Restarting Housing Finance in Mexico

by Michael J. Lea

OVERVIEW

The Mexican housing finance system suffered a severe shock as a result of the peso devaluation at the end of 1994. Private market lending by the commercial banks has virtually ceased. The only on-going mortgage lending in any volume is being done by the housing pension funds, INFONAVIT and FOVISSSTE.

The prospects for resumption of mortgage lending activities by private sector entities is not encouraging. The banks have experienced default rates in excess of 30% on their loan portfolios and are in the process of restructuring the loans for the third time in as many years. In addition, events of the last two years have severely depleted bank capital, potentially leaving them with an inadequate base upon which to conduct new lending.

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The first prerequisite for a return to anything close to normal lending activities is a stabilization of the economy and banking sector. For reasons explained below, the banks have experienced great difficulties with the use of indexed mortgages. Thus, they may be unwilling to return to the market until inflation rates reach levels allowing the use of more traditional mortgage products.[1]

The second prerequisite for rebuilding the Mexican housing finance system is a strengthening of the primary mortgage market infrastructure. Many of the problems experienced by the banks in the 1990s can be traced to inadequate origination and servicing guidelines and procedures. In addition, the legal and regulatory framework needs further strengthening to ensure a steady flow of funds to the sector.

The third prerequisite for development of the housing finance system in Mexico is an expansion in the supply of long-term funds. Creation of a secondary mortgage market can facilitate access to such funds by lenders. Integrating the housing finance system and the broader capital markets can facilitate a reduction in the liquidity and interest-rate risk of mortgage lending, and spur increased competition in the highly concentrated primary market.

PRE-DEVALUATION EXPERIENCE

Market Structure

The Mexican housing finance system is highly segmented. As shown in Table 1, there are four major market segments that are defined in terms of the income distribution they serve.[2]

The very low and low-moderate segments of the population obtain housing finance almost entirely through government programs. These programs include loans from pension funds (INFONAVIT for private sector workers and FOVISSSTE for public sector workers), a central bank trust fund (FOVI) and an assortment of programs from federal and state agencies.[3] The pension funds and FOVI provide some loans to the middle income segment and the banks service the upper income segment of the population.[4]

Prior to the devaluation, both the public and private sectors had been expanding their funding of housing. In 1994 the estimated government funding of housing increased 71% in real terms to N$16.5 billion for 486,597 units from N$9.7 billion and 300,000 units in 1992 (see Tables 2A and 2B).

The commercial banks provided significantly more funds for housing than the government in 1994, with an estimated investment of N$21 billion for 138,000 units. The greater supply of funds was for far fewer units, however, reflecting the upper-middle income lending

Table 1. Housing Program Target Populations

Income Segment	*Primary Lenders*	*Estimated Size of Market Segment (1994)*	*Definition*
0 MW to 2 MW	FONHAPO, state agencies	66.05%	Very low
>2 MW to 5 MW	Pension funds, FOVI	26.00%	Low-moderate
>5 MW to 10 MW	Pension funds, FOVI	5.32%	Middle
>10 MW	Commercial banks	2.63%	High

MW = Minimum Wage

Source: CCS Estimates and Mexican Census

Table 2A. Housing Investment in Mexico, Number of Units—Government Programs Only

	1990	*1991*	*1992*	*1993*	*1994 (est.)*
Pension Funds	114,522	105,516	124,010	145,231	172,000
FOVI	30,720	30,772	24,638	22,089	42,721
Other	246,862	238,350	151,858	167,871	271,879
Total	392,104	374,638	300,506	335,191	486,600

Table 2B. Housing Investment in Mexico, Millions of N$—Government Programs Only

	1990	*1991*	*1992*	*1993*	*1994 (est.)*
Pension Funds	4,117	5,209	6,147	7,614	10,147
FOVI	930	1,061	1,017	695	3,700
Other	1,369	237	2,520	2,359	2,741
Total	6,417	6,507	9,684	10,669	16,588

Source: SEDESOL 1994

Table 2C. Commercial Bank Investment in Mexican Housing

	1990	*1991*	*1992*	*1993*	*1994 (est.)*
Number of Units	41,554	35,056	129,362	120,049	138,839
Millions N$	3,359	2,949	20,991	21,863	21,000

Source: SEDESOL 1994

focus of the banks. In 1994, the average loan was in excess of N$152,000. The average commercial bank customer in Mexico in 1994 earned N$100,000 per year (18 times the minimum wage) and owned a home in the N$240,000 range. In 1994, 18 commercial banks were active in the mortgage market. However, the market was highly concentrated, with the two bank lenders, Bancomer and Banamex, accounting for approximately 60% of the market and the top four lenders (adding Serfin and Inverlat) accounting for 80% of the market.

Lending Infrastructure

The Mexican banking system was privatized in 1991 after 10 years of government control. As shown in Table 2C, their lending volume increased tenfold between 1991 and 1992. It was constant in nominal terms in 1993 and 1994. After privatization, the banks rushed into the mortgage market with the expectation of high profit margins on loans to the growing Mexican middle class. In retrospect, however, their move into this area of lending was ill-advised, as it was done before they had adequate origination and servicing systems in place. As detailed by Barry et. al. [1995] and a working group on securitization in Mexico [1996], there are a number of legal and regulatory impediments to the proper functioning of a mortgage finance system in Mexico, as well as the lack of borrower information, accurate house price valuation, incomplete property registries and ineffective foreclosure procedures.[5]

The commercial banks began experiencing significant difficulties with their newly originated loans as early as 1993. Many banks developed high delinquency rates in their mortgage portfolios and began slowing down their new lending activities. There were several reasons given for the rise in delinquencies. First, as noted above, the increase in bank lending far outstripped their servicing and collection capabilities. Second, the expansion in lending came at a time during which the economy was being opened to increased competition, resulting in corporate downsizing and significant lay-offs among middle-class households. Third, the structure of the mortgage instrument may have contributed to a poor portfolio performance.

Mortgage Instrument

The principal mortgage instrument used by the commercial banks is the double-indexed mortgage (DIM), structured along the lines of loans introduced by FOVI and Banamex in the mid-1980s.[6] The DIM attempts to create a loan that is both affordable to the borrower and profitable for the lender. It does so by separating the payment rate and the amortization or accrual rate on the loan. In the classic DIM, payments are adjusted based on the evolution of the minimum wage index and the amortization rate is based on either a short-term Treasury bill (Cete) rate or the cost of funds of the banks (CPP). Differences between the actual and required payments are deferred and added to the loan balance. Thus, this loan is subject to negative amortization (referred to as "refinancing" in Mexico).

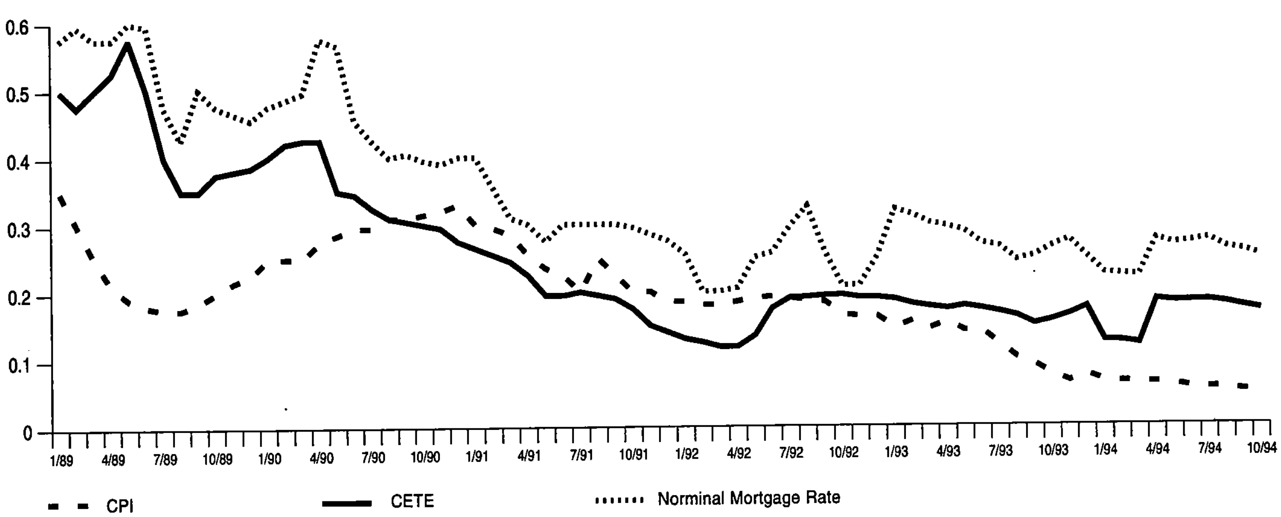
In 1992 and 1993, the banks originated a large volume of dual-indexed mortgages. These loans experienced a significant build-up of negative amortization caused by a combination of declining real wages (as measured by the minimum wage index) and high real interest rates (including high margins, see Figure 1). Concerns about the performance of their mortgage loans led the banks to restructure virtually all of their non-FOVI loan portfolios in 1994. The restructuring was voluntary, with borrowers given incentives in the form of lower payment rates, longer terms and lower margins.

The loan design introduced in 1994 was based on the Espacio loan by Banamex. This loan featured payments indexed to inflation (creating a payment constant in real terms) and a loan rate indexed to the interbank rate plus a variable margin ranging between 5.2 percentage points and a multiple (1.2 to 1.7 times, depending on the bank) of the interbank rate. Spurred by competition, the banks offered these loans at low initial payment rates (e.g., 10 pesos per 1000 in loan amount) and longer terms.

Pre-Devaluation Reforms

Prior to the devaluation, the Mexican government launched a series of reforms designed to increase the efficiency of the primary mortgage market. The government brokered a major agreement in 1992 between federal and state agencies, and various private sector

Figure 1. Key Mexican Interest Rates and Consumer Price Index



Source: IMF, Barry et al. [1994], Grupo Financiero Serfin groups to develop consistent building standards, reduce time limits for approving permits and licenses, and reduce development fees and bureaucratic costs. In addition, a 1992 amendment to the charters of INFONAVIT and FOVISSSTE eliminated their housing construction role. The rationale for this change was to streamline their operations and encourage greater competition among developers. In 1993, legislation authorizing the creation of finance companies (SOFOLs, Sociedades Financieras de Objeto Limitado) was passed. Twenty-eight SOFOLs, 16 of which are mortgage banks, have been authorized for business. They will be funded through a combination of commercial bank loans, FOVI and foreign loans. The government hopes that they can stimulate greater competition in the primary mortgage market. Finally, in order to develop a secondary mortgage market, the government began a reform process designed to reduce the cost and time necessary for foreclosure and title transfer.

POST-DEVALUATION EXPERIENCE

Performance

The restructuring of the loan portfolios to the Espacio design was completed just prior to the devaluation. Since the devaluation, the performance of the bank portfolios has deteriorated sharply, with many banks experiencing default rates in excess of 30%. There are several reasons for this performance deterioration. First, the economic turmoil has led to a significant increase in unemployment. Second, borrowers have been subject to huge increases in their payment burdens, a result of linking the payments to inflation at a time in which real incomes were falling. Third, a rapid build-up of negative amortization resulting from extremely high real interest rates in 1995 has left many borrowers with negative equity in their homes (house prices have been flat or declining throughout most of the country since devaluation).

The impact of the devaluation on both the DIM and Espacio mortgage designs is shown in Figures 2 and 3. The Espacio accomplished the desired result of limiting the negative amortization build-up but at the price of huge payment shock for borrowers. The typical loan would have had a 42% payment increase at the first adjustment in mid–1995 and a second 12% adjustment later in the year—a total increase of 65% over the1994 end-of-year payment. The DIM insulates the borrower better from payment shock, although default rates have been high on this instrument as well, since the wages of many Mexican households have not kept up with the official increases in the minimum wage.[7]

The impairment of their mortgage portfolios came at a time in which the banks were having high default rates on their other loans, in part due to the extremely high interest rates in 1995 (exceeding 100%). In order to keep the banking system afloat, the Mexican government developed a restructuring plan for impaired assets, including corporate loans, household mortgages and development bank loans. The restructuring plan included the following features:

- Creation of a new unit of account, the UDI (Unidades de Inversión), designed to maintain a constant real value. The value of the UDI in New Pesos is based on daily changes in the national consumer price index.

- Restructuring of individual mortgage loans with both payments and balances indexed to UDIs with lower initial payments (7.7 UDI per thousand with payment-to-income ratios of 25%) and capitalized unpaid balances. UDI loans amortize at a fixed real rate of 9%. The purpose of the restructuring was to swap loans with floating real rates for loans with fixed long-term real rates.

- Swapping of the mortgage loans for an equivalent amount of Mexican Treasury securities, with the loans going into a trust funded by Mexican government loans (to the trust) at a 4% real rate (see Figure 4).

A rationale for the restructuring was to shift real interest rate risk to the government. The banks received government bonds with market-determined nominal short-term rates, which are a better match for their short-term nominally denominated deposits.[8] The trust has assets in the form of restructured UDI loans (the credit risk and servicing responsibility remains with the banks) and issues securities indexed in UDIs which are purchased by the government. If real rates are greater than 4%, the government bears the cost; if real rates fall below 4%, the government gains.

The banks have restructured a significant proportion of their loans (the proportion varies by bank and depends on the number of UDI credits given to the bank by the government). The credit risk of the mortgages stays with the banks. Unfortunately, the UDI loans contain a similar problem as exists with the Espacio: the payments are indexed to inflation, which is rising faster than wages and house prices. Thus, the banks have experienced rising default rates on the new UDI loans as well.

In recognition of this problem and the importance of stabilizing the banking system, a further restructuring plan has been negotiated between the banks and the government, wherein the government will subsidize up to 30% of borrower mortgage payments.[9] The subsidy payment by the government will decline over a 10-year time period. To qualify borrowers must have loans restructured in UDIs that are current by September 30, 1996.

Even with this latest restructuring, it is not clear that the mortgage loan problems of the banks are over. The fact that individual loans have been restructured three times in as many years creates a potential moral hazard for the

Figure 2. Mortgage Payments Through Devaluation

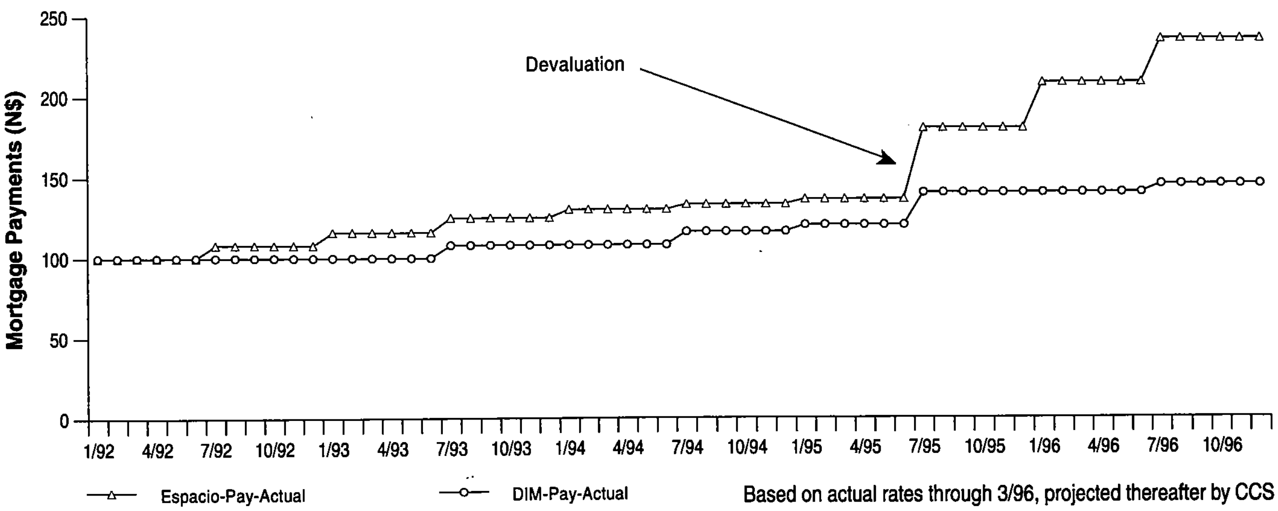
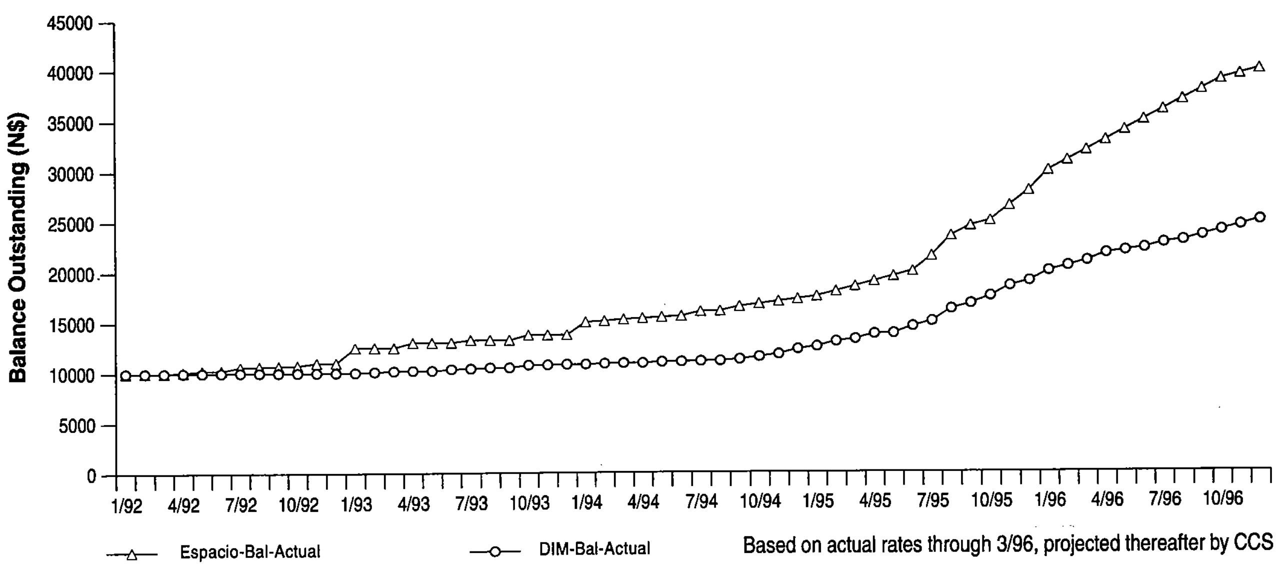


Figure 3. Mortgage Balances Through Devaluation



government as the banks and borrowers may come to believe that they will be "bailed out" again in the future if they fall behind on their payments. In addition, payment on the UDI loans is still indexed to inflation, which can lead to payment shock if inflation rises at a faster rate than wages.

The low-moderate segment of the market has been adversely affected by the devaluation as well. The banks have greatly reduced their originations of low-moderate income loans funded or guaranteed by FOVI, in part because FOVI guarantees cover only 40%-50% of mortgage default risk. Thus, most of FOVI's current activities are with the SOFOLs. Lending by the SOFOLs began in mid-1995 but has been modest.

FOVI is no longer being funded by the Central Bank. It is currently being funded by the Finance Ministry (Hacendia), but there are discussions about restructuring it as a stand-alone, second-tier financial institution. Until its future is resolved, it is unlikely that it will greatly expand its volume of activity.

Current Reform Efforts

The Mexican government and the banks have not stood still during the crisis but have begun implementing a number of reforms that should lead to an improved mortgage market infrastructure in Mexico. The banks have or are in the process of upgrading and improving their servicing and information processing systems. The SOFOLs have begun originating and servicing FOVI loans and several have adopted the same documentation and use a common servicing system. Three credit bureaus have been formed and the banks have agreed to share their data with them. The government has continued to move ahead with legal reforms designed to improve the climate for mortgage lending and the possibility of securitization. In April 1996, reforms were passed at the federal level that will both speed up and reduce the costs of foreclosure and ownership transfer of mortgage loans. These reforms must also be passed by the individual states.

Beginning in January 1997, Mexican banks must use Generally Accepted Accounting Principles (GAAP) for financial reporting purposes. The use of GAAP will change the way the banks account for loans in default, requiring that the outstanding balance rather than just the delinquent payments be shown as impaired. This will have major implications for capital adequacy and is one of the reasons for the April 1996 loan forbearance plan.

Figure 4. 1996 Mortgage Loan Restructuring

Banks		Trust		Government	
Assets	*Liabilities*	*Assets*	*Liabilities*	*Assets*	*Liabilities*
Restructured Mortgages (UDI + 9%)	Deposits	Restructured Mortgages (UDI + 9%)	Securities (UDI + 4%)	Trust Securities (UDI + 4%)	Government Bonds (Cete rate)
Government Bonds (Cete rate)					

ISSUES FOR THE FUTURE

Primary Market

Even with these reforms, it is unlikely that the banks will re-enter the mortgage market until the economy stabilizes further. The cost and dislocation associated with three major portfolio restructurings must give the banks second thoughts about the risks and returns of mortgage lending. The pre-devaluation mortgage portfolios of several of the major lenders exceeded 30% of assets, and they are unlikely to want to increase that proportion.

In the wake of the high default rates experienced by the banks, it is imperative that they continue to improve their mortgage origination and servicing procedures. Furthermore, they must be able to produce comprehensive reports that allow analysts, investors and regulators to understand the performance of their portfolios. Only when such information is available is there any hope that loans could be sold or securitized.

An additional important objective is fostering increased competition in the primary market. A highly concentrated market as exists in Mexico can give rise to excessive profit margins and risk taking as well as a lack of product and system innovation. In this regard, the role of the SOFOLs is important. The mortgage banks can be a catalyst for increased competition and innovation. However, they are seriously constrained at present by a lack of funds. Other than their shareholder capital, the only source of funds available to the SOFOLs is FOVI. Because the SOFOLs are new entities with unproven track records, FOVI has placed more stringent capital requirements on the SOFOLs than on the banks. In order for them to play a more active role in the primary market, the capital standards will have to be equalized, which may happen as confidence grows in their origination and servicing capabilities. More importantly, the SOFOLs will need additional sources of funds through the development of a secondary mortgage market.

Secondary Market

The development of a secondary market can facilitate an increased flow of funds to the housing sector and improved risk management for lenders. A secondary market can provide a means to integrate the housing finance system and the broader capital market, allowing a funding of mortgages from long-term sources of funds and improved interest-rate-risk management. A true secondary market in which loans are sold and credit risk transferred can relieve the capital pressure on primary market lenders.

The recent pension reforms in Mexico will create a pool of long-term funds suitable for funding long-term mortgages. The SAR (Sistema de Ahorro Para el Retiro) is a mandatory 2% payroll deduction that will eventually be credited to individual worker accounts.[10] It is planned that these funds will be invested in various mutual funds which in turn will invest in bonds, equities or money market instruments. Estimates are that the SAR is generating between $1 billion and $2 billion per year. Mortgage bonds or mortgage-backed securities could be very attractive investments for the SAR funds. A restructuring of the housing pension funds, INFONAVIT and FOVISSSTE, from loan originators to portfolio investors could expand the pool of funds for housing and facilitate greater primary market competition.

There are several issues that must be resolved before a secondary market can develop. The first is an improved primary mortgage market infrastructure. The banks have a very poor track record in servicing and information management. Although a number of major banks have stated that they are making significant improvements to their systems, it will take some time before the results of these investments are known. In addition, it will take time before the results of the recent foreclosure and property transfer reforms are known and tested in the courts. An important area of emphasis should be on improving the property registries (e.g., through computerization).

It will also take time to develop pools of securitizable loans in Mexico. The poor quality of existing loan portfolios, the lack of standardization of documentation and servicing, and the lack of performance data on portfolios all suggest that market sale of loans or mortgage-backed securities is not possible. The UDI restructuring has created more standardized loans which, after several years of performance, may be candidates for securitization.

A third issue is the provision of guarantees. Because of the poor performance of mortgage portfolios and the weakness of the primary market infrastructure, secondary market investors will most likely require government default risk guarantees. However, the government recognizes that it is subject to a significant moral hazard if it gives such guarantees. The use of guarantees, their pricing, and the ability of the guarantor to manage and monitor its risk are major policy issues that confront the Mexican government.

A fourth issue is the role and specific activities of a secondary market institution, if any. Such an institution could function as a liquidity provider (e.g., a collateralized lender like the Federal Home Loan Banks), a portfolio investor (the original Fannie Mae design) or a guarantor (combining the functions of FHA and Ginnie Mae in the U.S.). A secondary market institution can be a cost-effective issuer and market maker in its debt or mortgage-backed securities. FOVI is a logical candidate to develop a secondary market. It has both the reputation and experience in the sector to become a credible securities issuer. However, to perform such a function, FOVI would need a different legal and organizational structure than it has now.

A fifth issue is the clear need for improved transparency and regulation of the mortgage market. Financial institution regulators will need to more closely monitor the lending practices and portfolio performance of the banks to avoid a repeat of the current crisis. In addition, a regulatory structure will need to be developed for the SOFOLs if they are to be successful at funding their activities. In particular, there is a need for a stronger rating agency presence if a secondary mortgage market is to develop.

A final issue is the need to design a mortgage instrument that will be acceptable to investors. There are both technical and conceptual issues related to the design of mortgage instruments in Mexico. A major technical issue for DIMs is the payment index. Changes in the minimum wage index have systematically understated (late 1980s, early 1990s) or overstated (post-devaluation) changes in typical borrower payment capacity in recent years. At a minimum, a new index based on a survey of actual wages, preferably stratified by income class, is necessary for continued use of the DIM. Even if a more reliable payment index can be found, DIM loans will be difficult to securitize because of the complexity of the instrument and the difficulties for investors of forecasting cash flow.

The overriding conceptual issue has been the allocation of cash flow risk in the Mexican mortgage market. The Mexican economy has exhibited extreme volatility in both inflation and real interest rates over the past two decades. This volatility creates significant cash flow risk which must be borne by borrowers, lenders and/or the government. It is not clear from past experience that either borrowers or lenders have the capacity to manage such risk. The mortgage designs have created a domino effect in the Mexican financial market with extreme cash flow variability leading to widespread mortgage default that the banks have been unable to absorb, leading to the recent government intervention.

Under most market conditions, the FOVI DIM shields borrowers from significant cash flow risk. The FOVI program involves several different forms of subsidy, including the provision of partial default risk guarantees, below-market amortization rates on mortgage loans and the contingent liability of the government to absorb mortgage balances outstanding at the end of 30 years. Given the relatively low income of FOVI borrowers, the risk shifting and subsidization may be appropriate. However, if FOVI is to become a true secondary market institution, the finance and subsidization of housing must be separated. The Mexican government may need to consider the introduction of more transparent housing subsidy schemes as part of a restructuring of the housing finance system.

The government did not bear the cash flow risk of mortgage lending on non-FOVI loans made by banks on an *ex-ante* basis. Discomfort with this risk caused the banks to change the DIM loan design, shifting more cash flow risk to the borrower with disastrous consequences. The UDI loans aim to eliminate the real rate risk component for borrowers by fixing the real rate on loans. If the banks can develop a market for UDI-indexed liabilities, they can originate UDI loans and hedge their real interest rate risk. However, these loans have the potential to confer significant cash flow risk on borrowers if inflation were to rise sharply again. This potential makes the loan more risky to insure and difficult to securitize.

CONCLUSION

In summary, the Mexican mortgage market has gone through a traumatizing period over the past two years. Many mortgage loans have been restructured several times, the government has agreed to major support of mortgage borrowers and thus the banks, and new mortgage lending has virtually ceased. Yet amid these problems, there are several positive developments. The government has made significant progress on reforming the legal and regulatory infrastructure for lending. The banks appear to be making serious improvements in their origination and servicing infrastructure. The SOFOLs have begun operations despite the difficult economic circumstances. All of these developments bode well for a restarting of the housing finance system if the progress towards macroeconomic stabilization continues.

NOTES

[1] For a description of a market response to the bank withdrawal, see the paper by Bernstein in this issue of *Housing Finance International.*

[2] The information in this section is from M. Lea and S. Bernstein, "Expanding Housing Finance in Baja California," a report prepared for the Planning for Prosperity Fund, San Diego CA, December 1994. The market size estimates were based on a minimum wage in Mexico in 1994 of N$ 458.1/mo. or N$ 5497/ year. The current minimum wage is approximately N$ 640/month.

[3] The largest source of housing finance in Mexico is the pension fund loan programs. The pension fund for private sector workers is INFONAVIT (Instituto del Fondo Nacional de la Vivienda Para Los Trabajadores). Employers pay a 5% contribution to the INFONAVIT fund on behalf of their workers. Once a worker meets a set of requirements that are based on age, total contribution to the fund, number of years worked and number of dependents, he or she is allowed to apply for a loan. FOVISSSTE (the pension fund for public sector workers) works similarly to INFONAVIT. FOVI (Fondo de Operación y Financiamiento Bancario a la Vivienda) receives funds from the Central Bank and multi-lateral lenders, and refinances or guarantees the mortgage loans by primary market lenders.

[4] The banks originate FOVI loans. FOVI will either refinance the loan or provide a partial default risk guarantee (50% to 60% depending on house value). Both the pension plans and FOVI operate with restrictions on the maximum house price and loan amount.

[5] Barry, C., Castañeda, G. and J. Lipscomb, "The Structure of Mortgage Markets in Mexico and Prospects for Their Securitization," *Housing Finance International 9, 3, March 1995* and "Legal and Regulatory Obstacles to Securitization in Mexico," *Housing Finance International,* 10, 4, June 1996.

[6] The DIM was a creative solution to the problems of providing affordable housing finance without bankrupting lenders in a highly inflationary environment. However, the performance of the mortgage is very sensitive to the selection of the initial payment rate and the margin over the index charged by the bank.

[7] With a forecast of a slowly stabilizing economy, a FOVI DIM with no margin originated in 1992 would pay off over a 30-year time period. The bank DIM, with a 5 percentage point margin would not.

[8] Banks can issue UDI deposits as well. Net UDI positions of banks are limited to 40% of net capital.

[9] See *La Reforma*, May 1996. The restructuring will cover most bank loans and some FOVI loans. One reason for the restructuring was to defuse the growing popularity of debtor groups (e.g., *El Barzon*) that have been urging borrowers not to pay their loans. One of the "unfair" practices cited by these groups is the practice of refinancing or deferring interest, resulting in the increase in the outstanding loan balance.

[10] Currently these funds are managed by the Banco de Mexico. Recent legislation has clarified the legal and regulatory treatment of these funds and it is expected that in the near future, management will be taken over by the private sector.