Housing Finance in Developing Countries: Lessons From North America

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INTRODUCTION

Financial markets are very important for housing and housing is very important for the financial markets. Housing is also a major component of social welfare, particularly for the poorest strata of society, which in turn makes it a politically sensitive issue in most societies.

Because housing finance is both a key part of the financial sector and a key method for enabling households to expand their effective demand for housing, it has become a focus of attention among many developing countries and the donor organizations. Since the late 1980s, they have emphasized the gradual development of sustainable private housing finance *systems*, built up as an integral part of the overall financial system. Financial systems are now viewed as the "brain" for allocating investment in a market-oriented economy, and it is essential that they be as undistorted as possible.

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These concerns will be among those emphasized in the discussions leading up to and at Habitat II, a meeting sponsored by the United Nations of world housing policymakers, scheduled to be held in Istanbul, Turkey, in June 1996. As a contribution towards the preparatory meeting for Habitat II held in Nairobi in April 1995, Fannie Mae commissioned the authors to draw upon the historical record of housing finance in the North American countries of Canada, Mexico and the United States to formulate recommendations for policy formulation in developing countries throughout the world. The full study, entitled "Sustainable Financing for Housing: A Contribution to Habitat II," was published as a Working Paper and presented at a session in Nairobi. This paper presents solely the conclusions of the larger report; those interested in the background analysis on which these observations rest can obtain a copy of the full report from the Fannie Mae Office of Housing Research, 3900 Wisconsin Ave., Washington, DC 20016-2899.

The discussion is structured around those aspects of housing finance systems which are seen as common to all countries. These include the basic functions of fund raising, origination of loans and collection or servicing on those loans. In addition, all systems must implicitly or explicitly deal with certain risks, risks that are inherent in granting the use of funds to an unrelated party for a long period of time. These risks can be generally classified into six categories:

1. *Credit risk*: the risk that the money will not be returned, with whatever interest or other charges are due, on a timely basis.
2. *Liquidity risk*: the risk that the money will be needed before it is due.
3. *Cash flow risk*: the risk that changes in market conditions will alter the scheduled cash flows (real or nominal) among the parties involved in intermediation. This includes interest rate risk, prepayment risk, inflation risk and exchange rate risk.
4. *Agency risk*: the risk that a divergence of interests will cause an intermediary to behave in a manner other than that expected.
5. *System risk*: the risk that a crisis at one institution or in one part of the system will spread to the rest of the system.
6. *Political risk*: the risk that the legal and political framework within which the lending takes place will change.

A last major component of any housing finance system is the role of government. At a minimum this role includes the creation of the legal and technical infrastructure needed for a reasonably sophisticated general financial system. Governments, however, are often called upon to play special roles in the provision of housing finance.

The sum total of experience in housing finance in Canada, the United States and Mexico covers most of the important issues facing housing finance in developing countries today. Canada and the U.S. today have the luxury of having learned directly from their internal experience, and also having developed very sophisticated general financial markets on which to build their housing finance systems. Mexico is ahead of most other developing countries in this regard but is still deeply in the developmental stages. We will review each of the key aspects of all housing finance systems in light of the lessons learned from these three countries.

FUND RAISING

Perhaps the key lesson from the North American experience is that general financial deepening is the major factor in increasing the flow of funds to housing. Housing will not get much formal sector credit if savings are not being mobilized through the formal financial sector. It is striking that institutional sources of mortgage funds did not surpass non-institutional sources (e.g., seller-financing) until after World War II in Canada and the U.S. However, financial sector deepening is not an aspect of a developed country system that can be simply imported by a developing country. It must be nurtured by a number of long-run policies encouraging savings and confidence in formal financial sector institutions.

Another key lesson from the North American experience is that there is no universal best or perfect approach to fund raising. The "best" approach depends on what can be done well, in the sense of cost of operation and the quality of risk management, given the particular situation in a country. Within the United States alone, nearly every type of fund raising technique has been used at one time or another. Early intermediaries were small, community-based mutual organizations (sometimes called rotating credit associations) similar to those found in many developing countries today. As deposit-taking became more common, depositories of various types, particularly retail savings institutions, became the dominant lenders. In the last 100 years, savings bank deposits, commercial bank deposits, life insurance premiums, and personal and institutional investors (including pension and insurance entities) in mortgage-backed securities (MBS) have all been major providers of funds for mortgages. The range is very similar in Canada.

One can search the U.S. and Canadian experience for evidence as to which mode of fund raising might be most efficiently utilized by other countries. However, as a practical matter, the most relevant conclusion is that any of these approaches can work quite well. In fact, the ascendancy of funding source depends primarily on the characteristics of the general financial markets, historical accidents and the presence of regulatory or tax advantages. For example, deposit-taking, whether by savings or commercial banks, will be successful if agency and liquidity risks can be managed and especially if government policy favors them. Alternatively, insurance companies or bond-funded mortgage bankers will predominate in other circumstances.

The point is illustrated by the U.S. experience in the last 20 years. There have been huge swings in the market shares of various types of originators and in the sources of funds. Yet, contrary to the expectations of some, there was little disruption in funding for housing. Each of these approaches was a close substitute for the other ones and all were reasonably efficient. Which was dominant depended on government policy and market conditions. This view is further supported by the findings in Diamond and Lea (1992a) that the overall efficiency of the housing finance systems of Denmark, Germany, the U.K. and the U.S. was similar, despite the very different approaches to fund raising taken by each.

What is most important from the policy point of view is that the system is operated in a low-cost way, in a manner that efficiently and effectively manages the various risks of housing finance, and with a minimum of inefficient subsidy. A deposit-based system needs variable-rate lending, perhaps deposit insurance and a liquidity facility, and most certainly government regulation and supervision. Most developing countries are capable of creating this support structure. However, a true secondary market requires a number of additional elements, including technology, standardization and a sophisticated set of long-term investors. Both the secondary market and a bond-based system need controls on agency risk and credit enhancement. Government supervision is needed to reduce agency risk, and the government may be helpful in providing credit enhancement (e.g., through mortgage insurance or security guarantees). However, its support need not be directed at the development of segmented special circuits (see Diamond and Lea (1992b). The role of government is discussed below.

The U.S. and Canada have not had significant experience with direct government funding of mortgages but Mexico has. In the past, Mexico has had government agencies originating loans and engaging in construction directly funded by the government. The competitive presence of these entities, along with mandatory mortgage lending requirements on commercial banks, were responsible for the demise of the mortgage banks in the 1970s and the lack of voluntary lending by the commercial banks in the 1980s. Although controls have been dropped and the banking system privatized, there remains a relatively low level of competition in housing finance, as well as banking in general. The result has been high operating costs and margins. The thrust of recent reforms is quite encouraging, however, with government institutions channeling resources to private entities, thereby increasing competition. The lesson is that, whatever funding method is utilized, assuring cost efficiencies requires access to the system by relatively large numbers of entities competing on a relatively level playing field.

A frequently expressed desire of developing countries is to tap the global capital markets for funds for housing. Foreign funds flowed into Canada, Mexico and the U.S. in the 19th century through the sale of mortgage bonds and debentures. More recently, foreign investors have been significant purchasers of securities of U.S. government-sponsored entities.

How can developing countries access foreign financial markets to fund housing? There are two ways: issuance of unsecured debt (either sovereign debt or the debt of government enterprises) or issuance of mortgage-backed bonds or securities. In most cases, investors will require a (at least implicit) government guarantee against default. The reason is straightforward. Few potential issuers have the capital and the low exposure to political or system risk needed to get a very high credit rating. In the case of MBS, enforcement of mortgage contracts in the court systems of many developing countries can be problematic.

Government guarantees, if credible, can greatly reduce the risk of default. The question is the credit-worthiness of the government. In general, if the sovereign debt of the country is not acceptable on foreign markets, the housing debt will not be. The alternative is to use the collateral or third parties to credit enhance the debt. However, if sovereign debt is not credible, it is hard to imagine that mortgage-backed debt without guarantees would be credible. If government debt is credible, it is likely that at least in the short run, general obligation unsecured debt with a government guarantee is likely to be cheaper and more marketable than securitized debt.

An additional problem in issuing debt in foreign markets is exchange risk. Such risk cannot be reasonably borne by the lender or the borrower in a developing country, so it must be swapped to an entity that has an opposite position. Such a swap is difficult to execute on long-term debt in a currency of a developing country, particularly if such debt is illiquid.

ORIGINATION AND SERVICING

The primary North American lesson is that specialization in mortgage origination, servicing or fund raising may lead to cost savings, but they need not be done together. The U.S. system has shown extreme development with regard to specialization in origination and servicing. The impetus for this has been the development of a secondary market. For mortgages eligible for funding through government-sponsored enterprises (GSEs), all the chores of packaging and marketing the securities are taken over by the GSEs and investment bankers. This has released the originator of mortgages from any need to raise funding for loans for any longer than a few days. It has also prompted the development of entities specializing in servicing mortgages on a fee basis, completely separate from the ownership of the mortgages. This leaves the originator free to focus solely on marketing its origination services and has encouraged intense competition and specialization in each stage of the origination, funding and servicing cycle.

What are the implications for developing countries? The most important implication is that, as alternative designs for a system are being considered, the potential for separation of functions should be kept in mind. A major advantage is that a wholesale funder can utilize an existing retail system, such as commercial banks or insurance agents, for these functions; or specialized originators may arise. An example of the former is Ghana, where both origination and servicing were designed to be activities based in the commercial bank system separate from the fund raising functions of the Home Finance Corporation. Even if these functions are not separated currently, it is useful to incorporate into the loan documents the right to transfer ownership of the mortgage and of the servicing responsibilities. Countries moving in this direction must set up mechanisms to control agency risk.

CREDIT RISK

The principal lesson from the North American experience is that a legal system that creates, records and enforces property rights facilitates housing finance. One of the important legacies of British rule in Canada and the U.S. has been the system of individual property rights. Aside from some farm state protests over foreclosure during the Depression, the right of lenders to foreclose on defaulted loans has been in place since the inception of institutional finance of housing. The situation is somewhat different in Mexico, however. Property rights have not been as strongly supported by the legal system or the courts. Although the Mexican legal system now treats property in a fashion quite similar to the U.S., the ability of lenders to enforce liens through the courts is much more costly, time consuming and problematic. The result is higher credit risk premiums and reduced funds available for housing.

The U.S. and Canadian experience also indicate how strong property rights and efficient foreclosure procedures facilitate lending at high loan-to-value (LTV) ratios and to all types of borrowers. Although credit risk has been shown primarily to be a function of under-collateralization (i.e., a high initial loan-to-value ratio), other factors such as economic and personal shocks and previous credit history are instrumental in causing an under-collateralized mortgage to go into default.[1] Moreover, despite this "high-risk" lending and ease of foreclosure, the actual exercise of default is an exception (cumulative default rates less than 6 percent) and foreclosure rates in these countries are low relative to other countries.[2] Essentially, expediting foreclosure and other penalties of default has been an effective method of keeping the default rate low and the access to funds high. An active property resale market and a healthy rental market also help governments to honor the contractual provisions relating to default in mortgages.

The North American experience is limited with respect to the question of managing credit risk in ways other than easy access to collateral. Mexican lenders have long faced this problem but have dealt with it primarily through limiting lending to workers in the formal sector and relying on payroll deduction for repayment. There has not been much use of third-party guarantors or of non-foreclosure enforcement techniques. Overall the result has been a severe limitation on lending by private institutions. Credit risk management has been compounded by the lack of a reliable appraisal or credit reporting system.

Experience in the U.S. and Canada has shown that private mortgage insurance is viable when mortgage contracts are fully enforceable, but that catastrophic economic circumstances can undermine any such system. It has also been shown that a government-sponsored mortgage insurance program can be viable without large subsidy if premiums are scrupulously set at actuarially sound levels and cross-subsidization is avoided. The key to either public or private mortgage insurance is that the portfolios be geographically diverse enough or be internationally reinsured. Mortgage insurance is problematic in small countries, especially those with relatively undiversified economies.

North American experience also has been relevant with respect to the impacts of loan design on credit risk. The introduction of variable-rate loans in the U.S. has not substantially increased credit risk (potentially arising from increases in interest rates). Just as has been found in the U.K., borrowers are able to absorb a significant amount of "payment shock." U.S. borrowers benefit from a degree of payment protection through caps on allowable rate or payment changes as well as through the ability to refinance to fixed-rate mortgages. Canadian borrowers are potentially more exposed to payment shock due to the absence of such protections and alternatives. Although payment shock has not been a major cause of default to date, the government has designed and offered interest-rate-risk protection to borrowers. Such insurance is difficult to price and hedge, and could be very costly to the government during a prolonged period of rising interest rates.[3]

Mexican lenders have attempted to maintain lending in the face of wide swings in inflation through use of indexed loans. In fact, Mexico has pioneered in the use of dual-indexed mortgages, whereby the payment is linked to wages, not simply to prices. This approach has certainly moderated credit risk relative to operating solely with nominal-rate variable-rate loans, but has not been able to shield the system entirely from high volatility in inflation, real wages and real interest rates. As a result, most private sector loans have been restructured recently.[4] It appears that such loans in such circumstances need to be quite conservatively underwritten with respect to the potential range of real interest rates and payment adjustment.

LIQUIDITY RISK

Illiquidity is a major concern for any housing finance system based on short-term deposits. However, North American experience has been supportive of the proposition that depository institutions, whether commercial banks or savings banks, can provide a good funding base for long-term mortgages. Of course, a prerequisite is that the depositories avoid excessive cash flow risk by matching the term of the interest rates on assets and liabilities. It is also helpful to have a deposit insurance system (with proper regulation and supervision) to reduce the incidence of runs on depositories.

In the absence of such runs (which are threatening to all depositories, whether lending for housing or not), the normal swings in cash flows can be covered by a reasonable liquidity ratio. In addition, the North American experience suggests that access to some kind of liquidity facility is an important facet of a housing finance system.[5] As noted above, mortgages are often better collateral for liquidity advances than are short-term commercial loans. Liquidity mechanisms can protect both individual institutions and the entire banking system from liquidity crises, especially if ultimately backed by the government.

To the extent that the financial system can support a regular mortgage-backed bond market, the normal liquidity risks of long-term lending for housing are practically eliminated, as the maturity of the funding can be matched to that of the loan. (There remain the liquidity problems associated with major economic and political shocks to the whole system that can disrupt the effectiveness of a private mortgage bond market.) However, one of the major barriers to the operation of such a funding source is achieving sufficient liquidity in the resale market for such securities to reduce the liquidity risks of the potential investors in such securities. This latter problem is minimized if there already is a liquid market in government debt (particularly long-term debt, which is frequently not the case) and the mortgage-backed bonds are viewed as close substitutes to government debt.

Mexico has been a test case for how depositories can handle the negative amortization build-up inherent in the use of inflation-indexed loans.[6] The rapid build-up of negative amortization in the 1990s has led the commercial banks to restructure the terms and payments of the loans. In addition, concern about the potential for rising real balances of such loans has led some banks to cap the proportion of assets in the form of mortgages (e.g., 25 to 30 percent) and is a major reason for the strong interest in a secondary mortgage market.

CASH-FLOW RISK

The North American systems have demonstrated the importance of proper instrument design in managing cash-flow risk. Mexico and the U.S. once had a predominance of fixed-rate loans. In the U.S., the intermediaries were relying on short-term deposits, thus taking on significant interest-rate risk. Mexican lenders relied on mortgage bond financing and thus bore no cash-flow risk, but were still put out of business when the increased volatility in interest rates in the 1970s ended their access to bond markets.

The U.S. is one of the few places in the world where mortgages with long-term fixed nominal rates are predominant. This partly reflects the high rate of mobility in the country; the great majority of the supposed "30-year" mortgages are prepaid in less than 10 years because of mobility, as well as prepayments associated with refinancing for other reasons. But this situation has created a major sub-sector of the housing finance market devoted to dealing with the prepayment risk arising from such mortgages. Although U.S. intermediaries have developed sophisticated instruments to manage the risks due to adverse exercise of the prepayment option in mortgages (e.g., through the CMO and callable debt), the experience of investors with adverse prepayment patterns in MBS is an important lesson to investors and intermediaries in other countries contemplating bond-funded fixed-rate lending.

In the absence of bond-funded fixed-rate lending, the major option for managing cash-flow risk is with variable-rate loans, either linked to some index of market rates or not, and either with some automatic provision for limiting or deferring some of payment increases or not. In Canada, the preference is for resetting the rate every 1-5 years at the then-current market rate, without any explicit limitation. In the U.S., the preference is for resetting the rate every year at some predetermined margin over a specific market-related rate, but with caps on the annual change and the cumulative change in rates. In Mexico, high and volatile inflation and real rates have forced a reliance on inflation-indexed loans with ad hoc relief (e.g., through term adjustment) if economic conditions create adverse debt repayment circumstances. Mexican intermediaries appear to continue to bear significant risk with respect to variability in real interest rates, which may yet cause difficulties for deposit-based lending.

It is notable that none of the North American systems utilize the types of loans and funding that fully neutralize the effects of inflation on the amount of "real" cash-flow risk. Such a system would consist of loans which accrue interest at full nominal market rate (or market real rate plus inflation) and have payments which are fully indexed, funded by indexed bonds or other sources with essentially pass-through cash-flow characteristics. This situation may be for a variety of practical reasons (accounting, tax); but it also may reflect other factors, such as basic limits to the public's understanding of inflation and cash flow preferences of institutional investors (who are other financial intermediaries responding to the desires of their clients).

The result is that none of the North American systems are immune to the effects of a severe round of inflation (of the type Mexico is experiencing at the moment). The U.S. and Canadian systems could not stay unchanged in the face of a shift towards a 20 percent rate of inflation, and most intermediaries could not even survive a prolonged period of such inflation rates. Mexico, at least, has indexed the principal of most loans, but the variability in real interest rates and real wages has caused significant problems for both borrowers and lenders. In part, these problems were caused by difficulties in implementing the dual-index mortgage (DIM) design (i.e., the lack of a reliable wage index) and by excessively wide spreads between initial payment and loan rates.

AGENCY RISK

The North American experience, particularly that of the U.S., points to the dangers of government guarantees. The moral hazard potential of deposit insurance strongly supports the need for adequate supervision of depository institutions. There is clearly a trade-off between efficiency and agency risk control, however. Government control of the system may reduce the explicit agency risks (with a possible increase in the potential for corruption), but usually at a very high cost of inefficiency and ineffectiveness.

The presence of supervision is important in controlling agency risk for non-depository institutions as well. The success of the secondary mortgage market, in particular the specialization of funding, origination and servicing, strongly indicates the importance of safeguards against agency risk at each step in such a fragmented system. In developing countries, non-bank intermediaries operating with almost no regulation or supervision sometimes end up being Ponzi-type schemes (where early depositors are paid out of funds from later depositors). Adequate disclosure (e.g., about the investments made with depositor funds) as well as supervision are important in controlling the agency risks inherent in these types of institutions.

The North American experience also strongly confirms the need for a strong equity backing of risk-taking financial intermediaries. Accounting rules must provide adequate information to investors and regulators, and government supervision must enforce the capital requirements.

Managing the agency risk in a developing country is a major challenge. There are important limitations on the experience and sophistication of regulators and supervisory personnel; and in the accounting data, computer and other technical resources available for accurate and timely monitoring. Also, even the best of systems on paper may have practical loopholes that can be identified only with experience. Unfortunately, the general scarcity of private investment capital makes it particularly difficult to build up well-capitalized private institutions; but the potential loss of private equity serves as the most effective deterrent to excessive risk taking or irregular practices. Government-related financial entities pose special problems, because they are often not constrained by concern for loss of any capital. These constraints suggest that housing finance system development should focus on simple and transparent practices and institutions in order to be sustainable.

SYSTEM RISK

All of the countries of North America have experienced economic shocks to their financial systems that have generated system interactions. The result has been the formulation of both explicit and unstated rules for intervention by the government to support the system, especially against runs on banks. In both Canada and the U.S., the combination of deep financial markets and liquidity safeguards significantly reduces the likelihood of a system meltdown.

System instabilities can be more serious when the financial health of the government itself is not strong enough to support the government debt issuance sufficient to prop up the system. This leaves the IMF and the major developed countries as the ultimate source of system stability. Whether the domestic politics of international intervention by these entities is sufficient to deal with all shocks remains to be seen. The recent experience in Mexico is not totally reassuring. However, the internationalization of individual investing may be creating a constituency for international intervention to promote stability at the same time that it is increasing the volatility of international capital flows.

Another source of system instability can be the tendency towards overlending during boom periods and significant tightening of credit terms during recessions. The result can be property booms and credit crunches which can lead to high levels of loan default and institution failure. The sheer geographic size of the North American countries suggests that such cycles are not likely to be threatening to the overall financial system. However, they have been quite damaging to local economies (e.g., Texas and the New England area in the U.S.) and smaller countries (the U.K.).

POLITICAL RISK

An overriding difference between developed countries such as the U.S. and Canada and developing countries, including Mexico, is in the potential for some events related to government to shift so sharply that current loans and the system itself are totally jeopardized. This potential should not be ignored for developed countries. Until relatively recently, such countries regularly went to war with each other. There are still issues such as separatism in Canada and political liberalization in Mexico that can result in major changes in economic, financial and social policies over time.

Wholesale changes in regulation and taxation, such as those experienced by the U.S. thrift industry, can have profound effects on the intermediaries as well as their borrowers, investors and the markets they serve. Economic crises in the U.S. prior to World War II resulted in the demise of several sets of housing finance institutions, including early mortgage banks, private mortgage insurance companies, and a large number of commercial banks and thrifts. Thus, developing countries must keep the potential for traumatic political upheaval in mind in designing their systems.

Government policy and private initiative towards housing finance needs should be sensitive to these considerations. Loan designs and funding methods need to be viewed in light of the potential for severe economic shocks (e.g., indexed mortgages to manage the effects of inflation, long-term funding sources to manage the cash-flow risk of long-term fixed-rate mortgages). Liquidity mechanisms and government guarantees may need to be in place to dampen the effects of destabilizing events. A housing finance system that is integrated into the broader financial markets may be more able to withstand a severe economic shock than one that is segmented.

THE ROLE OF GOVERNMENT

Many of the desirable developments in housing finance in North America can be credited to government intervention, but so can many of the worst developments. Distinguishing between good and bad interventions is a high stakes activity, especially since those parties benefiting from some arrangement will usually fight the hardest to keep it in place, even if its overall effect is pernicious.

One test for the desirability of government intervention is whether it enables the private market to perform better, rather than restricting the private market. The starting place for government is to provide the infrastructure and the economic environment conducive to the creation of long-term savings and lending. Policies which foster a well-functioning legal system and confidence in the future (from both an economic and social perspective) are likely to be the most important in developing a housing finance system.

The provision of deposit insurance and liquidity facilities has generally been viewed as stimulating the growth of depository institutions and increasing their involvement in the mortgage market. Likewise, the presence of government guarantees (through mortgage insurance and the secondary mortgage market) act to reduce system risk in modern financial systems, incenting greater participation in housing finance by a wide variety of intermediaries and investors, increasing competition and improving the allocation of cash-flow risk. The costs of these enablers can be high and necessitate ex ante regulation and supervision in order to control potential agency risks. Although easy to design, effective regulation requires a great amount of perspicapacity and political independence on the part of regulators.

At the same time, government should attempt to remain as neutral as possible in biasing the system to one or another type of intermediation (e.g., banks vs. money markets, mortgage banks vs. portfolio lenders). Subsidies to the intermediation process should be oriented towards overcoming imperfections in financial markets, not towards subsidizing the operation of certain types of intermediaries. Care should be taken that the activities of government agencies (e.g., provision of mortgage insurance in Canada and the U.S.) complement and do not crowd out the private sector.

Even if private markets function effectively, as they do in Canada and the U.S. and are beginning to in Mexico, there will still be households that cannot get access to housing finance, primarily due to a lack of ability to pay. There are clear lessons as to the efficacy of redistribution through the housing finance system. The least effective approach is to subsidize the construction of specific housing units; the most effective is to enable the supply process and to use direct subsidies to the purchasing power of the intended beneficiaries.[7] Enabling the supply process includes improving the flow of funds and risk management for housing finance in order to help the market to work better, not to force or subsidize the availability of finance for housing. The experience in North America, as well as in many other parts of the world, is that housing finance can be a profitable activity for intermediaries if institutions are allowed to compete on a level playing field.

From a broader perspective, it is important to emphasize that governments must enable the private rental sector, as well as homeownership. Poor households in urban areas are largely renters, and an active rental market with many small operators helps meet the housing needs of poor households, facilitates greater labor mobility and gives more established low-income households a convenient and productive method of accumulating wealth as landlords.

One common problem in developing countries is dealing with a history of financial market control or repression. The lessons here are clear. The economy benefits greatly from removal of controls, but the process needs to be relatively slow and cautious. There is a learning curve for the public, and the management and rapid changes in massive flows of funds in economies cause unforeseen secondary effects that could affect the stability of the system.

Another area for thoughtful government intervention is in setting in place the basic dynamic forces affecting the decision to save on the part of individuals and institutions, and the decision of the form in which to hold the savings. This refers to incentives to buy insurance and to accumulate pension savings. Government policies including tax policies can be potent long-term forces shaping the financial system and determining the overall availability of capital in the country.

CONCLUSION

As the article by Mark Hildebrand in this issue of *Housing Finance International* points out, private sector capital has taken on increased importance as a source of funds for development. This article has attempted to examine some of the necessary conditions for mobilization of private sector capital for housing by reviewing the development of the housing finance systems of North America.

Our findings suggest that there is no universal best way to build a sustainable housing finance system. In fact, not only are the systems in all three countries very different today, but they also have changed very significantly over time to adapt to the contemporary technological and financial circumstances. However, there are a number of common characteristics of a successful housing finance system — one that is both efficient and stable in its allocation of resources for housing. These include open and competitive markets in the basic functions of a housing finance system, the origination and servicing of mortgage loans and mobilization of funds for housing.

In addition, a successful housing finance system must provide its participants with effective ways and incentives to manage the fundamental risks of housing finance. Whenever the incentives or tools have been lacking, systems in North America have failed or had to radically change, sometimes with government assistance, to continue providing a service vital to modern urban society — housing finance.

NOTES

[1] Van Order (1990).

[2] For loans with LTVs less than or equal to 90 percent. The cumulative default rate rises for loans over 90 percent LTV. The year of origination also matters [Van Order (1990)].

[3] This program is discussed in more detail in the article by Larry Jones in the March 1995 issue of *Housing Finance International.*

[4] Public sector loans have a provision for an automatic extension of the term and eventual write-off of the balance at the end of the maximum term. For more information see the articles by Barry, Castañeda and Libscomb, and by Lea in the March 1995 issue of *Housing Finance International.*

[5] See Pollock (1994) for a brief description of the U.S. experience. He notes that the quality of the collateral is an important feature of the system, as is the fact that credit risk remains with the originating lender.

[6] This issue has already been addressed in those countries with fully indexed economic systems. In this case, both management and the general public seem to think in terms of inflation-adjusted amounts and the indexation of mortgage balances does not pose any special problems beyond the normal ones associated with long-term lending in a developing country. Mexico, though, is not a fully indexed economy, and thus there is some greater potential for nominal deposit levels to fail to keep up with growth in loan balances.

[7] See also the article by Kyung-Hwan Kim in this issue of *Housing Finance International.*