise, particularly in the largest cities, while contributions are expected to increase. Thus INFONAVIT may have to reconsider its allocation of funds, perhaps raising the ceiling on loans or expanding co-financing programs.

- **Improved portfolio performance**. In the past, INFONAVIT has faced high rates of delinquency but more efficient and aggressive servicing has improved collection rates and reduced delinquency to below 10 percent, as of December 2003. New tactics include a call center that allows borrowers to work out restructured loans. In 2003, 105,000 loans were restructured.

- **Limitations on mobility**. Until very recently, households were only eligible to receive one INFONAVIT loan during their lifetime, with no bridge financing. This rule inhibited mobility, particularly upgrading by current homeowners and generates incentives for borrowers to apply for the maximum possible loan (250,000 pesos for the traditional loan). Altering rules to allow borrowers to apply mortgages to different homes should increase mobility, encourage greater volume of transactions among existing housing units, and decrease incentives for informal house-swaps, under which households change locations but do not officially alter title or mortgages.

- **Geographic distribution of credits**. Given the varied rates of expected growth by state and locality in Mexico, the allocation of housing credits by INFONAVIT has important implications for creating or alleviating bottlenecks in supply. In addition, the caps on loan amounts will affect households differently by location, since the fraction of households with incomes above the target market varies by state. Currently each state receives a preset annual number of housing loans from INFONAVIT, and the allocation varies little from year to year.

- **Housing valuation**. In the past two years, INFONAVIT has moved from a system of direct price controls that determine prices to independent appraisals of house values. Given the low level of observable sales transactions, it is not possible to use sales of

comparable units. Rather, the appraisals must rely primarily on cost basis, which often underestimates the land value component. INFONAVIT and SHF are coordinating with one another to use similar standards; SHF gives guidelines for appraisals and licenses the appraisers. Together the two agencies are building a database of information on the appraised units.

- **Origination criteria**. INFONAVIT has shifted from a system of awarding mortgages by lottery to an open loan system based on qualifying points, with weights given by income, number of dependents, and employment stability, among other factors. The new criteria are intended to be a better approximation of borrowers' creditworthiness.

3.1.4 Public capital: SHF, SOFOLEs, FOVISSSTE, FONHAPO, OREVIS

SHF/FOVI

The second largest lender by loan volume is the Sociedad Hipotecaria Federal (SHF). SHF was chartered in 2001 as a federal development bank and is currently owned by the federal government. Its predecessor, FOVI (Fondo de Operacion y Financiamento a la Vivienda), was established in 1963 as trust fund to channel federal government money and donations and loans from the World Bank to housing. SHF does not have a retail operation, but channels funds through Mexican commercial banks and SOFOLEs, acting as a second-tier bank. Currently SHF offers loans for purchase of new or existing homes by individuals for ownership or rental, land development, commercial infrastructure and home equity (the latter three are small in volume and value). Loans are available in UDIs and more recently pesos, at fixed rates or indexed to the minimum wage. Prior to 2003 SHF also offered construction loans, but has since shifted towards timely payment guarantees. This and other new products that are intended to increase the accessibility of housing are discussed further in Section 3.3.

SHF serves the broadest target market of any agency, able to serve households earning between 2 and 50 minimum salaries (US 3,000 to 75,000). It is currently the only formal lender that offers loan products for which informal workers are eligible (although a very small number of all informal workers obtain mortgages relative to the numbers that pay cash for self-built homes). In its lower range, SHF competes with INFONAVIT, although on less attractive terms, and at its higher end could compete with banks, as well as dominating the income range between those

lenders' target markets. As *Exhibit 7* indicates, interest rates on SHF loans have declined over the past year, making such loans more affordable.

Exhibit 7:   Interest Rates, Monthly Costs of SHF Loans Declining (2003-2004)[12]
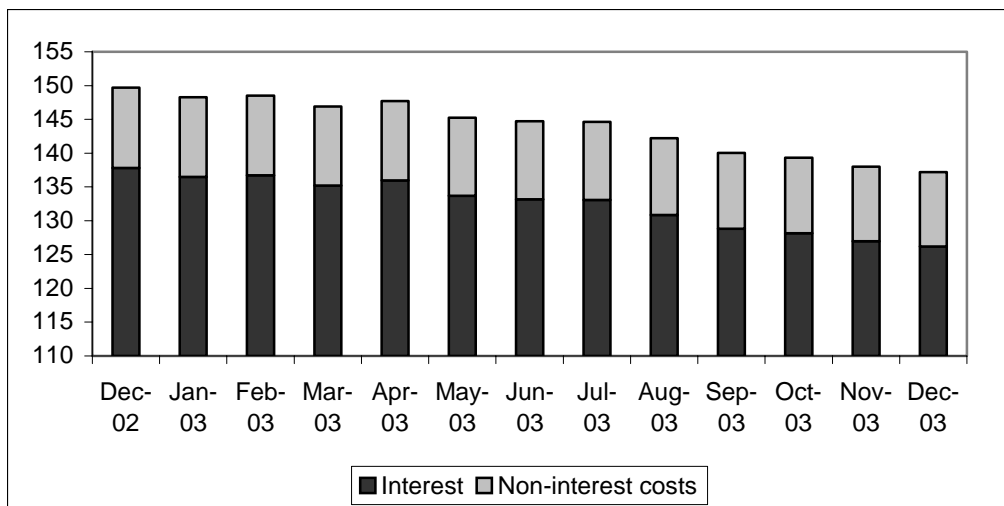
Source: SHF 2004

SOFOLes

Background

The primary institutions that lend capital originating from SHF are the Sociedades Financieras de Objecto Limitado (SOFOLes). The first SOFOLes were authorized in 1994 as non-bank financial institutions that serve as conduits for finance to housing, automobiles and consumer loans or small business. The current portfolio is estimated to be 55 percent in mortgages, 40 percent in auto loans, and 5 percent other. Their creation was due to NAFTA, since they would allow non-bank financial intermediaries from the U.S. and Canada to operate in Mexico. Nearly all of the funds for mortgage lending have originated with SHF, although some SOFOLes have recently attempted to access the capital markets directly. Although they do not have full banking licenses (are not permitted to hold deposits), they are regulated by CNBV, the Ministry of Finance and Banco de Mexico.

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[12] Monthly payment shown per 1000 pesos of credit. Applies to standard loans: 25 year term with 10% downpayment; house prices 70,000-110,000 UDIs. Non-interest costs include loan servicing and insurance by SOFOLes, excludes one-time origination costs.

Exhibit 8:   SOFOLes Lag Banks but Increasing Portfolios (2003)

Banks		Sofoles	
	Value		Value
	(millions of pesos)		(millions of pesos)
BBVA Bancomer	40,669	Hip. Nacional	24,412
Banamex/Citibank	25,991	Hip. Su Casita	14,486
		Credito y Casa	
Bital (HSBC)	11,890	Mexicana	11,789
Banorte	15,489	All others	30,878
Santander Serfin	9,355		
Inverlat	11,078		
Total	115,393	Total	81,574

Sources: CNBV 2003; SHF 2004

The mortgage portfolio of SOFOLes is approaching that of banks in value and exceeds bank loans in number. Since they serve largely as a conduit for funds from SHF, their target market segments coincide with those discussed above: primarily private sector employees with annual incomes greater than 5 minimum salaries and self-employed workers up to 50 minimum salaries. Initially, SOFOLes targeted low-income households but have been raising the ceiling of their market and now compete with the low range of commercial banks. Some analysts have posited that the SOFOLes will be attractive acquisition targets for banks as they seek to enter the mortgage market more aggressively.

Loan origination and servicing

SOFOLes means of loan origination and servicing give them an advantage in two ways among self-employed workers and low-income households who are unconnected with or wary of banks. First, they have developed underwriting criteria appropriate for self-employed or informal workers: households can pay a monthly sum equal to their desired mortgage payment into an account for a designated period of time, demonstrating consistent ability to pay and accumulating funds for a downpayment. Second, in-person delivery of statements, acceptance of payments at on-site locations and outside of traditional business hours offers convenience and greater comfort than traditional servicing mechanisms. In addition, SOFOLes have demonstrated strong ability

to keep down the rate of delinquencies; they use personal delivery of late notices and social pressure to encourage repayment, push for partial payments at frequent intervals, and attempt to keep disputes out of the lengthy and costly legal system of foreclosure. These methods appear to have been successful; SOFOLes boast much lower rates of delinquency than either INFONAVIT or banks.

FOVISSSTE

The second largest public capital source after SHF is FOVISSSTE (Fondo de la Vivienda del Sistema de Seguridad Social de los Trabajadores del Estado). Also established in 1972 and funded by a mandatory 5 percent employer contribution, FOVISSSTE is the public sector equivalent of INFONAVIT and is about one-tenth the size by eligible workforce. Unlike INFONAVIT's current system, loans are allocated by lottery from among eligible workers. Since 2002, the lottery has been altered to prevent disproportionate allocation in central regions, namely Mexico City, which have a predominance of civil servants and have historically enjoyed favorable treatment. In addition, FOVISSSTE has begun using SOFOLes to service its mortgage loans. In 2003, FOVISSSTE issued more than 60,000 loans, a significant increase from between 10,000-15,000 in the previous few years.

Other: FONHAPO, OREVIS, BANOBRAS

Several other public agencies also offer housing-related loans, although most of these programs are small in loan volume and value.

FONHAPO (Fondo de Habitaciones Populares) has served as the primary source of funds for low-income housing within the federal government since its inception in the early 1980s. The agency targets the poorest segment of the population with incomes under 2.5 times minimum wage salaries. Funding for FONHAPO is provided by federal and state tax revenues and international donor agencies. FONHAPO's portfolio decreased steadily from the late 1980s and by 2000 provided fewer than 10,000 loans per year. The last two years have seen renewed lending, with over 140,000 loans in 2002. As *Exhibit 9* shows, FONHAPO tends to lend for home improvement and progressive housing rather than finished housing. Although in 2002

FONHAPO issued nearly 30 percent of housing loans, because the average loan amount is quite small, it contributed only one percent of the value of mortgage lending (shown in *Exhibit 6*).

Exhibit 9:   FONHAPO Lends for Diverse Purposes but Few Loans (2002)

Type of loan	Number of loans	Value of loans (000s of pesos)	Avg. loan amount (pesos)
Home improvement	117,792	290,668	2,468
Progressive housing	25,047	705,423	28,164
Finished housing	85	12,723	149,685
Total	142,924	1,008,814	7,058

 Source: JCHS calculations, data from CONAFOVI 2002

OREVIS

Each of Mexico's 32 states has a state housing finance agency, funded by state revenues. As *Exhibit 10* below shows, the value of loans provided through OREVIS is generally quite small, although in some states these funds make up a significant proportion of the total mortgage lending. The small size of most loans is due to the type of loan: nearly half of the loans made by OREVIS in 2000 were for home improvement and another third were for progressive housing, with the remainder for finished housing and infrastructure.

Exhibit 10:   Importance of OREVI Lending Varies by State (2002)

State	Total mortgage loans	Pct of loans from state agency	Pct of loan value from state agency
OAXACA	27,104	91%	9%
CAMPECHE	17,108	85%	7%
TLAXCALA	10,684	62%	8%
DISTRITO FEDERAL	94,511	60%	27%
CHIAPAS	28,639	57%	6%
PUEBLA	23,761	54%	1%
SAN LUIS POTOSI	29,554	47%	1%
GUERRERO	11,742	41%	1%
VERACRUZ	19,751	37%	0%
MICHOACAN	11,538	36%	1%
HIDALGO	25,277	33%	1%
GUANAJUATO	22,167	26%	7%
SINALOA	19,949	26%	0%
MEXICO	51,296	23%	0%
AGUASCALIENTES	20,251	22%	6%
TAMAULIPAS	28,872	21%	2%
ZACATECAS	28,661	13%	2%
DURANGO	9,583	8%	1%
MORELOS	4,981	7%	0%
NAYARIT	17,936	7%	0%
COAHUILA	16,743	6%	0%
BAJA CALIFORNIA	26,307	2%	0%
QUERETARO	8,613	2%	0%
COLIMA	10,549	1%	0%
YUCATAN	12,874	1%	2%
SONORA	16,233	1%	0%
QUINTANA ROO	9,945	1%	0%
CHIHUAHUA	34,395	0%	0%

Source: JCHS calculations, data from CONAFOVI 2002

BANOBRAS
Banco Hipotecario y de Obras Publicas, is primarily a development bank for infrastructure and public services. It has provided some construction financing. It is not a strong source of mortgage lending, and is unlikely to become one, although it does issue loans for the provision of urban services.

3.2   Major Lenders Serve Narrow Market

The focus of the major lenders—INFONAVIT, SHF, and FOVISSSTE—was primarily the purchase of newly constructed, finished owner-occupied housing. Very little financing has been available for progressive housing, home improvement, secondary housing, and rental housing.

3.2.1 Finished housing

The three largest lenders – INFONAVIT, SHF and FOVISSSTE – have until recently lent almost exclusively for finished housing *(Exhibit 10)*. INFONAVIT plans to expand lending to existing housing in upcoming years.

The size of the self-built sector and anecdotal evidence of home improvement in the Economic segment indicates a strong demand by families to improve and expand their existing homes. Banks have expressed interest in capitalizing on this demand by offering home equity loans, although to date few have been issued.

Exhibit 11:   Major Agencies Lend for Finished Housing (2002)[13]
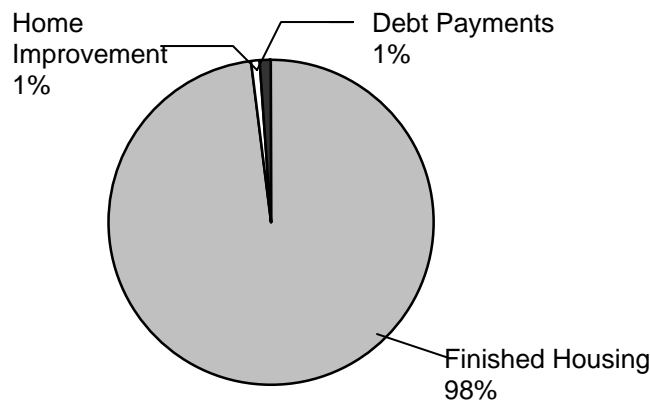
Source: JCHS calculations, data from CONAFOVI 2002

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[13] Loans issued by INFONAVIT, FOVISSSTE and SHF in 2002.

The smaller federal lenders, FONHAPO, BANOBRAS, as well as OREVIS, lend primarily for finished housing rather than for progressive housing, lots with services, or home improvement, as might be expected given their target market of lower income households. However, the number of loans for these purposes is much less than the volume of finished housing loans, as shown in *Exhibit 12* (the trends in value are similar, and the difference by value is even more pronounced).

Exhibit 12:   Finished Housing Dominates Other Programs (1999-2003)
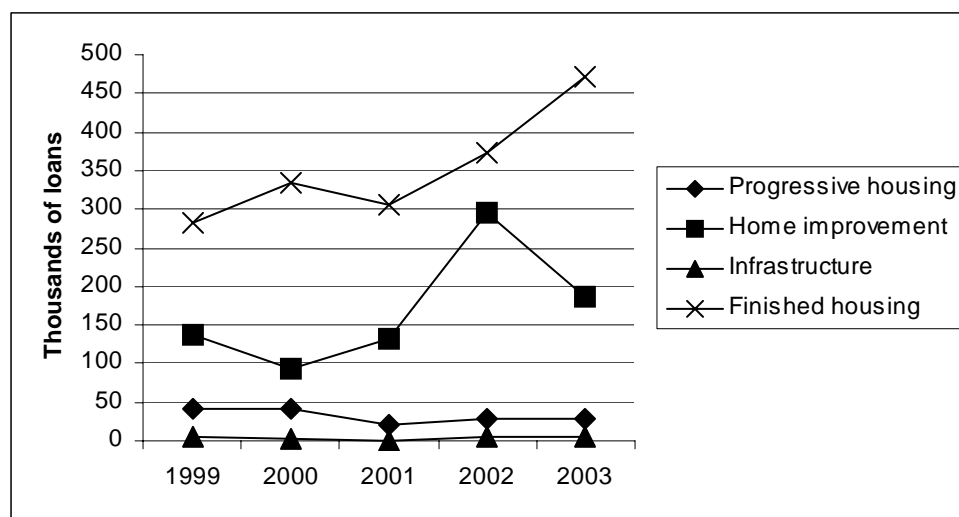
Source: JCHS calculations, data from CONAFOVI 1999-2003

3.2.2 Secondary housing finance

Until recently, publicly mandated agencies have not explicitly targeted much financing for the secondary housing market. Data from CONAFOVI indicates that in 2002, almost all loans were for newly constructed units, as shown in *Exhibit 13*.[14] However, INFONAVIT has begun promoting the secondary housing market to its clients and plans to increase it from about 32,000 homes (10 percent) in 2003 to over 100,000 loans by 2006. This policy faces two key obstacles: clients have typically expressed preferences for newly constructed homes and developers are resistant, fearing that the expansion of the secondary market will reduce funds available for new construction.   INFONAVIT has undertaken a three-pronged promotion strategy: first, encouraging clients to choose their house from within the full market of available homes, both

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[14] INFONAVIT reports having issued about 10% of its loans for existing housing since 1997, although this does not coincide with the data from CONAFOVI. The reason for the discrepancy is not clear.

used and new; second, trying to simplify and support the process of purchasing used housing (when purchasing new units, clients have direct access to developers and agents); and third, disseminating information about homes available for sale through the realtors' association (AMBI). SHF is also promoting the use of its loans for the purchase of existing housing. The increased availability of financing, combined with greater information and client education, is likely to increase activity in the secondary housing market.

Exhibit 13:   Little Financing for Used Homes (2002)
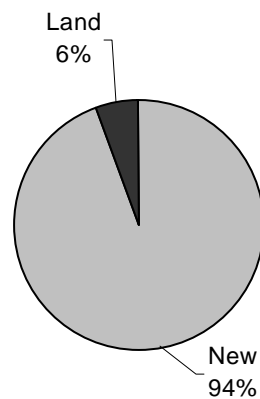
Source: JCHS calculations, data from CONAFOVI 2002

3.2.3 Rental housing

Finance for rental housing is not currently an objective supported by public and publicly mandated agencies. During the 1950s, public programs from IMSS and ISSSTE offered finance and direct construction of rental housing. In the 1908s, FOVI offered rental finance in conjunction with federal tax benefits for income received through rental investment. Since then little purpose-built rental housing has been developed and little financing is available, as shown in *Exhibit 14.*

Exhibit 14:   Rental Finance not Supported (1999-2003)
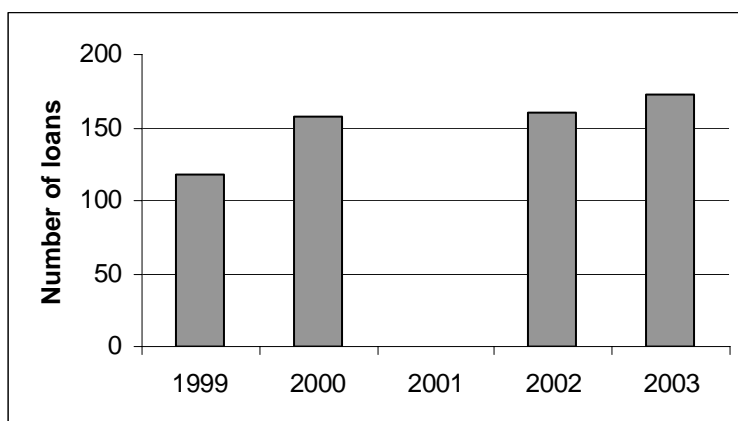
Source: JCHS calculations, data from CONAFOVI 1999-2003

3.3   Extent of Leverage of Public and Publicly Mandated Capital

As shown in *Exhibit 15*, the publicly-mandated agencies provide mostly whole mortgage loans with high loan-to-value ratios, thus resulting in very low levels of leverage. In addition, INFONAVIT, FOVISSSTE and FONHAPO lend at below-market interest rates, which tends to crowd out private capital. By providing the entire amount of the loan through the formal lending programs, the extent of government stimulus is limited to budgetary allocation of the agencies (or amount of contributions to the pension plans).   However, several of the policy developments discussed below, are promising for increasing leverage in the system. In addition, decreasing interest rates as a result of greater macroeconomic stability also has increased the affordability of both bank loans and SHF loans to eligible households. Finally, new legislation making the real interest portion of mortgages deductible from federal income has increased the affordability of mortgages.

Exhibit 15:   Public and Publicly Mandated Funds not Highly Leveraged (2003)

	Interest rate	Maximum loan to value	Term	Points
INFONAVIT	Increase in minimum salary + 4-9 pts	100%	Up to 30 yrs	5%
SHF/Sofols	Inflation + 12 pts	90%	Up to 30 yrs	2.5-4%
Banks	Inflation + 10-14 pts	75%	10-15 yrs	3-4%

Source: Softec 2003

3.3.1 Apoyo INFONAVIT

Apoyo INFONAVIT is a relatively new program from INFONAVIT that allows contributors to use the accumulated savings in their housing sub-accounts as collateral towards a mortgage from another lender. Moreover, the monthly payroll deduction can be applied to that mortgage. So far 12 SOFOLes (using SHF funds) and six banks have agreed to participate. A pilot program for INFONAVIT employees is underway, mostly for borrowers who had already paid off a first INFONAVIT loan, with planned expansion to all eligible contributors. Early response has been quite small—1,200 loans were given in 2002 and 2,200 in 2003. The program should appeal to higher-income contributors who wish to purchase homes above the current maximum loan cap (250,000 pesos), primarily in large cities where housing prices are higher. Additionally, by using the low interest-rate funds and employer contribution as a first loan, the program offers an opportunity to leverage limited funds from INFONAVIT with private capital.

3.3.2 SHF shift away from direct lending

Although to date SHF has served as a source of capital for direct lending, its longer-term mission is to function as a guarantor and insurer of housing-related loans and securities, both construction and individual mortgages. By 2011, SHF will no longer be able to make direct loans and must be financially independent from the federal budget. Below are descriptions of several SHF programs that are reshaping the bank's role.

- **Timely payment guarantee on construction loans**. Since 2003, SHF has offered a timely payment guarantee on construction loans from banks to SOFOLes. The first year of the program, the guarantee covered 100 percent repayment of interest and capital, and issued 57 lines of credit for a total value of 18 billion pesos. In 2004, the amount of the guarantee was reduced to 85 percent of the outstanding loan, with an expected total value of 16.3 billion pesos. SOFOLes pay a premium to SHF to cover the guarantee, and loans covered must meet SHF's underwriting criteria. *Exhibit 16* shows the shift in SHF's construction lending patterns.

Exhibit 16:   Construction Portfolio Shifts Towards Guarantees (2000-2004)
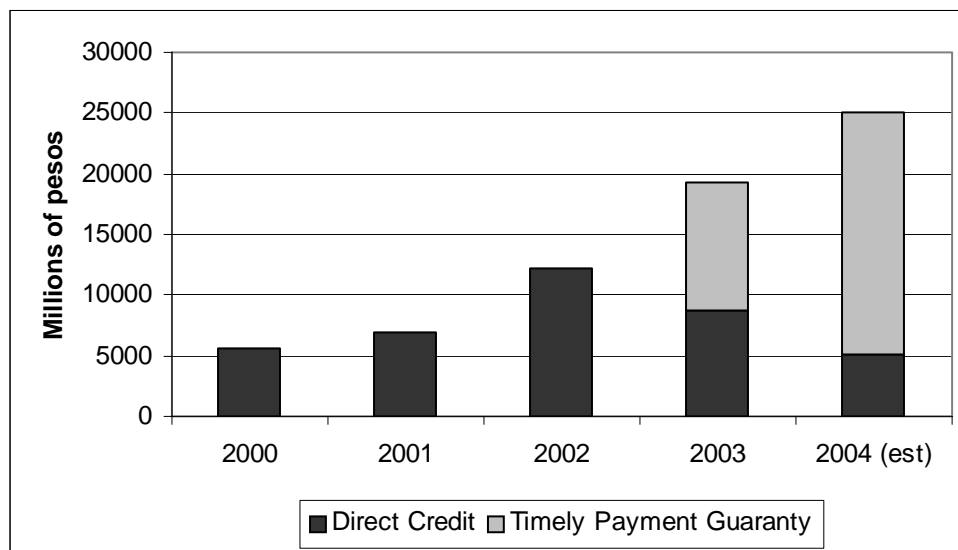
Source: SHF 2004

- **First loss mortgage insurance**. Starting in 2002, SHF offered a first-loss guarantee of up to 25 percent of unpaid balances in the event of borrower default. Beginning in May 2004, the amount of the guarantee will increase to 35 percent of the outstanding mortgage amount. The guarantee is available for SHF-originated loans as well as for bank loans that comply with SHF's criteria.

- **Securitization**. To facilitate securitization, SHF is taking steps to increase standardization and transparency of mortgages. In particular, it is developing a database of Mortgage Information Statistics (FIEH) to include borrower characteristics, housing prices, loan payment history, which would be available to insurers, rating agencies, regulators and potential investors in MBS pools. Further, by offering its guarantee programs only to all loans that meet its underwriting criteria, SHF hopes to encourage standardization of mortgage terms.

- **UDI-Minimum salary payment swap**. To reduce the risk that rapid inflation will reduce borrowers' ability to make mortgage payments on a variable-rate loan, SHF offers a payment swap, whereby borrowers can make monthly payments in multiples of minimum salaries against an UDI-denominated loan. SHF calculates interest on SOFOL loans in UDIs, and any difference between the payment owed and received, by reason of inflation, will be covered by FOVI's Salary Coverage Fund. The swap thus reduces the risk of default and

foreclosure in the case of inflation and seeks to guard against precisely the same imbalance between borrowers' ability to pay and inflation-adjusted mortgages that in the 1994 crisis resulted in massive rates of default and subsequent exit of banks from lending.

3.4   Capital Infrastructure/Information Needed for Risk Assessment and Pricing

Part of private capital's reluctance to enter the mortgage market in the past decade is clearly due to memories of the peso crisis, but part can also be attributed to a lack of the infrastructure and information to assess and price risk accurately. Recent developments have alleviated some of these concerns.

- **Lower inflationary/macroeconomic risk.** Overall management of the Mexican economy has produced drastically lower inflation rates, general economic growth and a greater sense of confidence in investment. One sign of this confidence is the emergence of fixed-rate loan products from banks and SHF, in contrast to the dual-indexed mortgages (to inflation and the minimum wage) of past years.

- **Reduced underwriting risk.** Standardization of credit reporting has improved, thanks to recent passage of the Law of Credit Information Companies. Underwriting borrowers with informal employment and irregular earnings has been a challenge to financial institutions (and not just in Mexico); the innovative approach taken by SOFOLes indicates that this group can be reached, albeit with personally intensive approaches.

- **Security of underlying asset.** Lenders are willing to issue mortgage loans if and only if the loans are secured by a house that can be reclaimed and sold should the borrower default on the loan. Foreclosure and resale in Mexico has been quite difficult, due to an unfavorable legal environment and high transactions costs of judicial procedures. In addition, poor valuation of properties has meant that even if they could be reclaimed, houses were often worth less than the value of the mortgage. Improvements to the foreclosure process, property appraisals, and titling have improved the security of the asset, and should increase willingness of lender to enter the market.

- **Improved public information and transparency.** A new law providing public access to federal information took effect in June 2003. The law improves access to information through two channels: first, federal agencies in the executive branch are required to publish

data on program operations, including budgets, salaries, contracts, internal reports and audit; second, citizens can request additional information. Such requests can be made online through the Libertad de Informacion-Mexico (LIMAC) website. Beyond providing additional information, the new law is intended to promote an atmosphere of greater transparency and build trust in government institutions.

3.5   Key Findings

Financing from strictly private capital sources – banks and capital markets – plays a relatively small role in the Mexican housing finance system, due both to past economic troubles and lack of current information and capital infrastructure. Rather, public and publicly mandated institutions specifically focused on the housing sector dominate mortgage lending. These institutions serve a narrow range of eligible borrowers, offer finance for limited housing product types, and are not highly leveraged. However, a number of current reforms, particularly at INFONAVIT and SHF, are attempting to broaden the market served to include self-employed low-income households, middle-income households; to support a secondary housing market; and to create more leverage and incentives for investment by private capital. These reforms are promising for promoting more market-driven operation of the housing finance sector and serving a larger proportion of the population.

Section 4: INTERGOVERNMENTAL RELATIONS AND LAND USE PLANNING

Land use planning, infrastructure finance and provision, and development of housing is primarily a local issue, and the effectiveness of these activities depends on the availability of financial resources and staff capacity at the local level, as well as the ability of various governmental agencies--departments within single jurisdiction, neighboring localities, as well as local and state governments—to coordinate activities.

4.1 Infrastructure Planning and Finance

4.1.1 Jurisdictional responsibility

As shown in *Exhibit 1*, responsibility for planning and providing various types of infrastructure rests with different levels of government, and the location of responsibility varies across states. The requirements for urban services that accompany new development likewise vary by state and city and often involve a negotiation between the developer and municipal authorities, creating a complicated framework for formal housing development. Conflicts often arise over the responsibility for services (including roads) that cross political jurisdictions, an issue that occurs in most suburbs of large metropolitan areas.

Exhibit 1: Responsibility for Infrastructure Fragmented (2002)[15]

	Estado de Mexico	Nuevo Leon	Guanajuato	Oaxaca
Zoning	PM	PM	PM	PM
Planning	M	M	M	M
Land use	PM	PM	PM	PM
Ecological zones	PM	PM	PM	PM
Protected natural areas	None	None	PM	None
Metropolitan administration	PM	PM	PM	PM
Land tenure regularization	PM	PM	PM	PM
Licenses	M	M	M	M
Expropriation	S	S	S	F
Reg. of private development	M	M	M	M

Source: World Bank 2002b

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[15] PM is Partial Municipal; M is municipal; S is State; F is Federal. "None" indicates that responsibility is not assigned to a particular level of government agency.

4.1.2 Finance for urban services

Relatively little public funding is available for infrastructure and urban services (i.e. water, electricity, gas, sewage disposal). Although some federal funding for infrastructure exists through BANOBRAS, and some of the state housing finance agencies lend for residential urban services, only a tiny fraction of housing related lending is designated for infrastructure, as shown in *Exhibit 2*.

Exhibit 2: Minimal Finance for Residential Infrastructure (2001-2003)

Program type	Value of loans (millions), share of total value					
	2001		**2002**		**2003**	
Infrastructure	268	*0.43%*	170	*0.22%*	269	*0.43%*
Lots with services	128	*0.20%*	170	*0.22%*	128	*0.16%*
Land acquisition	113	*0.18%*	0	*0.00%*	114	*0.15%*
Residential urban services	27	*0.04%*	0	*0.00%*	27	*0.03%*
All housing-related lending[16]	62,742	*100.00%*	77,852	*100.00%*	62,754	*100.00%*

Source: JCHS calculations, data from CONAFOVI 2001-2003

4.1.3 Access to urban services

After steady increases in the proportion of homes with access to basic urban services from 1970 to 1990, over the past decade there have not been significant improvements in the number of homes with adequate services. Around 90 percent of homes have electricity, and over 60 percent have sewerage (public system or septic tank) and either gas or electric fuel for cooking. However, nearly half of homes do not have piped water inside the house; this proportion is essentially unchanged over the past decade.

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[16] Includes residential infrastructure, finished housing, progressive housing, and home improvement

Exhibit 3:   Access to Urban Services Constant in 1990s (1970-2000)
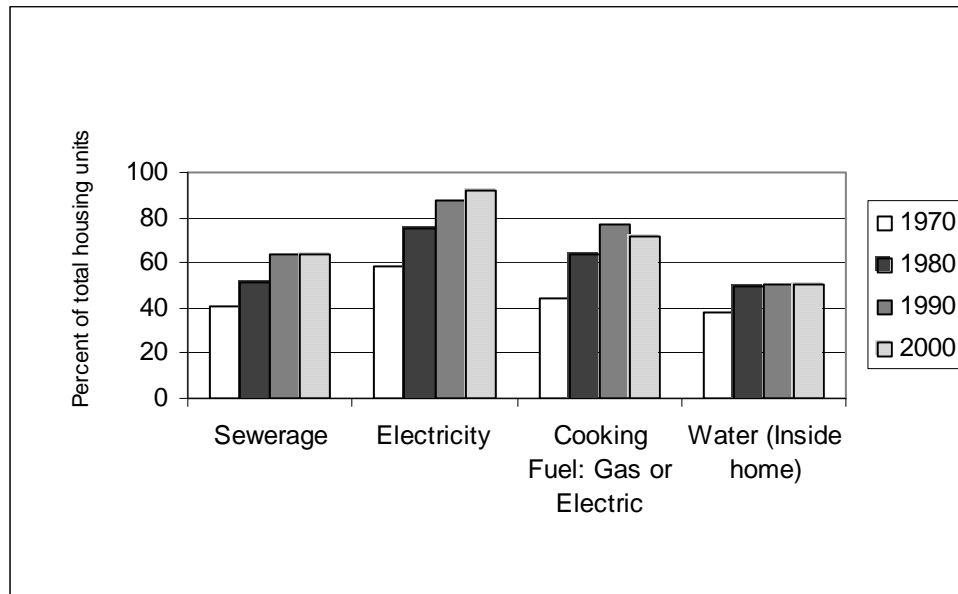
Sources: JCHS 1997; JCHS calculations, data from INEGI 2000

The variation in regulations and funding leads to uneven service provision by localities. Moreover, the system of bargaining between developers and municipal governments exacerbates inequities between affluent and poor communities. Richer cities with strong demand (as measured by higher households' ability and willingness to pay for housing) are able to extract developer concessions, sometimes extending beyond basic urban services to schools, parks, and public facilities. As *Exhibit 4* shows, areas outside the municipal capital lag significantly in their access to basic services.

Exhibit 4:   Urban Services Vary Within Municipality (2002)
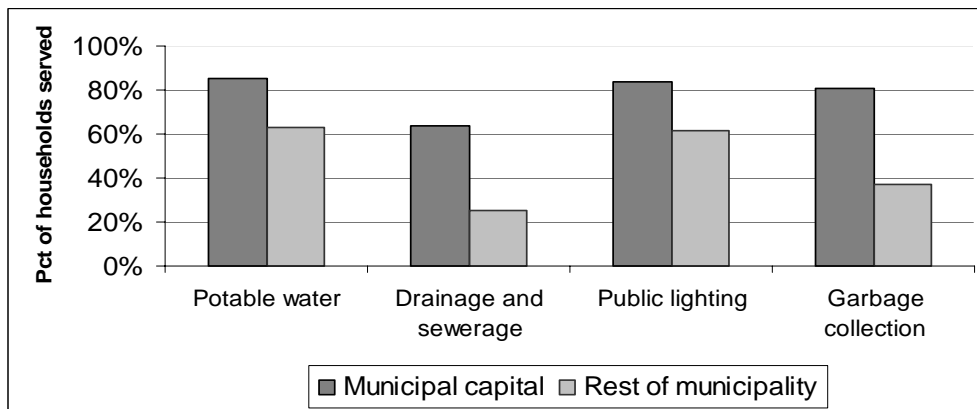
Source: World Bank 2002b

4.2   Challenges to Municipal Governments

4.2.1 Ejidal land system

The ejidal land system was created as part of post-revolutionary agrarian reform in 1915. As initially conceived, the governing ejidatarios had use rights over land but could not legally subdivide or sell the land. Despite this prohibition, a flourishing market in illegal sale of ejidal land existed, enabling large numbers of poor households to build informal settlements. To regularize ownership, the federal government could expropriate ejidal land and grant it to occupants—a practice frequently followed—granting title to long-standing informal settlements. Lack of legal land title was not the only problem created by settlements on ejidal land, however. Frequently such developments were built on land that was unsafe or inappropriate for development (flood plains, environmentally hazardous or sensitive sites).

A significant change in the treatment of ejidal land came in 1992, when President Carlos Salinas de Gortari passed legal reforms that made ejidatarios full owners of their land and allowed them to make legal sales of their land. This change posed opportunities for conversion of some land to urban uses: although the majority of ejidal land is in primarily rural areas, roughly two-thirds of the land surrounding medium and large cities—the urban fringe in the path of expansion—is under ejidal governance. Such peri-urban land has attracted developers of formal housing, many of whom maintain extensive reserves of developable land for future use. Despite these reforms, however, the conversion process from ejidal to urban land is cumbersome, expensive and difficult to execute, and the monopolistic ownership of such land contributes to higher prices. In addition, some parts of ejidal land are not eligible for legal sale, although ejidatarios continue to make illegal sales for informal developments.

4.2.2 Indirect costs of development

Given the limited funding available from state and federal sources for residential infrastructure, municipal governments often perceive the costs of adding new housing as exceeding the municipal revenues generated, making them unwilling to plan for and accommodate growth. This perception encourages the practice of negotiating extractions with developers to provide urban services. Lack of data on tax revenues and costs borne by each level of government makes it difficult to analyze the incidence of development by jurisdiction.

CONAFOVI tracks the indirect costs of development by state insofar as these costs are written into law. The table below shows that although the national average of costs is quite near the target set by CONAFOVI—indirect costs not to exceed four percent of the price of the house—at the state level there are a number of high-cost outliers. Moreover, these data reflect only legally stated costs. It is not uncommon for states or municipalities to require developers to provide additional infrastructure provision or pay other building fees in order to build a particular project. Thus, it is likely that these data actually understate the indirect costs of housing development.

Exhibit 5: Indirect Costs of Development Vary by State (2003)[17]

	Natl. average	High-cost states	
Land	0.34	Morelos	0.68
		Tabasco	0.68
		Sinaloa	0.74
		Hidalgo	1.32
Urban services	1.12	San Luis Potosi	2.50
		Tlaxcala	2.58
		Morelos	3.07
		Aguascalientes	3.76
Building	0.68	Tamauilpas	1.45
		Nuevo Leon	2.47
		Baja California Sur	3.97
Titling	2.40	Morelos	4.16
		Baja California	4.25
		Guerrero	6.22
Total	4.53	Hidalgo	6.78
		Baja California Sur	8.42
		Guerrero	8.61
		Morelos	8.84

Source: CONAFOVI 2003

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[17] Costs shown as percent of house price.

4.2.3 Staff planning capacity

Most municipalities have fairly small staffs, often without much experience or training in overseeing the development process. By law, mayors can only serve one three-year term; the frequent turnover of mayors, their administrative staff, and municipio boards results in limited continuity in land use regulation and regulations within which formal-sector housing developers must operate.

4.3   Informal Settlements

One of the most serious threats to local land use and urban planning is the presence of informal settlements. Municipal governments have weak authority for enforcing legal use of land, and generally face strong political pressure to regularize informal settlements, particularly older ones. Most of the informal settlements occur on publicly owned, ejidal or communal land; private landowners have been fairly successful at protecting their property. Ejidatarios may actually promote informal settlements by illegally subdividing and selling land that cannot be legally sold and developed. Such settlements make it hard to plan the direction and type of urban growth and raise problems for effective infrastructure provision. In addition, problems with clear title hinder future division and resale of land.

The presence of large irregular settlements creates problems for municipalities in planning urban growth, generates political pressure to retrofit services, poses threats to environmentally sensitive areas, and creates fiscal demands on municipal governments. As *Exhibit 6* indicates, given the prevalence of irregular lots, the scope of the problem is quite large. In addition, once older settlements have received grants of land and have been retrofitted with infrastructure, this creates incentives for the development of new settlements, under the expectation that they too will receive such grants. Reducing new development of illegal self-built housing in unplanned settlements would reduce these negative externalities.

Exhibit 6:   Informal Settlements Pose Challenges (2003)

	Number of lots	Resident population
National, irregular	**5.78 million**	**26 million**
Ejidal (urban & rural)	2 million	10-15 million
Urban (ejidal, private, public)	1.14 million	5.7 million
National, regular	**18.22 million**	**78 million**
National, total	**24 million**	**104 million**

Source: Iracheta 2003

4.4   Key Findings

Responsibility for infrastructure planning and finance is fragmented and often unclear. In addition, extremely limited public funds are available for residential infrastructure. This leads to uneven access of households to basic urban services. Limited staff capacity, uncertainty over the costs and benefits of development to local jurisdictions, and weak authority over land use, particularly on the ejidal lands surrounding urban areas, compound the difficulties of adequately planning for and implementing new housing development. As a consequence of these challenges, many municipal governments are reluctant to plan for growth of their cities and instead end up with unplanned irregular settlements in poor locations.

PART II: CHALLENGES AND PLANS FOR THE FUTURE

Section 1: MEXICO'S PRINCIPAL HOUSING CHALLENGES

The past few years have seen a number of significant developments within Mexico's housing markets and housing finance system. In the context of macroeconomic stability and strong leadership within the public and private sectors, innovation over the past several years has been rapid. The general trend towards more market-driven outcomes, increased access to private capital and rising incomes of households offers possibilities for expansion and improvement within the sector. However, the review of the state of Mexico's housing has revealed a number of fundamental challenges that need to be addressed in order to make housing markets more responsive to the needs of Mexican families. Specifically, these challenges are:

1) Better meeting the housing demands of lowest-wage employees and self-employed working families.
2) Better meeting demands in smaller municipalities and rural areas.
3) Facilitating the development of a secondary market.
4) Using government and dedicated pension resources to leverage private capital.
5) Creating continuity and professional planning capability at the municipal level.
6) Coordinating the development of infrastructure at the local level.
7) Regularizing existing informal settlements and reducing future illegal settlements.
8) Rethinking the role of rental housing and creating rental housing options.
9) Removing disincentives to formal land ownership and titling.
10) Strengthening the financial infrastructure, including improving information and legal process for attaching housing capital.

The section below proposes four comprehensive strategies for action to address these challenges.

1.1   Issues and Recommendations

Develop a classification system and accounting framework for the housing stock

For purposes of modeling demand and targeting loan programs, most reports on housing in Mexico divide the market into six segments according to price—minimum, social, economic, middle, residential and residential plus—that correspond roughly to segmentation of the population by income. This framework is quite useful for market decisions, such as forecasting demand and matching borrowers to housing units through publicly mandated finance programs. However, for policy decisions, such as municipal land use planning, tax assessment, and infrastructure planning and investment, this classification has some limitations. In particular, it does not provide criteria by which to evaluate the role of the very large self-built housing sector. The sheer number and variety of terms used to describe this sector—self-built, informal, irregular, illegal—and the debate among policymakers, industry members and academics over which term is most appropriate, indicate the difficulty in determining how to discuss the segment. For purposes of addressing some of the problems created by self-built housing, the following four criteria of housing units are most important:

1) Does the land have clear title and is it registered for tax purposes?
2) Are basic urban services available (through legal connections, billable to resident)?
3) Was the house built primarily with household labor or by a developer?
4) Is the property eligible for a mortgage, and from what capital source?

Based on these four criteria, we propose the following alternative classification system of the housing stock in Mexico.

Exhibit 1: Alternate Classification of Housing Stock (2003 estimates)[18]

New formal
construction

Titled; serviced; developer-built;
privately financed

Units: 3.73 mi
Value: $536.9 bi

Households
filter up

New formal
construction,
downward
filtering of units

Titled, serviced, developer-built, publicly financed

Units: 8.45 mi
Value: $366.3 bi

Regularization of
irregular
settlements

Regularized (possibly titled, retroactively serviced);
self-built; cash financing

Units: 4.68 mi
Value: $89.7 bi

New construction
of self-built units

Untitled; unserviced; self-built; cash financing

Units: 7.57 mi
Value: $103.0 bi

Only by specifically identifying the characteristics that define various segments of the housing stock does it become possible to develop a meaningful accounting of the stock, and thus answer vital policy questions, such as how many units are on untitled land, how much revenue can municipalities expect to raise through property taxes on registered homes, or how much it would it cost to retrofit services to un-served homes.

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[18] The size of each segment is calculated as an aggregation of corresponding traditional market segments, using Softec (2003) data on number and value of units. The first tier (titled, serviced, privately financed) includes all units built in the Residential and Residential Plus segments, and 25% of the Middle segment. The second tier (titled, publicly financed) includes 75% of Middle units and 50% of Economic units. The third tier (regularized, self-built, cash financing) includes half of Economic units, and units in Social and Minimum segments built more than 20 years ago (average time period needed for regularization), about 15% of these segments. The fourth tier includes newer self-built informal units, about 85% of the Social and Minimum segments. The size of the tiers will vary according to changes in these assumptions.

Enable households to tap into housing wealth and improve opportunities for mobility

Both households and housing units can be expected to have a lengthy life span, and neither should remain static throughout the entire life cycle. In particular, families' demand for housing will change with alterations in labor market participation, income and wealth, family size and age. A well-functioning housing market supports the ability of families to move across housing units to fit their demand at any given time. Likewise, housing units may filter down in their desirability as they age and depreciate, or filter upwards as they are renovated or expanded, or their location becomes more or less valuable. Within Mexico's housing stock, homes that are self-built, initially untitled and without services, go through a gradual process of regularization, essentially filtering upwards in the stock. As the classification system above indicates, once this process is complete, such homes could be potential first-ownership opportunities for young or low-income households who cannot afford newer developer-built homes. Similarly, households should be able to upgrade from regularized self-built homes to older, depreciated formally built homes.

The key components of a housing system that encourages filtering of families and units are varied and flexible financial instruments (such as the ability to obtain second mortgages to borrow against equity accumulated), accurate appraisals of the market price of homes, and a transparent, efficient legal system with low transactions costs that clearly defines and enforces property rights. Several of the major lenders are developing financial products that will enable households to tap into housing equity and enhance mobility and improvements in housing appraisals and more observable transactions in the secondary housing market will increase the accuracy of housing valuations. But greater attention to problems of land title and high transactions cost are also necessary to facilitate this process.

Finance self-built housing on titled and serviced lots for low-income households

It is unlikely, given the income distribution of Mexican households and the cost structure of formal development, that all new households will be able to afford developer-built finished housing, even at the most modest price currently available. However, policymakers and citizens have a strong interest in reducing the considerable negative externalities of untitled, un-serviced housing development in unplanned and often inappropriate locations on the urban fringe. Nor

will removing these settlements or enforcing land tenure resolve the problem without simultaneous provision of alternative housing options. Ideally, policies should channel new self-built housing directly into the titled and registered market segment, preferably also with access to urban services.

In order to accomplish this, municipalities need to plan for growth (which will happen inevitably) and allocate sufficient land in locations suitable for residential development. Greater public finance of infrastructure in planned areas of expansion will be necessary if low-income households are to have proper access to urban services. Finally, offering more finance – possibly short-term and in small amounts – for progressive housing will allow those households that cannot afford finished homes to build decent housing that exceeds their current purchasing power (a condition taken for granted by middle- and upper-income households). Expansion of the rental housing market – supported by available financing and legal treatment that balances the claims of tenants and landlords – would also provide low-income households another housing option within the legal framework.

Continue recent efforts to balance roles of public and private capital in the housing finance system

To achieve the levels of housing production for which President Fox has called, the housing finance system must expand beyond the existing public and publicly-mandated agencies into new sources of private capital. The major lending agencies, particularly INFONAVIT and SHF, have already undertaken several reforms that are necessary and effective to develop a more balanced relationship between public and private capital. SHF's programmatic shift away from direct lending towards insuring loans from other sources provides exactly the right basis for its new role—to buy down risk and thereby encourage greater private investment while increasing reach of its own resources. The Apoyo INFONAVIT program is a vital step in creating direct leverage of its funds through a mixed-finance approach. INFONAVIT's focus on providing direct lending at the low end of its target market also allows it to serve a larger number of contributors, while leaving room for private capital to serve the higher-income workers who can afford market-rate loans. Finally, several agencies are collaborating to improve the information and financial infrastructure critical to private investment: SHF's database of loans, INFONAVIT's database of appraised housing units, and CONAFOVI's sponsorship of the Mexican Housing Information

System will provide the information needed to price risk accurately and develop financial instruments to serve more segments of the market. The efforts of all these agencies should be applauded, continued and expanded.

1.2 Future Research Areas

In addition to the gathering and distribution of data, several areas of detailed research would be helpful to inform policy and business decisions.

Housing finance

- Compilation of best practices in mortgage origination and servicing (i.e. what practices result in lowest default rates and the best collection of delinquent accounts)
- How do loans made by SOFOLes to informal workers perform, compared to similar-sized loans made to formal-sector workers? Are there additional risks posed by informal workers and have loans accurately priced these risks?
- How do loans that rely on remittances from family members abroad perform?

Housing markets

- What is the income range of informal workers? What types and amounts of savings do they have?
- Are there effective ways of inducing households to establish relationships with banks or other formal financial institutions? Should micro-credit programs be expanded?
- How accurate are government surveys of income? Does accuracy vary in predictable ways by income level? Can adjustments be made to improve accuracy of measurement?
- What are local, state and regional differences in demand by product type?

Land use planning

- Compilation of best practices of municipal land use planning/enforcement
- Are there successful cases of cities/states reducing the growth of irregular settlements?
- What kinds of training would improve the capacity of municipal governments to facilitate planned growth of their communities?

Section 2: MEXICO'S HOUSING INFORMATION NEEDS

Information is vital because it is the basis for improving risk management and prudent decisions by financial institutions, government agencies, builders, developers and consumers. This study and others like it are limited in the extent of their analysis by the availability and reliability of information. More data is not always better, however; the level of detail, frequency of collection, and manner of presentation will affect how usable and thus how helpful information will be. Below is a summary of the key types of data that are necessary for housing-related decision-making, identification of what is available and what is missing, and recommendations for the most useful type of presentation.

2.1 Survey of Housing Sector Data

- **Municipality specific estimates of new housing supply.** Perhaps the most urgent information need is data on local supply and demand conditions. This would enable developers to decide whether and where to build new housing, lenders to judge the likelihood that new properties will sell, and municipalities to plan for appropriate infrastructure and public services. On the supply side, this requires tracking housing starts and completions, as well as average time to completion, in order to estimate months supply of new housing completed and under construction. Additionally, monitoring length of time on market and vacancy rates would give better estimates of whether excess supply exists. These data are needed at least at the level of the municipality. Ideally, for the largest cities, this information would be available for areas within the municipality. Currently there is no central source tracking housing permits, starts and completions. Information on some cities, however, is already available from Softec and URBIData.

- **Municipality specific projections of new housing demand.** The second half of measuring local supply-demand conditions is monitoring demand at the municipal level. Specific data required includes city-level demographic information on job creation and household formation, growth, and mobility—ideally broken down by income level and type of employment (in order to determine eligibility for specific housing finance programs). Gauging home much potential demand can be converted to real effective demand requires

tracking flows by city and state of government-allocated capital for housing loans, for without these loans few households can afford to buy developer-built housing. Current data includes periodic surveys by INEGI of household demographics and income, demographic projections by CONAPO, some tracking of remittances by Banco de Mexico, and detailed program data from the major government lenders on geographic allocation of credits. One concern is the accuracy of these data; incomes are likely to be underreported, particularly by households at the top and bottom of the distribution. Moreover, it is important that the demand data be collected so that eligibility for government loan programs can be determined (i.e. number of households in the city with at least one formally employed worker in INFONAVIT's target income market).

- **Income distribution and income volatility of low and moderate-income self-employed workers.** If an expanded housing finance system is to serve the majority of the population that is currently excluded from formal financial institutions, it will be necessary to better understand the purchasing power of these households, particularly the self-employed. The accuracy concerns about income surveys discussed above are especially relevant for this group. In addition to better tracking of remittances, one means of verifying income estimates is to gather data on expenditures. In addition, to determine volatility of income, information should be gathered on income during various periods of time (i.e. compare hourly rate with weekly, monthly, annual totals). This will not be an easy task, but should be attempted so that self-employed households can be better served.

- **Comparable housing sales price information.** In a market economy, prices are the mechanism that brings supply and demand into balance. Prices convey a great deal of information about market conditions: if home prices for similar units rise in one city or neighborhood compared to another, that indicates stronger demand, rising incomes, or constrained supply for the appreciating neighborhood. Prices can also provide insight on specific consumer preferences for different unit sizes, locations, designs, features and amenities. Having timely and easily observable sales price information enables developers and lender to evaluate prospects for investment and households to make informed decisions about preferred locations. These data should be observed from actual transactions as much

as possible, and should include information about the property sold (size, age, structure type, condition, and location). Private firms such as Softec currently track housing prices by market segment for a sample of properties in 80 of the largest cities in Mexico. Further dissemination of the data, matched with unit characteristics, would be helpful.

- **Loan performance information.** In order to encourage private capital investment in mortgage lending, it is necessary for potential lenders to have information on past loan performance, so that they may price risk correctly. Program reports from INFONAVIT and SHF provide data on delinquency and default rates. Such information should be matched to loan terms (i.e. rates, loan-to-value, loan type), characteristics of the collateral property (including geographic location), and borrower characteristics.

- **Payment and savings records of households and individuals.** A second data need for private lenders is access to payment histories and credit records, available in comparable format. Past payment of long-standing accounts, such as utilities, as well as loans (credit cards, car loans, and mortgages), will enable lenders to assess the credit risk of borrowers and price loans accordingly. Efforts have been made to standardize and improve credit reporting. For households operating outside formal financial institutions, effort should be made to establish methods for assessing payment history and creditworthiness. SOFOLes have shown considerable success in this area; their methods should be studied and replicated.

- **Value and condition of self-built housing in regularized settlements and older formally built housing.** For households to build wealth, for municipalities to assess their tax base, and to enable a market in existing housing, it is essential to have estimates of the value of the existing stock. Currently the only reliable estimates available are for higher-end, formally-built housing. In this report, we present three different estimates of the number of self-built homes – between 12 and 16 million units on approximately 6 million lots – which reflect the insufficient study and imprecise classification of these units, while estimating their value is still more difficult. Given the limited scope of the self-built and moderately priced formal market, there are likely to be few observable transactions that would provide information on the market value of older self-built and modest formally built housing. With

respect to rental properties, data on rent, if observable, could be used to construct income streams and present value estimates of value. Failing those methods, hedonic estimates based on conditions of self-built housing and parameters estimated by modeling similar observable formal transactions might serve to approximate values.

- **Value of housing-related construction activity.** It is difficult to assess the full value added to the economy by housing-related activity without tracking construction and housing investment. Data should be collected on the value of materials and labor used in housing construction, both in the formal and informal sectors. Also, household expenditures on improvements and additions to existing housing should be monitored. The National Accounts kept by INEGI and the Banco de Mexico have some estimates of construction activity, but not broken out by housing and non-housing sectors. There appears to be no data collected on home improvements, although this is clearly an active market. In fact, sales of building materials to self-built housing are significant.

- **Distribution of fiscal impacts of new construction by level of government.** In order to provide adequate funds for infrastructure for growth, and to resolve inter-jurisdictional coordination problems over planning for growth, it is important to understand who bears the costs of new development and who reaps the benefits. Data should be collected on the amount and distribution of revenues generated by housing – impact fees, title fees, property taxes, income taxes on rental properties, capital gains from sale – as well as the public expenditures related to housing – direct mortgage lending, provision of urban services, transportation infrastructure, social services (schools, police, fire, medical). Tax information ought to be available from revenue collection agencies (state, local, federal), and it should be possible to assemble expenditures information form various government agencies. Currently there is no centralized source for these data.

- **Costs of regularizing informal settlements.** To better understand both the negative externalities imposed by informal settlements and the potential cost savings by preventing future settlements, attempts should be made to estimate the cost of past regularizations. Local municipalities should be able to construct accounts of the costs of titling, retrofitting

infrastructure, and repairing environmentally damaged land. Currently no data are available on these costs.

2.2   Integration of *Sistema Mexicana Informacion de Vivienda*

Recognizing the need not only for more data, but for the integration of various separate data sources into a manageable and accessible format, CONAFOVI is leading a sector-wide effort to assemble a Mexican Housing Information System, involving the major public and private sector groups involved in the housing industry, under contract to the consulting firm Structura. Data collection has been occurring since October 2003, gathering and coordinating information on a variety of topics including construction activity, housing sales, land ownership and availability, as well as demographic characteristics, income, and physical characteristics of housing. Some of the information included in the database is drawn from publicly available sources, such as INEGI and CONAPO, or from the administrative records of the publicly mandated housing agencies (INFONAVIT, SHF, FOVISSSTE and FONHAPO). Additional data has been obtained through the cooperation of industry associations, including CANADEVI, CEMIC, the associations of Notaries', SOFOLes and bankers. The database is scheduled to be complete and ready for use by spring 2004. The availability of such a broad range of data, provided in an easily accessible format, should be of great use to policymakers and industry members.[19] The discussion in the previous section about uses of data may be useful in suggesting what particular pieces of information can help answer specific questions. The following section presents additional suggestions for how the new database can be used in developing an annual report on *The State of Mexico's Housing*.

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[19] Since some of the data included is proprietary and has been purchased specifically for this database, access to the system will be restricted to designated users, generally members of contributing organizations and other groups affiliated with the National Housing Council.

Section 3:   ACTION AGENDA

The following is an action plan for creating *The State of the Mexico's Housing* report on an ongoing basis.

3.1   Actions to Be Taken

The housing sector in Mexico is undergoing a remarkable transformation, aided by favorable economic conditions, innovative leadership of key organizations, and supportive political will. However, as the previous two sections illustrate, Mexico's housing system faces several difficult challenges, including a lack of sufficient information to make necessary policy and investment decisions. In order to address these challenges, we recommend that a group of industry experts drawn from the public and private sector convene a regular series of forums and produce an annual report on the state of Mexico's housing.

Convene regular forum

Holding a regular forum, open to policymakers, industry constituents, academic institutions, advocacy organizations and the general public will enable discussion of the critical issues facing the housing sector. Specific purposes of such a forum might be to present new information that fills some of the data gaps listed in Section 2; to identify and investigate broader topics of interest or concern; and to engage in frank discussion of critical issues, such as those identified in the previous Section 1.

Produce annual report

Production of an annual report on *The State of Mexico's Housing* would serve several purposes. Although many reports exist that focus on various aspects of Mexico's housing sector, and considerable data can be found in raw format, the particular purpose of this report is to present relevant information in a concise, readable format that is accessible to a broad audience. Essentially, the report should tell a story about how the key segments of the market are working, what issues are particularly salient in the given year, and how conditions have changed over time.   This report should present factual information rather than specific policy recommendations; identify the boundaries of common ground that various parties and

perspectives can agree upon in terms of baseline information and issues facing the housing sector; place the operation of the housing sector within a larger context of economic, political, demographic and social issues within Mexico; and reinforce the importance of studying and investing in the housing sector in the eyes of private industry, government agencies and the broader public.

3.2   Public-Private Partnership to Oversee Action Plan

In 2001, President Vicente Fox created the National Housing Action Council, a body composed of 50 board members, appointed by the president, with expertise and interest in the housing sector. All major organizational stakeholders in the housing industry are represented on the board; besides the federal and state housing-related government agencies and municipal governments, the board includes developers, homebuilders, private mortgage lenders and academics. The Council members meet quarterly, with the president or his chief of staff to chair the meetings. In addition members are assigned to four working committees which deal with Financing, Productivity, Market Growth and Land and Infrastructure. Research and staff support for the Council are provided by CONAFOVI.

The existence of an umbrella organization drawn from both public and private sectors with such diverse membership and wide-ranging knowledge of the housing sector provides an invaluable resource for the types of sustained conversations and dissemination of information recommended in this report. Any efforts to coordinate the forum and produce an annual report should not duplicate either the structure or the efforts of the Council, but rather build upon the resources and relationships already in place.

We recommend a *Housing Information Working Group* be assembled from the Council's membership. In order that the forum and report not be viewed purely as governmental efforts, it is vital that both public and private sectors should be equally responsible for the leadership of this group. To provide the appropriate balance, the Commissioner of CONAFOVI and General Coordinator of CIDOC agreed to serve as co-chairs of the Housing Information Working Group. The executive committee should be composed of the major publicly mandated agencies

(INFONAVIT, SHF, FOVISSSTE, FONHAPO) as well as private industry members (developers and lenders). The group should be of a size conducive to the type of work involved in investigation of relevant issues and the assembly of an annual report and should have appropriate staff resources and expertise to identify key issues, gather missing information, analyze data and draft the report. The involvement of local consulting firms or academics with intimate knowledge of the Mexican housing sector and the organizations on the Council is strongly recommended.

3.3   A Vision of Housing in Mexico in the Years Ahead

Mexico's housing markets is in the process of active reform. During the course of the past year, while the research for this report was in progress, many of the pieces of Mexico's housing system have been evolving and changing shape and direction. Many of the challenges and recommendations highlighted in this report are already underway, particularly in the housing finance system, and to a lesser extent in land use planning. Many of the programmatic reforms are clearly rooted in a similar diagnosis of the situation as was reached by the Joint Center for Housing Studies research team. President Fox expressed a bold vision, with the production of 750,000 new homes by 2006. As ambitious as this goal remains, with continued leadership within key agencies, collaborative efforts across public and private sectors to address existing challenges, and the dissemination of information to make processes more transparent and more efficient, it is conceivable that Mexico's housing system could extend beyond the presidents' goal. In addition to 750,000 new homes, a comprehensive vision for the future encompasses many more families provided with decent housing and services, more wealth accumulated and realized through the sale of housing assets, and communities made more livable by improved planning, better infrastructure and state and municipal services.

APPENDIX A: Abbreviations

BANOBRAS	Banco Nacional de Obras y Servicios Públicos S.N.C
CIDOC	Centro de Investigación y Documentación de la Casa
CIHAC	Centro Impulsor de la Construcción y la Habitación, A.C.
CNBV	Comisión Nacional Bancaria y de Valores
CONAFOVI	Comisión Nacional de Fomento a la Vivienda
CONAPO	Consejo Nacional de Población
CONAVI	Consejo Nacional de Vivienda
ENIGH	Encuesta Nacional de Ingresos y Gastos de los Hogares
FONHAPO	Fideicomiso Fondo Nacional de Habitaciones Populares
FOVI	Fondo de Operación y Financiamiento Bancario a la Vivienda
FOVISSSTE	Fondo de Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado
IMSS	Instituto Mexicano de Seguridad Social
INEGI	Instituto Nacional de Estadística, Geografía e Informática
INFONAVIT	Instituto del Fondo Nacional de la Vivienda para los Trabajadores
ISSSTE	Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado
ONAVIS	Organismos Nacionales de Vivienda
OREVIS	Organismos Estatales de Vivienda
PROVIVAC	Federación Nacional de Promotores Industriales de Vivienda, A.C.
SEDESOL	Secretaria de Desarrollo Social
SHCP	Secretaria de Hacienda y Credito Público
SHF	Sociedad Hipotecaria Federal
SOFOLES	Sociedades Financieras de Objeto Limitado
PROSAVI	Programa Especial de Crédito y Subsidios para la Vivienda
UDI	Unidad de Inversión
VivAh	Programa de Ahorro y Subsidios para la Vivienda Progresiva

APPENDIX B: Chronology of Historical Events and Trends

Broad rights and policy statements

1917	Obligation of employers to provide housing for workers written into Mexican constitution; reaction to tenant (peasant?) pressure in Revolution
1948	Tenants' rights incorporated into civil code
2001	CONAFOVI established to coordinate housing programs across several branches of federal government and private sector

Homeownership policies and programs/Formal housing finance

1926	Government starts financing federal employees' housing through Directorate of Civil Pensions and Retirement
1934	BANOBRAS established; finances housing (mostly in Mexico City)
1947	ISSSTE began financing public employees' housing
1972	INFONAVIT established; financed/built housing for formal private-sector workers
1981	FONHAPO established; financed and build social housing for low-income households; national in scope
1992	INFONAVIT reforms shifted role from builder to financer
Late 1990s	SHF established as successor to FOVI

Rental housing policies and programs

1900-50	Rental predominant throughout early 20th century, especially in cities
1942	President Manuel Avila Camacho declared national rent freeze
1950	36 percent of households nationally rented, 75 percent of houses Mexico City were rented
1950s	IMSS and ISSSTE financed and built some urban rental housing

Land reform, land use planning, infrastructure

1934	BANOBRAS finances roads and urban services President Cardenas redistributed 200,000 km of land from large landowners to ejidos; counteract 19th century legacy of
1983	Constitutional reform decentralized authority for land use planning
1990s	100 Cities program encouraged growth of mid-sized cities as regional hubs to distribute growth away from Mexico City, Guadalajara and Monterrey
1997	Reform decentralized financing of land use planning and infrastructure

Private capital enters and exits

1960s	Fairly active role of banks in mortgage lending
1970s	Inflation and discouraged bank lending
1989	Banks no longer required to issue loans for social interest housing
1994	SOFOLes enter the market
	Peso crisis

APPENDIX C: Measuring Housing Quality Using the 2000 Census

In order to develop a measure of the number of inadequate housing units, indicators of housing quality in the 2000 Census are used.[20] With regard to services, homes are defined to be of good quality if electricity and water are available in the unit, there is a sewerage connection to a public system or septic tank, and either gas or electricity is used for cooking. Similarly, housing materials are of good quality if walls are constructed from brick, block, stone or cement, the unit has non-dirt floors, and the roof is made of concrete, brick or "tabique." Finally, in terms of the living space provided, if a home has a kitchen that is not also used as a bedroom, a bathroom and 2.5 or fewer people for each bedroom, it is considered to be of good quality. Conversely, units are of poor quality if they do not meet the above criteria for good quality units.[21]

Table C-1 presents the share of units that are of poor quality based on each of these measures. The most common deficiencies are a lack of water inside the housing unit, roofs made from less durable materials, and crowding. Lack of a sewerage connection and non-durable walls are the next most prevalent problems, being found in slightly more than a third of homes. A kitchen that is also used as a bedroom and a lack of gas for cooking are found in over 20 percent of homes. The least common problem is a lack of electricity, with only eight percent of homes lacking this service.   There have been some noticeable improvements in quality since 1990, notably a decrease in non-solid roof materials (47 percent to 39 percent, a drop in crowding (48 percent to 41 percent) and a decrease in lack of bathrooms (23 percent to 15 percent).

Table C-1:   Share of Housing Units of Poor Quality (1990-2000)

Category	Characteristic	1990	2000
Materials	Floors	19	19
	Walls	29	32
	Roof	47	39
Space	Kitchen	20	23
	Bath	23	15
	Crowded	48	41
Services	Electricity	12	8
	Water	49	49
	Sewer	37	37
	Cooking	21	29

Sources: JCHS 1997; JCHS calculations, data from INEGI 2000

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[20] Methodology for the index originally taken from M. Schteingart and M. Solis, Vivienda Y Familia en Mexico: Un Enfoque Socio-Espacia, INEGI, 1994, used in Herbert and Pickering, State of Mexico's Housing, Joint Center for Housing Studies, 1997.

21 As the authors of the INEGI study note, these definition of which materials represent good quality materials is somewhat arbitrary as other natural materials may provide adequate shelter, while the use of more solid materials does not necessarily imply good quality construction. Given the lack of additional data, however, using more durable materials in construction is the best indicator of quality available.

The simplest way to combine these measures into an overall index of housing quality is to sum the total number of the ten characteristics that are of good quality. The result is an index that ranges from 0 to 10, with 0 indicating a housing unit that is of poor quality on all measures, and a 10 corresponding to housing units that are of good quality in all dimensions. Homes with index values of 3 or lower are deemed in need of replacement or significant upgrading. Homes with index values of between 4 and 6 are in need of moderate upgrading. Homes with index values of between 7 and 9 are generally of good quality, in need of only minor improvements. Finally, 5.4 million units in 2000 did not have any problems.

Table C-2   Estimate of housing replacement and upgrading needs by state (2000)

State	Replacement or Significant Upgrading	Moderate Upgrading	Minor Upgrading	No Problems
AGUASCALIENTES	2.5	7.1	43.1	47.3
BAJA CALIFORNIA	2.3	17.2	54.9	25.6
BAJA CALIFORNIA SUR	8.5	20.6	41.9	29.0
CAMPECHE	19.6	31.1	29.8	19.4
COAHUILA	3.1	17.2	44.3	35.4
COLIMA	4.5	14.7	47.6	33.2
CHIAPAS	38.9	34.7	22.0	4.4
CHIHUAHUA	10.9	16.8	47.7	24.7
DISTRITO FEDERAL	0.7	4.4	38.7	56.3
DURANGO	13.0	28.2	37.7	21.1
GUANAJUATO	7.2	16.9	42.0	33.9
GUERRERO	34.9	29.9	26.3	9.0
HIDALGO	14.0	27.9	39.7	18.5
JALISCO	3.8	9.8	43.7	42.7
ESTADO DE MEXICO	4.6	16.7	47.3	31.4
MICHOACAN	13.1	24.5	42.0	20.3
MORELOS	10.0	24.9	44.2	20.9
NAYARIT	11.9	19.3	47.2	21.6
NUEVO LEON	3.8	11.9	38.3	46.0
OAXACA	30.2	38.3	24.7	6.8
PUEBLA	20.4	34.4	33.3	12.0
QUERETARO	9.2	19.8	37.4	33.6
QUINTANA ROO	12.7	22.5	36.3	28.5
SAN LUIS POTOSI	23.4	27.4	28.2	21.1
SINALOA	9.1	16.8	41.4	32.7
SONORA	7.4	20.2	50.7	21.7
TABASCO	11.1	27.1	45.8	16.0
TAMAULIPAS	10.1	25.0	35.4	29.6
TLAXCALA	6.2	23.1	52.8	17.9
VERACRUZ	25.2	30.7	31.8	12.3
YUCATAN	21.1	39.6	22.9	16.5
ZACATECAS	8.1	27.6	44.2	20.1

Source: JCHS calculations, data from INEGI 2000

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List of Interviewees

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Structura

Andres Conesa
SHCP

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Sebastian Fernandez
CONAFOVI

Carlos Garcia Velez
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Silvia Giorguli
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Ernesto Gomez-Gallardo
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Jorge Gonzalez-Duran
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Carlos Gutierrez
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Ricardo Sanchez Baker
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Elkan Sorsby
GRUPO BRACSA

Sara Topelson
CIDOC

Eugene Towle
Softec

Antonio Vivanco
SHF

APPENDIX E: Methodology for *The State of Mexico's Housing Report 2004*

Phase 1:   (June 2003-October 2003)

Tasks undertaken

- Analysis of secondary sources (full reference list given in Appendix C)
- Preliminary identification of report themes

Meetings held

- Interim discussion with key public agencies and private industry members (Cambridge, MA; August 2003)
- Presentation to advisory panel at meeting hosted by CONAFOVI and CIDOC (list of organizations in Acknowledgements; Mexico City, October 2003)
- Presentation to attendees at EXPO CIHAC (Mexico City, October 2003)
- Interviews with various industry members (full list in Appendix C; Mexico City, October 2003)

Deliverable

- Powerpoint presentation of proposed themes

Phase 2:   (October 2003-February 2004)

Tasks undertaken

- Analysis of primary data (sources: INEGI Census of Population and Housing 2000; CONAFOVI Estadistica de Vivienda 1993-2002)
- Additional analysis of secondary sources
- Development of detailed report outline, incorporating comments from Phase 1

Meetings held

- Presentation to advisory panel at meeting hosted by CONAFOVI and CIDOC (Mexico City, February 2004)
- Presentation to local academics and industry members, hosted by Colegio Arqitectura (Mexico City, February 2004)
- Interviews with various industry members (Mexico City, February 2004)

Deliverable

- Powerpoint presentation of report outline

Phase 3:   (February 2004-June 2004)

Tasks undertaken

- Development of draft report, incorporating comments from Phase 2, additional primary and secondary research
- Circulation of draft to several organizations for comments
- Revision of draft based on comments
- Production of final report

Meetings held

- Telephone interviews to receive comments on report (May 2004)
- Formal presentation of report and press conference (Mexico City, June 2004)

Deliverable

- *The State of Mexico's Housing 2004*