Mexican Autofinanciamientos: A New Source of Housing Finance

by Steven A. Bernstein

A major result of the Mexican economic crisis of December 1994 was the almost complete elimination of commercial bank sources of housing finance. Despite the fact that a significant amount of housing finance continues to be provided through subsidized governmental financing schemes, the middle- to upper-income segments, which relied on the commercial banks, are unable to tap these resources.[1] Thus, a significant gap in the provision of housing finance has developed in Mexico.

In response to this gap, a new financial entity, the real estate autofinanciamiento, or self-financing company, has recently emerged.[2] While these autofinanciamientos are rapidly gaining in popularity, there are significant questions regarding whether they can maintain adequate levels of liquidity.

Mexican autofinanciamientos operate similarly to the mutual savings societies once found in the United States; they also roughly resemble contract saving programs found in Europe. They are, however, unique in their lack of regulatory oversight, which has led to programs that are similar but have costs to the consumer that vary widely.

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Typically, autofinanciamientos assemble groups of people desiring a loan for the purchase of residential real estate into savings pools. Participants make scheduled payments into the pool with the expectation of receiving a loan at some future point in time. Allocation of loans is determined by lottery which begins once the savings pool has accumulated enough funds to make a loan. Subsequent lotteries are held at regular intervals, subject to there being sufficient funds in the savings pool, until all savings participants have received a loan.

The popularity of autofinanciamientos is growing rapidly. The first autofinanciamiento began operation in early 1995, and by August 1996 there were 44 registered with the Secretaria de Comercio y Fomento Industrial (SECOFI), the Ministry of Commerce; almost all of these institutions were operating at least one savings pool. It is estimated that the top five autofinanciamientos are each operating three pools of 500 participants. In addition, there are approximately 20 firms operating two pools with an average of 200 participants each; the remaining firms operate one pool with an average of 200 participants. Thus, by August 1996 there were approximately 19,500 participants in real estate autofinanciamientos.[3] In addition, an unpublished market research report estimated that in 1995 approximately 22% of all nonsubsidized single-family mortgages were provided by autofinanciamientos.[4]

There is a consensus among the autofinanciamientos interviewed for this project that growth will remain very strong for the foreseeable future. Estimates of growth ranged between 100% and 500% per year. While these estimates seem high, given the lack of alternative sources of financing, strong growth is reasonably expected. For example, given a 20% annual growth rate, by the year 2001 autofinanciamientos could originate almost 25% of all single-family mortgages. While these numbers are subject to many caveats, the point is that autofinanciamientos could be a significant player in Mexican housing finance, and their structural problems should be addressed sooner rather than later.

MECHANICS OF THE AUTOFINANCIAMIENTO

Autofinanciamientos operate only with the capital of the savings pool. A pool of 500 or fewer participants is formed. The participants are required to begin saving in a personal trust account administered by a commercial bank. The participant must make an initial down-payment which is typically 30% or greater. Subsequent deposits into the savings trust are scheduled and typically made monthly. Interest rates earned on the pool savings are different from pool to pool. In general, the savings trust typically earns at or below the average bank

rate paid on deposits. This amount is often much less than alternative investment vehicles.

After the trust has been in operation for a period of time (three months is average) a lottery is held and a pre-specified number of pool participants receive a loan from the pool. If there is not sufficient capital in the pool then the lottery is postponed.[5] In some programs a participant can "buy" a higher spot in the lottery by increasing contributions into the savings pool. Loan amounts typically range from N$400,000 to N$1,000,000 with the average amount being approximately N$750,000.[6]

Each company has its own method for charging interest on an outstanding loan. Typically, a fixed rate indexed to inflation is charged on the outstanding loan balance, or the loan carries a variable rate based on an index such as the CETES rate plus a spread.[7] Significantly, some programs charge no interest rate.[8] The interest rate charged on the loans is usually returned to the savings pool in order to increase pool liquidity and shorten the time it takes the remaining participants to obtain a loan.

In a typical program, a borrower is allowed to leave a pool with a penalty of one month's savings. Once the penalty has been paid, all legitimate companies return the borrower's savings balance plus accrued interest. There is no penalty for mortgage prepayment. In the event of mortgage default, the pool administrators can foreclose on any defaulted property in the trust. This is made possible by the Federal Securities and Credit Operations Law, which was amended in 1995 to allow banks to be both administrators and beneficiaries of a trust.

The administrators of autofinanciamientos earn their profits from an upfront (approximately 3%) fee and/or a monthly servicing fee which can range from 1% to 3% per year. In addition, in some programs the administrators keep any remaining savings balance once all loans have paid-off. It is unclear, however, whether there is adequate economic incentive for administrators to maintain a proactive role in the autofinanciamiento. This is a particularly important point in the event of defaults. In order to maintain the value of the savings pool, it is paramount for administrators to be proactive in the recovery of defaulted assets. Arguably, this can be a costly process and it is unclear whether the typical fee structure and legal checks and balances are adequate incentives for pool administrators.

SUSTAINABILITY OF SAVINGS POOLS

The following analysis demonstrates the viability of the autofinanciamiento. Given a set of program parameters (downpayment, lottery frequency, savings pool interest rate and payments, interest rate on the loan and fees) two measures are calculated. First, the cost to the participants is calculated as the implicit interest rate on the loans. Second, the minimum balance of the savings pool is calculated in order to determine the ability of the pool to meet its loan obligations; a value less than zero indicates that the savings pool was unable to generate enough liquidity to operate and thus ceases to function. Together these measures provide a good indicator of the basic economic feasibility of the autofinanciamiento.

The cost-to-the-participant calculation is the average cost for all participants in an autofinanciamiento.[9] It is calculated by discounting the individual loans, which are originated sequentially according to the lottery, back to period one using an opportunity cost of capital equal to 200 basis points more than the assumed savings rate. In addition, two other borrower cash flows are captured. First, during the saving period, the difference between the savings balance invested at the opportunity cost of capital and the actual savings rate is calculated; this is considered a cash payment. Second, the actual mortgage P&I payment is calculated. The internal rate of return of this cash flow is then calculated and is used as the proxy for borrower cost.

The simulations assume 10 participants with an average loan amount of N$750,000.[10] A 30% downpayment is assumed and subsequent payments into the savings accounts are monthly and are equal to 1.5% of the requested loan balance. The purpose of this analysis is to understand the mechanical behavior of a generic autofinanciamiento in the absence of actual market forces; thus, the interest rates are in real terms and are hypothetical. They are not meant to be indicative of current Mexican interest rates. The interest rate on the savings account is 3% and the opportunity cost of capital is 4%. These base assumptions were chosen in order to reflect a typical autofinanciamiento.

Three simulations were run and are summarized in Tables 1 though 3. Each table assumes a different lottery interval and presents the average cost of a mortgage to the pool and the minimum savings balance, given different mortgage interest rates. Lottery timing and mortgage interest rate were chosen as the variables of the simulation because they are the easiest levers an autofinanciamiento has for managing pool liquidity. Savings payment rates could also be changed; however, the consensus is that a monthly payment of 1.5% times the anticipated loan is an affordable amount for the pool participant. A higher amount could lead to payment delinquency problems. Finally, these simulations assume no savings program exit, no mortgage defaults and no mortgage prepayments.

The results of the simulations are interesting. Table 1 summarizes an autofinanciamiento operating lotteries every four months, beginning in month six. At mortgage rates of 3% and 6% the savings pool does not acquire enough capital to continue operation. Raising the mortgage interest rate to 9% results in the savings pool maintaining a small positive balance. This is not, however, a sustainable

institution, given the exceedingly high cost to the consumer, 19.52% per year, and a capital level that could not provide adequate insurance against mortgage defaults.

Table 2 presents the same analysis but with the timing of lotteries increased to every five months. At a mortgage rate of 3% the overall cost to the consumer is only 4.39% but the savings pool maintains only a bare minimum of capital. Increasing the mortgage rate to 6% raises the capital to approximately 50% of an average mortgage. However, the overall cost of the loan becomes high at 13.91%.

An important characteristic of the autofinanciamiento is illustrated in the tables. Raising the interest rate on the mortgage results in disproportionate increases in the overall cost of the mortgage. In the five month lottery scenario (see Table 2), an increase from a mortgage rate of 3% to 6% results in an overall cost increase of over 9.5% and an increase from 6% to 9% results in an overall cost increase of 6.7%. Arguably, a real rate of over 13% is not an economically attractive prospect for the borrower. This is particularly true given the fact that UDI mortgages, which are currently used by commercial banks for restructuring existing loans and will most likely be used when the banks resume new lending, have a fixed real rate between 8% and 10%.[11] It is thus important to minimize the interest rate charged on the loan in order to maintain an economic incentive against pool exit, particularly if the commercial banks resume lending for residential real estate.

Table 3 presents the simulation with six month lottery intervals. The overall cost to the consumer does not change significantly from those presented in Table 2; it increases very slightly. The increase in lottery interval does, however, result in a substantial increase in the minimum savings pool balance. At a 3% mortgage rate there is an increase of 1000% in the minimum savings balance. At a 6% mortgage rate there is an increase of 275%. This can help in the management of defaults, but it forces the pool participants to wait longer for a loan.

The proper balancing of the parameters (lottery intervals, overall cost of the mortgage and savings pool liquidity) presented in these simulations is very critical for minimizing the risk of pool collapse. If minimization of the lottery interval was the sole objective, then a four-month lottery interval could be adopted but at a very high 20.59% annual overall cost to the consumer. In order to minimize the cost, a mortgage interest rate below 9% would have to be used. This would require the lottery interval to be increased to at least five months or more in order to ensure an adequate minimum savings pool balance. This would result in the last participant receiving a mortgage after month 20. Given the need and/or desire to purchase a home and the future availability of alternative financing options, this waiting period may be too long for the participant.

As was noted, the simulations just presented did not factor the effects of savings pool exit (i.e., leaving the pool before a mortgage is awarded) and mortgage defaults. Savings pool exit is the lesser of the two problems but is still potentially dangerous in that it can lead to the collapse of the autofinanciamiento. Every time a participant exits from the pool the average interval between lotteries is increased slightly and the overall cost of the loan increases. As long as the overall cost of the loan is below alternative financing costs, the probability of exit is minimized. However, as the cost increases and approaches alternative

Table 1. Lottery Timing: Four Month Intervals

Mortgage Rate	*3%*	*6%*	*9%*
Cost to Pool	4.14%	12.49%	19.52%
Minimum Savings Balance	(439,270)	(127,420)	69,239

Table 2. Lottery Timing: Five Month Intervals

Mortgage Rate	*3%*	*6%*	*9%*
Cost to Pool	4.39%	13.91%	20.59%
Minimum Savings Balance	59,822	362,761	741,942

Table 3. Lottery Timing: Six Month Intervals

Mortgage Rate	*3%*	*6%*	*9%*
Cost to Pool	4.80%	14.68%	20.83%
Minimum Savings Balance	612,102	996,353	1,339,054

financing costs, the incentive for exit will increase.

This effect could be magnified if the alternative financing source is immediate (e.g., a bank loan). Thus, the exit of a few participants could start a "domino" effect in which the pool rapidly collapses. Since there are currently few, if any, alternative sources of financing, this is not a problem. However, the commercial banks will undoubtedly resume lending, possibly in the near future, and it is in their best interest to try to attract the savers in the autofinanciamientos, particularly given that the autofinanciamiento participants have at least the start of a downpayment available.

Mortgage defaults present a much more significant problem. A default essentially erodes the accumulated savings of the pool participants that have not yet received a mortgage. Thus, given defaults, savers will have to wait longer between lotteries; and they will have less equity, vis-à-vis accumulated savings, once they receive a loan. In addition, the same dynamic that exists with savings program exit could ensue and the pool could unravel. While in many countries partial recovery of defaults is the norm, it is uncertain despite the latest legal developments whether default recovery is feasible in Mexico. Eviction proceedings can take a number of years and courts tend to favor debtors. Even if partial recovery of the asset is obtained, the basic nature of the autofinanciamiento is that it is timing sensitive: any delay in the intervals between lotteries increases the probability that the autofinanciamiento will unravel.

CONCLUSION

Given appropriate loan and saving parameters, *prima facie* the autofinanciamiento is a feasible alternative for housing finance. However, given its potential sensitivity to defaults and savings pool exit, it begins to look problematic. While automobile autofinanciamientos have been fairly popular and successful over the last decade, there have been pool failures. A failure of a real estate autofinanciamiento would be even more significant, given the magnitude of the loans.

If real estate autofinanciamientos are to remain viable, a number of difficult hurdles must be overcome. These include proper pricing of the savings/loan, minimization of lottery intervals, incorporation of effective penalties for savings withdrawal, implementation of strong legal and/or economic incentives for the administrators of the pools to do their jobs effectively, and augmenting the savings pool with additional sources of capital.

NOTES

[1] The availability of housing finance in Mexico is limited to the formally employed sector, which accounts for approximately 46% of the population. Within the formal sector the availability of housing finance is extremely segmented. Finance is available mainly to low- and moderate-income households via government and quasigovernmental programs. Before the 1994 crisis, finance was also available to the top 4% to 8% of the income distribution though commercial banks.

[2] Autofinanciamientos have existed in Mexico for over 10 years but until 1995 were used only to finance consumer products such as automobiles and large household appliances.

[3] These numbers were rough estimates provided by Patrimonio Activo, a Mexico City-based autofinanciamiento.

[4] Source: Autofinanciamiento Habitat 2000, Mexico City.

[5] Pool capitalization is determined by the respective autofinanciamientos and not the SECOFI.

[6] 1996 Pesos. The exchange rate in August 1996 was approximately N$7.5/$U.S. The average loan size is considerably larger than those available from other lenders, suggesting that autofinanciamiento participants have above average income.

[7] The CETES is a 28-day government treasury bond.

[8] Zero interest rate loans are sometimes offered by developer-run autofinanciamientos as an incentive to purchase current housing inventory. It is likely that the discount on the loan is factored into the cost of the home.

[9] It is important to note that the longer one waits for a loan, the higher the cost, as long as the borrower's opportunity cost of capital is higher than the savings rate.

[10] While the typical autofinanciamiento has 200–500 participants, this analysis was performed with 10 for the purpose of modeling tractability. The results of this analysis can be applied to larger pools.

[11] A UDI mortgage is a price-level-adjusted mortgage. The instrument can be thought of as a standard fixed-rate mortgage with the payment and balance increased simultaneously given increases in inflation. Thus, in real terms the instrument behaves like a standard fixed-rate instrument; but in nominal terms it negatively amortizes.