Housing Finance in Chile:

The Experience in Primary and Secondary Mortgage Financing

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Foreword

Since securitization was first popularized in the United States' mortgage markets, the tool has gained attention world wide. The role of securitization of housing loans in promoting secondary markets for mortgages has inspired developing countries to explore the use of this technique to increase funds available for housing finance and reduce significant housing shortages. Developing countries recognize that a vibrant secondary mortgage market can provide distinct benefits including, among others, a deeper capital market, housing policy that responds to the needs of the private sector and reduced risk exposure for industry participants.

Standardization and the existence of an active primary market are important prerequisites for the development of a successful secondary mortgage market. The standardization of loan applications, credit policy, property evaluation and loan underwriting is particularly important to lower transaction and processing costs. Moreover, if a regional approach to mortgage intermediation is adopted, primary market standardization becomes paramount, and additional challenges may include managing currency and risk and integrating monetary policy.

This paper presents the experiences of the housing finance market in Chile. It was first presented at a regional conference on the development of mortgage securitization held at the Inter-American Development Bank. The paper focuses on the evolution of housing finance in Chile, including the role of the government and the development of the secondary market for mortgages with a link to the growth of institutional investors. The paper also presents some of the key lessons garnered from the Chilean experience with respect to the role of housing market infrastructure and risk management.

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Housing Finance in Chile

Term financing remains scarce in Latin America due to a limited supply of loanable funds with final maturity of over one year. This has been a perennial deterrent to the process of capital formation in the region, in particular undermining the development of long-term housing finance, which traditionally requires amortization spans of 10 to 30 years to have a massive reach. This scarcity of adequate funding—in the face of clear signs of ample housing demand—appears to be a major factor fueling the housing shortage across the region.

Since at least 1989, Chile has successfully reduced the housing gap, this in large part the rapid growth experienced by the economy since the mid-eighties and the end of the external debt crisis of 1982-85. In addition, the state's strong and permanent political commitment to solving the housing problem, has translated into an active and direct government housing program for lower-income families, accompanied by substantial fiscal budget allocations. For middle-and-higher-income families, the source of financing has been rapidly expanding local financial markets. This has included the development of a solid capital market with new institutional investors providing the necessary underpinnings for long-term financing.

With a population of about 15 million and a supply of housing equivalent to 4 million units, Chile has a housing population density of 3.7 people, an improvement over the figure of 4.1 people per housing solution in 1992. At the time of the 1992 census, 20 percent of families were living in dwellings that did not comply with minimum basic standards. Although the housing gap is difficult to establish, government estimates indicate that the country requires 82,000 new housing solutions a year in order to accommodate current rates of new family formation and avoid a further widening in the gap. Levels of construction above this figure also mean that some of those Chilean families still living in shantytowns and other informal housing arrangements are able to move up to dwellings meeting minimum standards.

During the last three years, the average supply of new housing reached 135,000 per year. Even at these construction levels, Chile must persevere for several more years for its long-standing housing shortage to disappear entirely. However, the tide appears to have turned for the good and the social benefits are being reflected in important improvements in the material quality of life of Chilean society.

As suggested earlier, the provision of housing solutions in Chile rests on two separate but related pillars. On the one hand, there is government action through a demand-oriented subsidy-cum-financing program for basic housing that favors lower-income families. On the other, there is the competitive marketplace, where private demand and supply interact, mostly for housing priced above US$10,000. In this market, banks and other financial companies offer a variety of long-term financing plans for housing acquisition. Some 58% of the families that acquired a new dwelling in 1997 found financing in this competitive market. From the perspective of capital market development, this fully private segment of the housing market—that is, that supplying housing finance to families considered creditworthy by loan originators—is clearly the most relevant, as dwellings traded in it are of a higher value and normally involve higher levels of financing. As in the case of new housing, financing for the growing although still not fully developed market for previously-owned homes often originates in the financial markets, which adds depth to the intermediation process. Thus, the sections that follow will place most of the emphasis on market driven financing for housing, while recognizing the government's role. The government's effect as a source of financial distortions, particularly when it comes to the lowest priced housing units, is of particular concern.

Today, Chile's financial markets are able to offer housing finance for terms of up to 30 years, with most of the private lending concentrated in the 15 to 20 year range. Mortgage financing was again available in Chile in the seventies following the introduction of long-term inflation-indexed instruments by the now defunct savings and loan institutions. But it was only in the mid-eighties, following the consolidation of the private pension system introduced in 1981, that long-term housing finance took off decisively. Since then, the presence of these and other well-established institutional investors has made a major contribution to the capacity of the capital market to absorb mortgage-backed securities. The aggregate portfolio of housing securities that these investors now hold is equivalent to US$8.75 billion. The leading originator of mortgage-backed securities is the universal banking system prevailing in Chile, where the State Bank ("Banco del Estado") concentrates on supporting government housing programs aimed at lower income families.

Many factors have contributed to the development and maturing of housing finance in Chile. This process is, indeed, not the result of a single component but rather of a well-balanced, complex mix of economic, political, legal and financial ingredients designed to meet the characteristics of Chile's housing sector. Nevertheless, Chile's experience can offer lessons of interest for future efforts to develop housing finance markets in the region. An effort will be made to focus on some of the weaknesses of the Chilean model, to avoid repeating the same mistakes elsewhere.

In the sections that follow, emphasis will be placed on analyzing elements and developments that have contributed to gains in the financial intermediation process, from the perspective of both market efficiency and penetration. Thus, the assessment that follows will try to establish whether lending risks have been reduced over time and whether the different risks involved in the financial intermediation process have been properly placed with those best able to assume them. In essence, the analysis will try to identify the leading factors behind the perceived improvements in efficiency and effectiveness of financial markets. This will allow an assessment of the sustainability of the housing finance system currently in place in Chile.

Characteristics of the Housing Finance Market

According to the 1992 census, there were then 3.26 million dwellings in Chile. It is estimated that by the end of 1998 there were some 4.05 million dwellings overall. Chile's population is largely urban, with over a third of the country's inhabitants concentrated in the Greater Santiago metropolitan area. The other large urban centers are Valparaíso-Viña del Mar and Concepción-Talcahuano. All told, 85% of the population lives in cities, of which the three mentioned account for close to 70% of those living in urban areas. This is where demand for new housing is concentrated, construction is taking place and most existing dwellings are located.

Historical data show that the state and the private sector have both played important roles in satisfying new housing demand. The recent figures in Table 1 give an overview of supply and financing sources for new dwellings at the national level.

The role of the state in the provision of new housing will be discussed in more detail later. However, it is clear from these figures that

Table 1 - Chile: New Housing Construction 1994-1997

Number of Units

	YEAR			
	1994	1995 P	1996 P	1997 P
1. Government Financed Construction	57,483	56,706	65,247	57,808
1.1 Basic Housing Program	24,996	24,799	32,927	27,004
1.2 Special Program for Workers	15,270	15,698	13,400	11,587
1.3 Rural Subsidy Program	6,944	7,539	5,454	7,328
1.4 Alternative Housing Solutions	10,273	8,670	13,466	11,889
• Progressive Housing Program	8,869	8,487	13,427	10,389
• Sanitary Infrastructure Program	1,404	183	39	1,500
2. Privately-Driven Construction	67,149	78,816	78,467	79,235
2.1 Unified Subsidy Program *	21,370	21,430	22,029	19,897
2.2 Unsubsidized Housing	45,779	57,386	56,438	59,338
Overall New Housing Solutions	**124,632**	**135,522**	**143,714**	**137,043**
Memorandum item:				
» Average housing surface (m2)	59	63	65	68

P= Preliminary figures
Sources: Instituto Nacional de Estadísticas, Ministerio de Vivienda y Urbanismo and Cámara Chilena de la Construccion.

* Dwelings are supplied freely by the market, but the government subsidizes buyers directly through vouchers.

government policy and its direct participation in the market for new dwellings is highly relevant in Chile. Indeed, approximately 44% of the new housing solutions built during 1994 and 1997 were heavily subsidized and received financing from the Ministry of Housing (MINVU) or its agencies. In addition, another 16% of new housing received at least some government subsidy under the Unified Subsidy Program—although these dwellings were supplied in the open market by the private sector. It is likely that the state will continue to play an important role, at least for as long as the housing gap remains significant. While this remains the case, it is most likely that the need to provide proper housing to all will continue to be a high political priority.

Purely private demand for new dwellings—that is, unsubsidized— demand represented about 41% of new housing construction between 1994 and 1997. This market segment has grown rapidly for some years now resulting in a significant gain in market share. The sustained expansion and deepening of financial markets has been crucial to this development, which in addition has benefited from fast economic growth, declining interest rates and low inflation. All this has been conducive to private housing construction and strong demand for new housing. In addition, dwellings sold to beneficiaries of the Unified Subsidy Program—which provides direct subsidies to the buyer—should also be included as part of private demand. When this is done, market-driven housing supply for the four-year period 1994-97 goes up to 56% of all new housing solutions, compared 44% during the previous four years (1990-93). The observed gains have had a significant, positive impact on the development and growth of mortgage financing in Chile.

Market-driven housing supply clearly represents the most expensive segment of the market. The average price of a dwelling is several times that of the housing offered under government sponsored programs. The latter are homes in the US$6,000 to US$8,000 range with dwelling areas between 35 and 40 square meters. Prices for market-driven housing, on the other hand, start at around US$10,000 and have a total surface area of about 48 square meters (this is the case of the lowest tranche of the Unified Subsidy Program). Unsubsidized housing, which is more typical of the available private supply, is normally offered in the price range of US$40,000 to US$80,000. These homes have an average surface area of between 100 and 140 square meters. Private housing units (up to but not included the largest units) can benefit from the attractive tax advantages introduced by Decree-Law 2 which waives property taxes for smaller dwellings.

The existing homes market has been developing vigorously in recent years, although it still remains a fraction of the market for new housing. The greater degree of sophistication gained by financial markets and real estate agencies has particularly benefited the higher end of the price range, where most creditworthy buyers are concentrated. But even in this market segment, existing homes sold with the assistance of real estate agents —which normally charge both the buyer and the seller a 2% commission— did not quite reach 11,000 units in 1997. Most transactions at the lower price ranges continue to take place directly, without real estate agents.

The Role of the State

The role of the state in Chile's housing sector historically has been substantial, particularly in providing housing solutions to the poorest families. The main premise of government policy has been that the state has a responsibility to play a direct role in supporting and finding housing solutions for the poorest families. Although this notion has remained unchanged for many decades, the way that the government exerts its influence has evolved over the years. The trend has been toward a more market-friendly approach to government intervention. Today, government programs focus on directly subsidizing housing demand by the poor and providing or facilitating long-term financing for the lowest priced housing and for families not considered creditworthy by the financial sector.

In addition, MINVU directly contracts out housing construction with the private sector under the Basic Housing and Progressive Housing programs. In this case, private construction companies compete for building contracts subject to government specifications. The bidding process is such that construction companies are responsible for proposing the design, the number of units for a given budget and, in some cases, the exact location of the construction site within a general geographic area. In other cases, the government buys and provides the construction site as part of a given project.

Direct housing subsidies have been in place for many years in the form of nontradeable vouchers that can only be used to help defray the cost of eligible housing. They are provided to first time owners based on four considerations: a) prior savings effort, b) poverty level of the family, c) family size, and d) location (in order to meet geographic supply constraints). Vouchers are valid for up to 21 months after they are granted. There are differences and specific requirements for each of the seven government programs—the six listed in Table 1 plus the newly introduced Housing Lease Program. However, the basic premise is that the poorest families and the lowest priced housing get the highest valued vouchers. For example, the Basic Housing Program, which offers the largest amount of housing to the poor, provides vouchers equivalent to 70% of the value of the dwelling with a ceiling equivalent to some US$4,350 per family. Families qualifying for the third tranche of the Unified Subsidy Program which benefit less than 1,000 families a year for dwellings costing up to US$46,500), receive vouchers for 6.7% of the purchase price.

Families compete vigorously for the right to subsidy vouchers. Points are assigned for each one of the four factors mentioned above. However, in practice the only variable that the family can really control is the prior savings effort, which can make a significant difference at the time of applying for a subsidy. This has an important impact on the financial discipline exercised by poor families and on housing finance overall. There is an elaborate legal and regulatory framework to channel these savings, which are mostly kept at commercial banks where they earn a real interest rate. Savers sign contractual savings agreements with participating banks where they promise to make monthly deposits for a given period of time (e.g., 18 months). Participating banks are responsible for verifying that the beneficiary has met the prior savings requirement and then for informing the MINVU. Banks release the accumulated savings when the time comes to make the down payment on the subsidized dwelling.

Whether the mechanism in place to meet and certify prior savings actually promotes additional national savings is a matter of debate. However, what is clear is that the number of savings account opened for the purpose of accessing subsidized housing has increased exponentially during this decade, facilitating the savings process and increasing financial intermediation. At the end of 1997, there were 1.38 million of these savings accounts with accumulated balances equivalent to some US$686 million. The contractually agreed to eventual savings expected for all outstanding accounts was US$1.8 billion or US$1,305 per account. However, the partial information available suggests that the initial enthusiasm for opening savings accounts is not matched by the actual savings record. In a sense, it is a relief for the government that not all savers are living up to their commitments, since the number of available subsidy vouchers each year—less than 80,000 in 1997—is considerably less than the number of new savings accounts opened. On average, there were 129,000 new housing savings accounts opened yearly in the period 1990-1997.

This prior savings program is considered a successful and should be a key component of any housing program that subsidizes demand. In contrast, the experience with providing term financing to complete the portion of the purchasing price of a dwelling not covered by the direct subsidy or accumulated savings has been highly disappointing. The government has been acting as a long-term lender for housing for many decades and its recovery and collection record has been dismal over the years. Figures are hard to come by, but surveys conducted by MINVU indicate that most of the term financing provided in connection with subsidized housing ends up becoming one more subsidy. This hidden, unintentional additional subsidy (masked as a loan) has become the rule rather than the exception. This, in itself, should be enough to get the government out of the lending business. Indeed, the government does not have the technical ability nor the political will to demand timely servicing of the mortgage loans in its portfolio or those guaranteed by the state.

In the past, the government has tried to resolve the arrears problem by entering into repeated general, across-the-board debt restructuring exercises without proper consideration of the payment capacity of each debtor. In essence, few of those granted a loan adequately serve their contractual obligations. It is true that the government provides loans to individuals normally considered not creditworthy by financial institutions. However, there are strong indications that there is no inherent income shortfall that impedes debtors from servicing their loans. Not only have real salaries grown substantially in Chile for many years, but new owners are careful to pay promptly other monthly bills, such as electricity and telephone. These public utilities have much less tolerant arrears policies in place. In contrast, government efforts to recover due payments or collect by exercising its rights through the court system have been minimal. For example, despite arrears in the order of 65% to 75% there have been few efforts to repossess properties.

So far, government reluctance to deal with the arrears problem has enhanced an already large moral hazard. There is a common feeling that only “fools” service their housing debts with the government. This has important implications for the future development of the financial system and the future creditworthiness of poor working families. Decisive action to improve the debt servicing record of those receiving subsidies is crucial to increase the financial resources available to resolve housing shortages. In part, the problem results from a lack of incentives for efficient loan recovery on the part of MINVU. Fresh budget allocations are made each year to MINVU for its housing programs. Any loan recoveries they make revert to the government’s central account. Perhaps, they should stay as part of the pool of funds already managed by MINVU, so as to provide a clear incentive to their collection effort.

A sign of the serious market distortions brought about by the lack of financial discipline at the lower end of the housing market is the scarcity of rental properties offered by the private sector at the basic housing level. As a result, rental units are scarce and expensive.

This makes it very difficult for many families to complete their prior savings agreements, as their savings capacity is diminished by the high rents they have to pay. In order to correct some of these market imperfections and to facilitate access to housing ownership, while avoiding the moral hazard of poor loan servicing, the government has introduced the Housing Lease Program. This program allows low-income families to rent a basic housing unit under a plan that includes a smaller down payment and an agreement to purchase the dwelling at some future date. The lessor is a private company that holds the title on the property.

Under this new program, the government releases the subsidy over time and in small amounts coinciding with each monthly rent payment made by the beneficiary, thus encouraging the timely servicing of the rental contract. As of July 1998, the six private companies offering this service had signed 650 rental agreement including the option to buy. The government expects that this program will gain in significance in coming months. It is also expected that it will keep rental prices at more reasonable levels and in line with the option of buying a property.

Initial financing needed to start this new leasing mechanism was secured with a US$15 million facility funded with USAID resources. Private leasing companies bid for access to this pool of financial resources. This funding has facilitated the purchase of dwellings that were later offered to low-income families under the Housing Rental Program.

All in all, the government housing programs have had a negative impact on to the development of the first and secondary mortgage market. Indeed, the absence of financial discipline resulting from MINVU's poor collection practices has exacerbated the problems that lower income families have in accessing financial markets. In addition, this has resulted in an unusually low private supply of new housing for lower income families. As a result, the potential reach of mortgage-backed securities and its impact as an instrument for meeting the housing finance needs of a large segment of Chilean families has been reduced. In a sense, it has perpetuated the need for a strong government presence in the supply of housing solutions for low-income families.

The Evolution of Housing Finance in Chile

Housing finance through the issuance of mortgage bonds has had a long history in Chile. Specialized mortgage banks following the French model started to operate toward the end of the last century. It was an active business until 1930, when mortgage credit represented about half of the loan portfolio of private banks. These bonds were issued mostly in local currency and at fixed interest rates. However, the Great Depression and persistent high inflation, a main feature of the Chilean economy until recently, all but killed housing finance. Only the legal framework for mortgage-backed securities remained in place, which was fortunate because it made it easier to restore mortgage bonds as the leading security for housing finance decades later.

The National Savings and Loan Association system was established in 1959. The system introduced long-term mortgage-backed loan operations indexed to inflation. Indexation was the key to attracting private deposits in an inflation-prone country such as Chile. Savings and loan institutions made good use of their monopoly to issue new instruments denominated in "Unidades de Fomento" (UF), a unit of account adjusted daily to reflect increases in the Consumer Price Index over the previous month. The UF also allowed savings and loans institutions to lend long term at fixed real rates. By doing so, they were able to automatically capitalize the inflation component of an equivalent nominal interest rate. This drastically reduced the near-term cash flow needed to service long-term mortgage loans in a high inflation environment. In fact, these inflation-indexed credits have equal monthly installments in real terms, so each nominal payment goes up at the same rate as inflation, measured by the CPI, with a lag of one month.

Although demand for indexed long-term loans proved sensitive to accelerating inflation, at least it stayed strong enough to justify the existence of savings and loan institutions during periods of high inflation. (In fact, families did not have any other option for long-term housing finance.) This experience showed that, in an uncertain macroeconomic environment, demand was much more resilient than the supply of loanable funds. In essence, increases in nominal salaries offered a reasonable hedge against double digit inflation, so the demand for housing did not disappear entirely. The supply of funds, on the other hand, is highly sensitive to inflation and uncertainty, therefore, the protection offered by the UF proved essential to attracting housing finance.

Despite some difficulties, the National Savings and Loan Association system worked reasonably well until 1970, when the mismatch between the short-term nature of its deposits and the long-term maturity profile of its loan portfolio began to create more serious problems. These problems plus political instability and three-digit inflation led to the final collapse of the mortgage lending system in the early seventies. Attempts to develop a robust secondary market for the mortgage-backed loans in the books of savings and loan institutions never prospered and a market for mortgage-backed securities did not materialize. The attempts made were limited to loan sales linked to short-term repurchase agreements, which were used by savings and loan institutions to raise liquidity in times of need.

Chile's current housing finance system dates from 1976 with the introduction of a universal banking system and the authorization for banks to offer UF-indexed mortgage-backed bonds, time deposits and other term obligations. Since then, the banking system has been the main originator of housing loans, mostly financed by the sale of long-term mortgage-backed bonds in the Santiago Stock Exchange. In recent years, these bonds, issued as an obligation of the originating bank, have been the leading long-term fixed-income securities traded in Chile. They are primarily bought by local investors and increasingly by new institutional investors whose activities reflect the rapid development of the country's capital market. However, the reintroduction of mortgage bonds in 1978 after an absence of almost 50 years required the establishment of an initial purchasing power by the Central Bank. Eventually, the capital market came to accept these instruments, which received a decisive boost with the introduction of the private pension system in 1980. Pension funds and life insurance companies (that provide life insurance protection to workers and sell annuities to them when they retire) have a natural appetite for these safe, liquid and long-term financial instruments. Today, bank-issued mortgage-back securities (or mortgage bonds) are the backbone of housing finance in Chile.

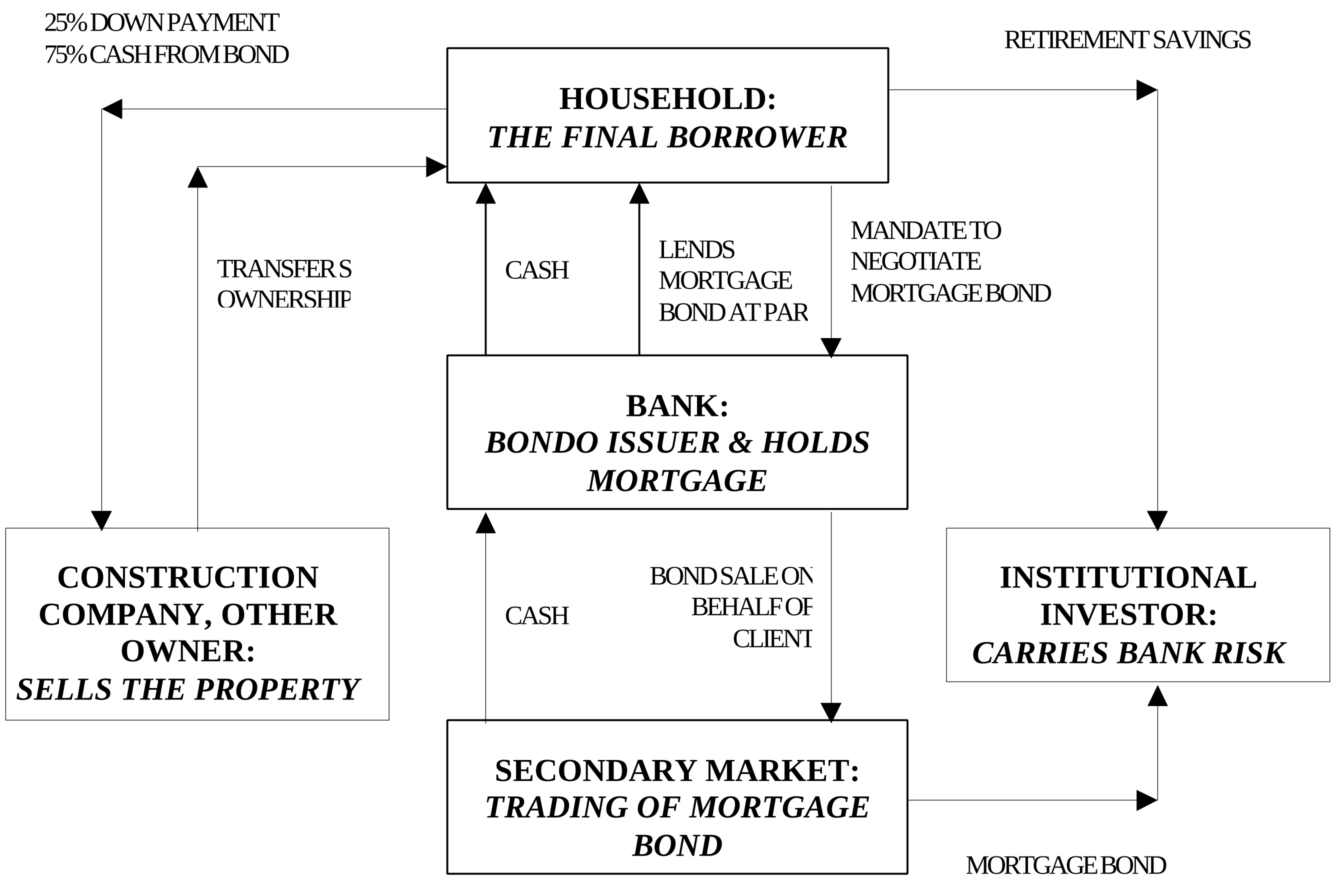
A second financial instrument was introduced recently. The "endorsable mortgage credit" or EMC for short (*mutuo hipotecario endosable*) was introduced in 1986 and its main originators are banks and mortgage credit companies (*Administradores de Mutuos Hipotecarios Endosables*). The endorsable loans are backed by a mortgage and are similar to U.S. mortgage loans. EMC have become particularly attractive to life insurance companies, which since 1989 have developed into important players in Chile's capital market. These institutional investors have shown a growing appetite for EMC, which meet their needs for long-term financial investment denominated in UF and payable in local currency.

The Mortgage Bond

The outstanding stock of mortgage bonds (*Letras de Crédito*) stood at US$10.68 billion at the end of 1997. As already explained, these bonds represent liabilities of the issuing bank. The origination process and main characteristics of these securities are described in Title XII of the Banking Law, which deals with mortgage-backed lending by banks. The bank's client guarantees the servicing of the bond by offering as collateral a specific, identifiable property. Normally, the property collateral is the same as the one being purchased by means of the mortgage bond, but this does not always have to be the case. The face value of the issued bond can be for up to the equivalent of 75% of the market or appraised value of the property given as collateral. Mortgage-backed lending operations by banks can be either for general financing purposes or for housing finance, which at the end of 1997 stood at US$6.23 billion or 58% of the total stock of mortgage bonds outstanding. Chilean mortgage bonds are bearer securities issued in series of equal interest rate, currency of denomination and amortization schedule.

A bank issues a bond in order to provide liquidity for the client. In essence, the issuing bank "lends" the mortgage bond to the clients, rather than directly lending the money. Thus, once the mortgage bond has been issued, it has to be sold to secure the needed liquidity. Normally, these mortgage bonds are offered for sale in the securities market (the Santiago Securities Exchange). The issuing bank is not required to guarantee a price for its bonds, which are sold at market value. Chart 1 shows the main players and their interrelations when a mortgage bond is used in con-

CHART 1: MORTGAGE BOND FINANCING



nection with a mortgage-backed lending operation.

More details about the Chilean mortgage bond are provided in Box 1 at the end of the text. However, it is worthwhile here to highlight some of their advantages and disadvantages as instruments for housing finance. Some of the advantages are:

- Mortgage bonds are perceived to be a better credit risk than other liabilities because they have a preferred treatment if the bank experiences liquidity difficulties. Thus, their interest rates normally lower than alternative sources of term financing.

- The credit risk associated with a mortgage bond is much lower than that of the particular lending operation behind it and the homebuyer shares in the benefits derived from the bond's low interest rate. Indeed, there is a great deal of competition among banks for the housing finance business, which has reduced spreads considerably for mortgage bond-financed operations in recent years.

- When mortgage bonds are used for housing finance, the securitization of each lending operation is automatic, on a one-by-one basis. This simplifies the process of securitization, since there is no need to pool mortgages in order to securitize them. This is particularly attractive when capital markets lack financial depth or sophistication.

- Mortgage bonds issued by core Chilean banks have wide acceptance in the market place, which provides them with ample demand and liquidity in the local secondary market. Prices for these bonds and, consequently their implicit interest rates, tend to show less market volatility than most other fixed-income securities of similar duration.

However, there are also some disadvantages:

- There is uncertainty for the bank's client about the exact amount of money the sale of the bond will bring when it is sold in the securities market. If the bond is sold below its par value—which is not uncommon—the homebuyer will have to get additional funds from other sources in order to complete financing of the home. (However, sometimes banks are willing to guarantee the par value or buy them for their own investment portfolio.)

- The maximum loan-to-value ratio allowed by law is 75% of the appraised or market value, whichever is lower, of the property offered as collateral. For many new homebuyers this means a prior savings effort, independently of how easily they are able to meet monthly mortgage payments, which cannot go above 25% of their income in the case of mortgage bond financing. Often, this high level of prior savings means that new homebuyers must postpone their purchases.

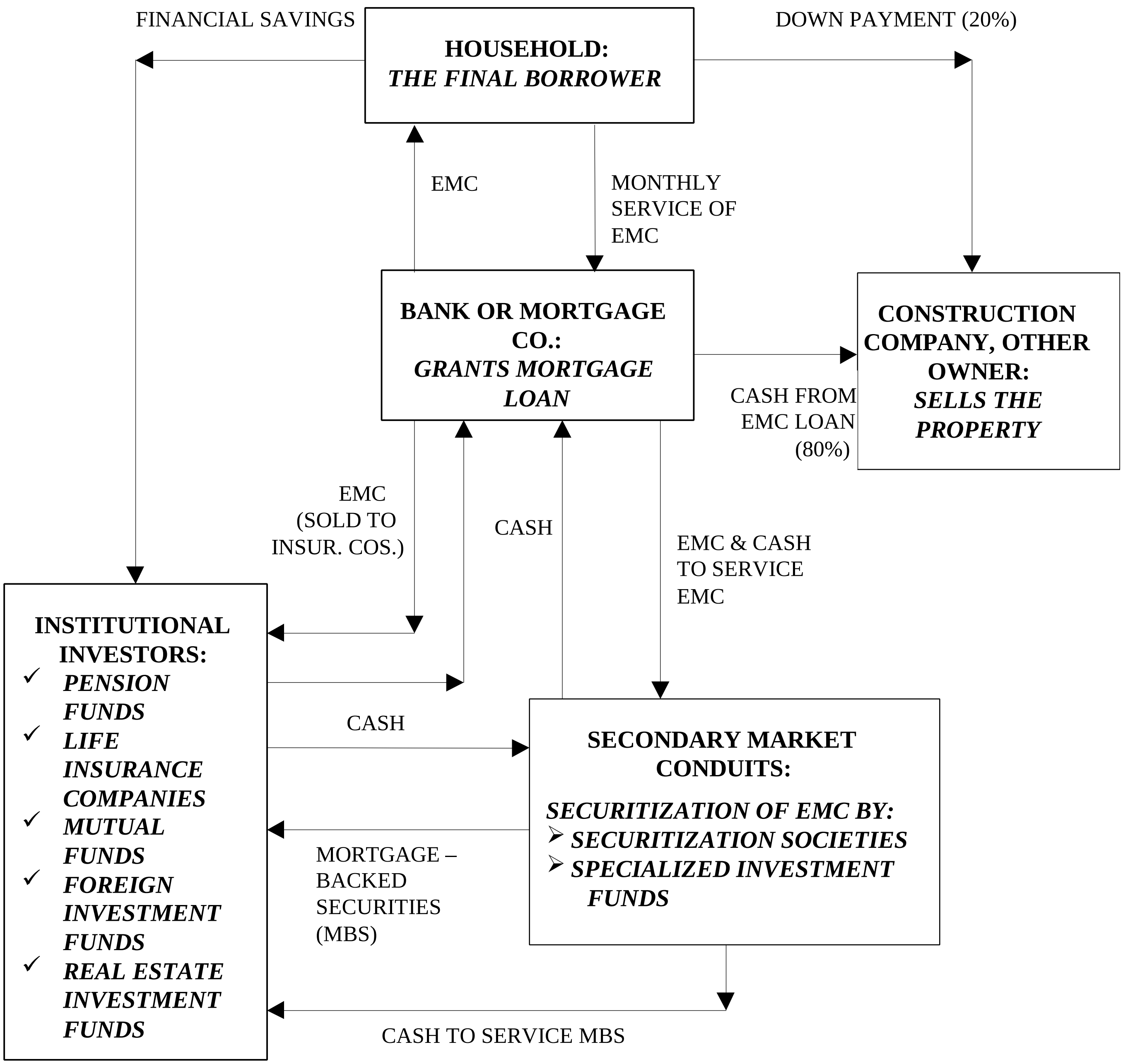
- Outstanding mortgage bond balances remain a liability of the issuing bank until extinguished. The same is true of the associated loans registered in the asset side of the balance sheet. This means that the bank has to maintain sufficient capital and loan-loss reserves to cover the risk associated with their mortgage loans, which cannot be sold to a third party. This tends to limit the asset expansion capacity of banks issuing bonds, which can translate into higher intermediation spreads and, consequently, higher interest rates for the homebuyers.

The Endorsable Mortgage Credit

Endorsable mortgage credits or EMCs are loans backed by a first mortgage or equivalent collateral (see Box 2 for a more detailed description). These financial instruments, which were designed to be easily transferable, can be originated either by banks or by mortgage credit companies. The latter are single purpose financial companies regulated by a special law, whose business is mortgage financing via EMCs. This financial instrument is newer to the market than the mortgage bond, although it has gained acceptance rapidly in recent years, having reached an accumulated stock of US$2.42 billion at the end of 1997. The laws that regulate EMCs operations are issued by the Superintendence of Banks, which follows the general guidelines provided by Title XI of the Banking Law dealing with the financial operations of commercial banks.

EMCs share many of the features of loans financed by mortgage bonds, although they differ in a few important respects. In particular, current norms limit the maximum debt-to-property value ratio to 80% and cap the monthly payment-to-income ratio at 30%. These ratios are more generous than those al-

CHART 2: ENDORSABLE MORTGAGE CREDIT (EMC) FINANCING



lowed for lending using mortgage bonds. Another difference is that EMCs are not considered securities as are mortgage bonds. EMCs were designed to be sold to authorized institutional investors, mainly secondary market conduits that would proceed to bundle and securitize them. However, originators today tend to keep large amounts of EMCs on their books.

Most of the current interest in purchasing EMCs comes from life insurance companies, which have enough purchasing power to diversify the risk implicit in individual EMCs by the sheer number of EMCs in their portfolios. The securitization of EMCs is an incipient practice in Chile, although the Securities Law addresses the issue in detail. However, the current legal framework is still unfriendly, which has slowed the process toward a greater securitization of EMCs. A detailed description of the avenues open for securitization of EMCs and some of the perceived limitations of the current scheme appears in Box 3 at the end of the text. Chart 2 depicts the main players and their interactions in the marketplace when mortgage financing is done through EMCs. Chart 2 uses housing finance as an example, although EMCs are also often used for general purpose financing.

As in the case of mortgage bonds, there are advantages and disadvantages associated with EMC financing. The advantages are the following:

- Originators can easily transfer EMCs to eligible institutional investors by simply endorsing them. This allows originators to erase these assets from their balance sheet, which tends to lower the cost of financial intermediation, benefiting also the homebuyer.

- The fact that EMCs are less constrained in terms of the loan-to-value and payment-to-income ratios than the mortgage bond, allows the originator more flexibility to fashion the mortgage loan to customer needs.

- EMCs allow potential homeowners to know for sure the amount of cash they are going to receive from the originator, which is not always the case with mortgage bonds.

Some of the disadvantages that exist in the current Chilean environment are:

- The securitization of EMCs is still cumbersome and difficult. However, the government is seeking modifications to the Securities Law that are expected to facilitate securitization in general, including that of EMCs.

- In part because of the current difficulties with securitization, EMCs do not have a wide market reach; they are mostly used for commercial real estate transactions and for higher priced homes.

- EMCs tend to be more expensive for the average homebuyer than mortgage bonds. However, eventually, when securitization of these financial instruments becomes the norm rather than the exception, EMCs will likely be able to compete efficiently with mortgage bonds in a broader price range of housing transactions.

Table 2 - Mortgage-Backed Housing Financing by Originator

(In US$ million at 1997 prices, stock at year end)

	BANKS										MORTGAGE CREDIT COS.		TOTAL
	Outstanding Mortgage Bonds♦				Endorsable Mortgage Credits		Other Mortgage-backed Lending by Banks				Endorsable Mortgage Credits		
Year	State Bank#	Other Banks	Total (1)	%	Total (2)	%	State Bank	Other Banks	Total (3)	%	Total (4)	%	(1)+(2)+(3)+(4)
1986	297	1,451	1,748	81%	-	-	171	228	399	19%	-	-	2,147
1987	288	1,494	1,782	78%	-	-	258	254	512	22%	-	-	2,294
1988	293	1,478	1,771	77%	0	0.0%	284	253	537	23%	-	-	2,309
1989	447	1,654	2,101	58%	7	0.2%	660	789	1,449	40%	75.7	2%	3,633
1990	651	1,658	2,309	59%	24	0.6%	654	819	1,472	38%	76.8	2%	3,883
1991	815	1,615	2,430	63%	33	0.9%	535	741	1,276	33%	93.7	2%	3,883
1992	1,002	1,694	2,696	66%	70	1.7%	471	718	1,189	29%	139.2	3%	4,094
1993	1,228	1,948	3,177	70%	114	2.5%	407	674	1,081	24%	166.5	4%	4,538
1994	1,354	2,114	3,468	75%	113	2.5%	291	557	848	18%	186.7	4%	4,616
1995	1,663	2,753	4,415	77%	221	3.9%	256	534	790	14%	276.6	5%	5,703
1996	1,937	3,462	5,399	77%	370	5.3%	209	654	863	12%	398.0	6%	7,030
1997	2,153	4,077	6,230	75%	618	7.5%	170	798	968	12%	482.2	6%	8,299

Sources: "Información Financiera", Superintendencia de Banco e Instituciones Financieras
"Revista de Valores", Superintendencia de Valores y Seguros
The State Bank received in the past collateral for a small portion of its portfolio from the government housing program.
♦ It only includes mortgage bonds issued under the special rules for housing financing.

The Volume of Housing Finance and Principal Players

In addition to the MINVU, the principal originators of housing finance in Chile are banks and mortgage credit companies. From the point of view of the development of capital markets, the latter two groups, including the State Bank, are the most interesting players, since they originate almost all private financed housing operations on the books of 15 banks offering this financial product.

This notwithstanding, endorsable mortgage credits are increasingly becoming an attractive alternative to mortgage bonds. In fact, figures for 1997 show that the stock of EMCs

Table 3 - Outstanding Value of EMCs

By Holders	Stock of EMCs (US$MM)♦ End of 1996	End of 1997
1. Banks	642	1,030
2. Mortgage Credit Cos.	398	482
3. Life Insurance Cos.	601	749
4. Real Estate Investment Cos.	121	121
5. Conduit Cos.	10	39
TOTAL	1,772	2,421

♦ It includes EMCs forhousing and general financing.

home mortgages. Moreover, they keep large amounts of mortgage-backed assets on their books, to the tune of approximately US$9 billion. Table 2 provides a historical perspective and illustrates the rapid accumulation of housing finance assets by these two sets of originators in the last decade. The table also illustrates the point that mortgage bonds have been the most relevant and traditional of the instruments used for housing finance in Chile. Mortgage lending backed by mortgage bonds for direct housing finance stood at US$6.2 billion at the end of 1997. That year alone there were close to 54,000 new housing finance operations that used mortgage bonds. This meant that by year-end 1997, there were over 440,000 outstanding mortgage bond-(including credits for housing and general financing) increased by US$649 million, which is equivalent in value to 42% of the net expansion in outstanding mortgage bonds.[1] However, since the use of EMCs has been concentrated in the financing of more expensive homes, the actual number of operations does not match the participation rate observed when this is measured in value terms.

[1] Mortgage bonds and EMCs are used primarily for direct housing finance. However, they are also commonly used to provide general purpose term financing with a property as collateral. For example, in the case of mortgage bonds, general purpose financing accounted for 42% of all bonds outstanding at the end of 1997. However, even when classified as general purpose, mortgage bonds and EMCs often are used for other housing related needs, such as refurbishing, expansions or for purchasing second properties.

Table 4 - Holding of Mortgage Bonds

Type of Investor	Mortgage Bond Holdings♦ (end-1997, US$MM)	
1. Pension Funds	5,247	49.15%
2. Life Insurance Cos.	2,151	20.15%
3. Other Insurance Cos.	58	0.54%
4. Foreign Investment Funds	3	0.02%
5. Mutual Funds	384	3.59%
6. Other, including Banks	2,833	26.54%
TOTAL	10,675	100%

♦ It includes mortgage bonds issued for housing and general purposes

It should be stressed that the figures in Table 2 are somewhat misleading for assessing the relevance of EMC financing today. This is so because EMC originators often sell them to institutional investors soon after their origination and delete them from their balance sheets. (As already explained banks that issue mortgage bonds have to keep them on their books until they are due). In order to draw a better picture of the relevance of EMCs as credit instruments for mortgage financing, it is necessary to account not only for those held by originators, but also for those in the hands of institutional investors, who acquired them in the secondary market.

The numbers in the Table 3 show that entities other than the originators held some 37.5% of the outstanding EMC balances at the end of 1997, despite the fact that these instruments are not rated securities and each EMC carries a different credit risk. This notwithstanding, a market for them has developed among institutional investors other than secondary market conduits that specialize in the securitization of EMCs. The fact that some 62.5% of EMCs remained in the hands of the originators at the end of 1997 shows that the securitization of pooled EMCs is a business opportunity still waiting to happen in Chile's capital market. Indeed, at the end of 1997 there were US$39 million equivalent in securitized EMCs on the books of investors, the result of the first series of pooled EMCs sold as securities by the only operating conduit company active in the Chilean market.

In contrast, the stock of mortgage bonds issued by banks for housing and general purpose financing stood at the equivalent of US$10.7 billion at the end of 1997 (see Table 4). That year's gain was US$1.55 billion. Practically all of these easily tradable securities are denominated in UF, as is the case with EMC financing. That is, in the inflation-indexed unit of account that is widely used in Chilean financial markets.[2] The figures on

[2] The "Unidad de Fomento" or UF is a unit of account calculated and published by the Central Bank of Chile and based on the variations of the Consumer Price Index (CPI). In the first few days of every month, a table is published by the Central Bank with daily values for the UF based on the variation of the CPI the month before. The daily values of the UF in the table apply from day 10th of the current month to day 9th of the following month. That is, the UF values are lagged some 40 days with respect to actual inflation as registered by the CPI. The UF is used as a second currency in Chile's financial markets, although all actual payments are made in the peso equivalent. For example, instruments denominated in UF and due on August 31, 1998 were converted to pesos at the rate of 14,398.73 pesos per UF.

Table 5 - Mortgage Backed Financing by Type of Instrument

Type of Instrument	Mortgage-backed Financing (US$MM)	
1. Mortgage Bonds	10,675	75.29%
2. Endorsable Mortgage Credits	2,421	17.08%
3. Other Lending by Banks	968	6.83%
4. Mortgage-backed Securities (EMC-based)	39	0.3%
5. Housing Leasing	75	0.5%
TOTAL	14,178	100%

Table 4 show the breakdown of mortgage bonds by type of investor at year-end 1997.

There are other types of mortgage-backed instruments used to finance the purchase of homes. By far the most relevant is being carried out by banks. Other mortgage-backed housing lending by banks appears to have peaked in the late eighties or early nineties, as suggested in column (3) in Table 2. However, it still accounted for some US$970 million at the end of 1997. In the past, banks have used this type of lending to complement the longer-term EMC and mortgage bond financing. For example, this has been traditionally the case when mortgage bonds are sold in the market at a discount over their face value or when banks wish to extend a client a larger loan than mortgage bonds and EMC price/collateral rules allow (75% for bonds and 80% for EMC). Normally, these complementary credits are medium term and use a second mortgage as collateral.

There are no other significant sources of financing for house purchases today. However, mortgage-backed securities and rental housing could prove to be important investment vehicles in the future and supplement available sources of financing. All told, the accumulated stock for all mortgage-backed instruments in the hands of originators, institutional investors and others has been growing fast in recent years. As shown in Table 5, there was some US$14.2 billion in mortgage-backed financing outstanding at the end of 1997.

The Role of Institutional Investors

The growing importance of institutional investors in housing finance in Chile over the last decade is striking. Their presence in this market segment is illustrated by the figures in Table 4, showing the principal players in the capital market. Of the US$14.2 billion equivalent in mortgage-backed financing outstanding at the end of 1997, some US$8.75 billion or about 62% of all mortgage-backed instruments generated were held by institutional investors. Figures for year-end 1997 show that basically 60% of the holdings in Table 3 were in the hands of private pension funds.

Private pension funds in Chile began to be implemented in 1980, following the approval of the Decree-Law 3,500 in November of that year. Pension reform brought in the private sector in full force, delegating to the *Administradoras de Fondos de Pensiones*, (AFPs),

Table 6 - Holdings of Mortgage-Backed Securities by Institutional Investors

(In US$ million at 1997 prices, stock at year end)

	MUTUAL FUNDS		INSURANCE COMPANIES						PRIVATE PENSION FUNDS		FOREIGN INVESTMENT FUNDS		REAL ESTATE INVESTMENT FUNDS			CONDUIT COMPANIES		TOTAL
			Life Insurance Companies				Other Insurance Companies											
Year	Mortgage Bonds (1)		Mortgage Bonds (2)		Endorsable Mortgage Credits (3)		Mortgage Bonds (4)		Mortgage Bonds (5)		Mortgage Bonds (6)		Leased Properties (7)	Endorsable Mortgage Credits (8)		Securities Mortgage Credits (9)		(1)+(2)+(3)+ (4)+(5)+(6)+ (7)+(8)+(9)
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%		Value	%	Value	%	
1986	27.1	2%	94	8%	-	0%	6	0.5%	1,067	89%	-	-	-	-	-	-	-	1,195
1987	16.9	1%	136	11%	-	0%	4	0.3%	1,093	87%	-	-	-	-	-	-	-	1,250
1988	16.9	1%	256	16%	1	0%	8	0.5%	1,294	82%	-	-	-	-	-	-	-	1,575
1989	18.0	1%	388	21%	34	2%	6	0.3%	1,370	75%	-	-	-	-	-	-	-	1,816
1990	8.5	0%	441	20%	73	3%	13	0.6%	1,651	75%	0.9	0.04%	-	-	-	-	-	2,188
1991	24.7	1%	506	20%	109	4%	5	0.2%	1,943	75%	4.6	0.18%	-	-	-	-	-	2,593
1992	21.7	1%	563	18%	166	5%	10	0.3%	2,295	75%	0.7	0.02%	-	-	-	-	-	3,056
1993	42.1	1%	827	21%	258	7%	17	0.4%	2,721	70%	0.3	0.01%	-	-	-	-	-	3,866
1994	116.3	2%	967	20%	313	6%	39	0.8%	3,434	70%	-	-	27	6	0.1%	-	-	4,875
1995	213.1	3%	1,319	21%	422	7%	51	0.8%	4,210	68%	-	-	63	9	0.2%	-	-	6,225
1996	224.4	3%	1,806	23%	601	8%	51	0.7%	5,054	65%	-	-	60	16	0.2%	10	0.1%	7,763
1997	383.7	4%	2,151	25%	749	9%	58	0.7%	5,247	60%	2.6	0.03%	75	121	1.4%	39	0.4%	8,749
1998	224.4	3%	1.806	23%	601	8%	51	0.7%	5,054	65%	-	-	60	16	0.2%	10	0.1%	7,763
1999	383.7	4%	2.151	25%	749	9%	58	0.7%	5,247	60%	2.6	0.03%	75	121	1.4%	39	0.4%	8,749

Sources:
- "Información Financiera", Superintendencia de Banco e Instituciones Financieras.
- "Revista de Valores", Superintendencia de Valores y Seguros.
- "Revista de Seguros", Superintendencia de Valores y Seguros.
- "Evolución del Sistema Chileno de Pensiones 1981-1997", Superintendencia de Administradoras de Fondos de Pensiones.

the management of financial investments and other important functions prior to retirement and, in some cases, beyond. Individual mandatory, fully funded savings accounts for each worker replaced the old pay-as-you-go publicly managed system, which had huge operational deficits and was actuarially insolvent.

The new legal framework gave new workers joining the labor force no option but to join the new pension system, while older workers that were affiliated with one of the existing *Cajas de Previsión* were able to opt between the old system or move to the new one. There were clear gains for younger workers to migrate to the new system, most importantly, much higher expected retirement benefits at a considerably lower cost (initially, there was also a one-time wage and salary increase equal to the mandatory contribution workers had to make to the new system). In addition, all workers affiliated to the old system were offered a "Recognition Bond" calculated on the basis of past contributions to the old *Cajas*. Each bond had a bullet maturity made to coincide with the moment the worker retired (minimum age of 60 for women and 65 for men). This was a key incentive for older workers to move to the new system.

All told, by the end of 1981, the new private system already had some 1.4 million members, of which about 1.06 million were active contributors. After growing initially at a two-digit annual pace, during the past decade the growth rate of new active contributors to the system has tended to keep pace with the rate of employment expansion. At year-end 1997, the private pension system had some 5.78 million individual members, a figure that surpassed the labor force at the time by some 100,000 people. Active contributors to the private pension system as of that date totaled 3.30 million workers.

The financial strength of the Chilean private pension system has been a high participation rate combined with an impressive return on invested assets. Indeed, the accumulated average annual rate of return was 11.6% in real terms from July 1981 to April 1998. This meant that the compulsory monthly contribution of 10% of gross salary has gone a long way to secure a satisfactory pension for most participants. From the perspective of the capital markets, the funds accumulated and under management by Chilean AFPs amounted to the equivalent of US$31.1 billion at the end of March 1998. The figures in Table 7 provide a breakdown by type of financial instrument. Mortgage bonds are one of several financial instruments benefiting from a rather conservative investment strategy, clearly biased in favor of publicly issued paper:

Table 7 - Pension Fund Investments By Type of Instrument

Type of Instrument	Pension Funds Asset Holdings (end-3/98, US$MM)	
1. Mortgage Bonds	5.20	16.7%
2. Treasury and Central Bank Issued Securities	12.10	38.9%
3. Time Deposits in Financial Institutions	4.20	13.5%
4. Shares and Debentures	8.99	28.9%
5. Other Investments	0.65	2.1%
TOTAL	31.11	100.0%

The other major group of institutional investors is private life insurance companies which manage some 25 % of the US$8.75 billion in assets included in Table 6. In 1997 alone, they increased their portfolio of mortgage-backed instruments by close to US$500 million equivalent. This fast pace of accumulation by life insurance companies is a relatively recent development. To put it in perspective, the increase in life insurance companies' mortgage-backed portfolios in 1997 was more than twice the addition in value terms observed for private pension funds. This is not entirely surprising given the fact that life insurance companies are at a stage of rapid overall asset accumulation resulting from selling annuities to a growing number of retiring workers (who purchase the annuities with the wealth they have accumulated in their individual retirement accounts).

Life insurance companies need long-term financial instruments to comply with industry regulations and to match the long-term liabilities they enter into with every annuity they sell. They are willing to buy EMCs, without securitization, despite their riskiness, because their large transaction volumes provide them with reasonable risk protection. The size of their EMC portfolios allows them some of the same benefits offered by asset securitization, such as portfolio diversification that reduces overall credit risk. Smaller investors could not easily accomplish this.

Private pension funds with much larger portfolios than life insurance companies are precluded from buying EMCs by the strict legal framework that applies to this industry. Indeed, the law limits pension fund administrators to the purchase of investment grade tradable securities, rated by the *Comisión Clasificadora de Riesgo*, an ad hoc group with public and private membership. Since EMCs are not considered securities under current regulations, pension funds can only access EMC stock through securitization. In principle, as the mortgage bond has shown, mortgage-backed securities are attractive investment options for pension funds. This suggests that they should be interested in adding securitized pools of EMCs to their portfolios in the future once securitization becomes more commonplace. But so far, the supply of this type of securities has been quite limited.

Indeed, the market has been slow in taking advantage of the legal framework for mortgage securitization. Capital market reform in the mid-1990s led to the creation of several conduit companies also called "securitization societies." But only one has been able to offer EMC-based securities because of implementation problems. The government recently sent Congress a proposal for some important changes in the Securities Law, which should facilitate issuing of securities and expand the scope of the securitization industry. In particular, this will improve the viability of new mortgage-backed securities based on EMCs (see Box 3).

In summary, it is hard to overemphasize the importance of institutional investors in Chile's emerging capital markets. The appearance of important institutional investors was crucial. Their continued presence and the financial resources accumulated under their management give a high degree of confidence that the market will be able to provide the necessary supply of loanable funds to meet future housing finance needs under reasonable terms and conditions.

Perhaps, the weakest point in the system is the reduced number of institutional investors. While the housing finance market is relatively better off than others in this respect, the active number of institutional investors holding mortgage-backed securities is still small. To be sure, there is a high degree of competition at the originating level among banks. This has brought down intermediation costs considerably in recent years. But among holders of mortgage-backed securities market share is concentrated in just a few players. This is the case of the private pension fund industry, in an industry with only 9 companies where mergers are constantly taking place. Of these, just three pension funds manage close to 70% of the assets. This market structure (which, to a degree, is the result of current industry regulations and laws) leads to little variation in investment reactions among managers.[3] This contributes to the shallow transactions observed in the Chilean capital market, despite the dramatic accumulation in investment portfolios. It also has a significant impact in market trends. In particular, casual observation suggests that downward cycles for specific market securities can be deeper and longer-lasting in Chile than in financial markets with many, differently motivated players. To be sure, housing finance has yet to be affected by unfavorable, sustained downtrends. But shifts in the investment strategy of just a handful of institutional investors could easily result in one-sided reactions, without the benefit of counterbalancing market forces from other institutional investors. As recent experience illustrates, shifts in portfolio allocations take much longer to be completed when market presence is concentrated in just a few players. This is particularly difficult to achieve when desired changes in asset composition all point in the same general direction, as is the case with pension funds. In the meantime, the affected financial instruments become depressed and more vulnerable to permanent damage. It is likely that this will continue to be a source of concern.

[3] The legal framework of the private pension system is quite keen in protecting the retirement savings of workers, and rightly so. However, the current framework makes it too hard for new entrants to the industry. First, each approved pension administrator can offer just a single product to current workers, which is hard to distinguish from those of other companies. This requires pension fund administrators to perform a long list of functions and tasks, effectively imposing barriers to entry. By its own nature, fund management is rich in economies of scale. The current legal and regulatory framework has exacerbated this feature of the industry, and in practical terms has ultimately favored market concentration.

The Price of Housing Finance

Chilean families have benefited since the mid-eighties from a rapidly expanding housing finance market. Originators have introduced new products broadening the financial options for those seeking to buy a dwelling. Increased competition has been the main motivation behind this change, which has been supported also by new legislation. Competition also has resulted in lower housing finance costs for the average family, particularly in recent years. However, tight monetary policy in an environment of fast economic growth and declining inflation, has meant higher funding costs for originators, so not all the benefits of more competition in the intermediation process have reached the final borrower. This is illustrated by the figures in Table 8.

Table 8 - Real Interest Rates on Bond-Financed Housing

(Annual average for selected years)

Year	Rate Paid on the Bonds	Spread Charged by Originating Bank	Rate Paid by Borrower
1988	5.95%	3.08%	9.03%
1991	6.21%	2.88%	9.10%
1994	6.35%	2.43%	8.78%
1997	6.56%	1.91%	8.47%

Source: "Información Financiera", Superintendencia de Banco e Instituciones Financieras

The figures in Table 8 show that the spread has declined significantly in the recent past. However, the interest rate on mortgage bonds demanded by the market actually has increased somewhat, which has meant that the final rate paid by borrowers has not shown the dramatic drop observed in the spread retained by originating banks. These interest rates are for UF financing, that is, they represent real interest rates. Available information for EMC financing shows a similar interest rate behavior, although it suggests that interest rates for this type of financing is around half a percentage point higher than the final rate for mortgage bond financing. This higher overall cost for EMCs is explained by the higher risk of EMC instruments. It is likely that a more intensive use of securitization in the future will reduce the cost of holding and funding EMC-based housing finance, particularly if the new securities enter the portfolios of private pension funds. It is even plausible that these EMC-based securities will one day carry lower interest rates than mortgage bonds, if the recently announced legal reforms become law. Indeed, this would mean that securitization of EMCs would demand less capital from issuers than mortgage bonds, which always remain in the balance sheet of the originating bank.

Paradoxically, despite a rapidly growing supply of loanable funds, the cost of funding for originators has remained high. There is still a big, unfavorable gap when funding rates are compared with those in developed markets, such as the United States. This is a problem affecting all economic activity in Chile, not only housing finance. Fortunately for the final borrower, real wages have been growing strongly in recent years. Also, there has been a lengthening in loan maturities, which has allowed final borrowers to buy more expensive housing or reduce their monthly payments, at any given interest rate.

The reduction in the intermediation spread charged by originators is in itself an interesting development, particularly since the levels observed today are quite competitive even with those charged in more mature markets abroad. For sure, they are about the lowest in the region, which gives hope that when financial and macroeconomic conditions improve housing finance will benefit from lower funding costs and approach final rate levels similar to those of some developed economies. In addition, Chilean financial markets have shown that they are capable of supplying large quantities of loanable funds for housing finance, a feature that is likely to remain in the future.

Several factors have supported the drop in the intermediation spread. Enhanced competition in mortgage lending by the banking system and economies of scale derived from a larger number of mortgage transactions and volumes of financing have certainly helped. In addition, the introduction of EMCs as an alternative to housing finance and the appearance of mortgage companies has made the origination process more competitive. Also, the banking system, the main originator of mortgage financing, has increased its overall lending efficiency over the years, as well as the overall quality of its loan portfolio, including mortgage loans. To a great extent, this reflects the experience gained from the banking crisis of the early eighties and a much improved and effective regulatory effort. There is no question that the long stretch of solid economic growth of the Chilean economy also helped while it lasted. Now that the macroeconomic environment is less favorable, there will be an opportunity to test the real strength of financial markets, and of the banking system in

Table 9 - Transaction Costs in Housing Industry

	Transactional Costs (US$)
1. Value assessment	Between $95 and $100
2. Title search	Between $95 and $100
3. Stamp and registration tax	0.6% of the property value
4. Registration	Between $700 and $725
5. Notary	$110
6. Fire and title insurance	$20
7. Other insurance♦	$20

♦ It pays off the entire debt in case of death of the borrower: *Seguro de desgravamen*.

particular. Since mid-1998 mortgage rates have gone up substantially following abnormally tight liquidity conditions, which caused a pronounced inversion in the yield curve. But mortgage loans were still being offered at the end of 1998, however at much higher rates and in an unusually wide range (recently, from UF + 9.7% to UF+11.8% per year).

Most of the ancillary and other costs associated with putting a mortgage loan on the books of the originator remain reasonably under control. One exception is property registry fees, which in Chile is the job of the *Conservador de Bienes Raíces*, a privately run office that benefits from this natural monopoly. Stamp and registration taxes amount to 0.6% of the price of dwellings of at least 140 square meters that comply with other specifications of Decree-Law 2. In other cases, they are equivalent to 1.2% of the value of the property. A summary of the direct transaction costs for a typical Decree-Law 2 dwelling are listed on Table 9.

The figures show that for a typical dwelling traded in the market for US$40,000 equivalent, the incurred ancillary costs are in the order of US$1,100 or 2.75% of the purchase price. This adds a significant amount to the total cost for the new homeowner. Not much is heard about efforts to reduce current levels of ancillary costs associated with home purchases. However, they should go down in percentage terms if the standards of more developed markets are used as a benchmark.

Concluding Observations and Lessons Learned

Three basic functions must be carried out adequately to put in place a housing finance operation. The origination process matches the qualified homebuyer with a dwelling at an affordable price. Long-term financing is normally required, so the capital market has to provide the right type of financial instrument and the investor willing to take the risks involved in holding a fixed-income asset to its duration. When the lending operation is in place, maintenance services must be provided for timely servicing of the mortgage so that a reasonable rate of return can be obtained by all who made the financing possible. It is not easy to make this work smoothly at an affordable price. Experience in the region has been mixed and often important components of the package are missing. A sound and efficient banking system is a requirement, as is a reasonably developed capital market. Moreover, all these components often operate in a macroeconomic environment that is far from perfect. It is not surprising, then, that housing shortages exist. The complexity of the issues involved certainly demand that a concerted and well-coordinated effort be made by both the financial and public sectors. These efforts should focus on formulating the right set of policies and on putting in place the right financial architecture and institutions.

Chile has been fortunate in being able to reduce its shortage of adequate housing. No doubt significant additional efforts should be made, but overall a reasonable architecture and a sound set of institutions for housing finance are in place. Financing is still quite expensive, but at least it is available for most people who qualify for it. Within this general picture, government housing programs need to be improved to avoid market distortions at the lower end of the price range and eliminate the moral hazard introduced by poor debt servicing practices on the part of MINVU. Furthermore, capital markets legislation and regulations must continue to be improved. The bias among institutional investors toward concentration, particularly in the private pension industry, is a matter of concern. Also, it is important to stay vigilant so that the benefits of competition are shared by all originators.

There has been for some time a steady reduction in the lending risks faced by the Chilean banking system. This, in combination with growing competitiveness at origination, has brought intermediation costs down substantially and has made housing finance broadly available to the population. The three main sources of risk for banks and other originators are now approaching levels seen in more developed financial systems. Credit risk has been contained by the practice of using loan-to-value ratios in the 75% to 85% range, while industry standards do not allow payment-to-income ratios much above 25%. While land and property titling and mortgage registration tends to be expensive, it works effectively and mortgage collateral is well established. On the legal side, foreclosure procedures for mortgage lending are expeditious and have been well tested.

Interest rate and liquidity risks have also been reduced to reasonable levels by the banking industry, with the support of the capital market. The wide use of inflation-indexed financial instruments is crucial in this respect. It is hard to overemphasize this point in an economy where inflationary pressures are endemic, although today price increases are relatively contained. The lessons of the past have been learned so today there is practically no mismatch between mortgage lending maturities and their funding base. Without the development of a solid group of institutional investors, there would have been little long-term funding available. The availability of inflation-indexed securities such as mortgage bonds and EMCs has satisfied the needs of these institutional investors. The role played by pension funds no doubt has been crucial. However, a review of current policies and practices seems to be in order. Capital market development has meant that Chile now has plenty of funding available for the housing industry. The three largest institutional investors, private pension funds (US$30.8 billion), insurance companies (US$9.4 billion) and mutual funds (US$4.5 billion), had US$44.7 billion under management in their portfolios at the end of 1997. They are well positioned to absorb large amounts of housing finance and control the interest and liquidity risks that banks alone could not easily handle given their deposit base. All this has important repercussions on overall market efficiencies and has allowed broader access by families to private market financing.

Despite all this progress, funding rates have remained high in Chile across the board. The recent financial crisis in emerging markets has exacerbated this trend and is testing the overall architecture for housing finance and its institutions. A more lasting success will be achieved only when a new macroeconomic equilibrium that incorporates much lower funding interest rates is in place.

Annex Box 1
Main Features of Mortgage Bonds

- These bonds are bearer securities issued by banks and represent liabilities of the issuing institution. Mortgage bonds are issued as series. Bonds belong to the same series if they have the same face interest rate, an equal number of amortization payments and are denominated in the same currency. Their value can be expressed in foreign currency, pesos or any unit of account authorized by the Central Bank, such as the UF, in which case actual servicing is done in an equivalent amount of pesos.

- Banks can issue mortgage bonds to grant mortgage-backed loans. Each bond issued by a bank has to perfectly match the amount of a mortgage loan on the books of the issuer. The loan represents the asset and the bond the matching liability on the balance sheet of the issuing bank. If due to a prepayment or any other reason the associated loan disappears from the books of the issuing bank, that bank must retire bonds from the market in an equivalent amount. It can do this by direct purchase in the marketplace or by a drawing procedure specified in the law.

- The issuing bank does not actually lend money directly to its client. Rather, it provides the borrower with the bond (the primary transaction), which is accepted at its face value. Then, the bond is normally sold in the marketplace (mainly the Santiago Stock Exchange) by the same issuing bank on behalf and by mandate of its client. The latter can suffer a loss or a capital gain if the price of the bond is below or above, respectively, its face value is the day the bond is traded in this secondary market.

- The issuing bank charges a fee for its services to the final borrower, which is collected in the form of an agreed spread over the interest rate of the associated mortgage bond.

- Normally, mortgage bonds have an amortization schedule lasting between 8 and 30 years, but most are concentrated in the 8 to 20-year range. Principal prepayments of the associated loan are accepted in cash or bonds of the same series as that of the original bonds that financed a given operation. There is a prepayment penalty, which is equivalent to one quarter of interest on the loan.

- It is the responsibility of the issuing bank to collect from the final borrower and to service the associated bonds in the hands of investors. Mortgage loans financed with bonds are serviced at the beginning of each month by the final borrower, while the bank services the bonds quarterly at the end of the period.

- When a borrower is in arrears, the bank can use a special, extremely expeditious legal procedure (it can take as little as 30 days) to repossess or auction the property given in collateral. The debtor cannot claim in court that the mortgage obligation does not exist.

- There are two types of mortgage bonds: a) those issued to finance general purpose mortgage-backed loans and b) those issued specifically for housing finance. Both types of loans have to be protected by a first mortgage or equivalent. This collateral cannot be extended to other liabilities of the borrower. The loan amount—and consequently the bond's face value—cannot exceed 75% of the appraised value of the property given in collateral, even if more was paid for it. If the loan is used to acquire a property, such as a dwelling, the mortgage loan cannot exceed 75% of the price paid, independently of its appraisal value.

- The monthly payment-to-income ratio of the borrower cannot be more than 25 percent.

- Both types of mortgage bonds offer special protection to investors in the case of a forced liquidation of the issuing bank due to insolvency. The law stipulates that the bank has to separate in two independent pools the mortgage loans associated with each type of bond. These portfolios have to be offered in auction as separate packages to interested banks. The law outlines a clear, fast timetable for this process. Downward adjustments in the face value of the bonds are necessary only if the market value at auction of the mortgage loan portfolio backing the bonds is below their remaining face value. The bank buying one of the offered portfolios assumes the responsibility of servicing the associated mortgage bonds.

Annex Box 2
Main Features of Endorsable Mortgage Credits

- Endorsable mortgage credits (EMCs) are financial assets backed by a first mortgage or equivalent as collateral. Banks and mortgage credit companies are the originators of these assets, which require only an endorsement of the owner of the asset prior to being transferred or sold to a new owner or investor.

- EMCs have many of the same features of mortgage loans financed with bonds. However, there are a few important differences: a) their funding is not linked to a specific liability of the originator; b) they can be for as much as 80% of the appraised value of the property used as collateral or of the property being purchased, whichever is lower; c) the monthly payment-to-income ratio of the borrower can be as high as 30%; and d) once transferred or sold, EMCs disappear from the asset side of the balance sheet of the originator.

- Originators normally keep responsibility for administering the servicing and recovery processes on behalf of investors. Originators charge a commission for these services, which they deduct from the servicing payments received monthly from the final borrower. However, investors buying EMCs take the principal and interest risks associated with the final borrower, which is reduced by the quality of the property pledged as collateral for the operation.

- EMCs are not considered securities and are not rated by specialized credit rating agencies. This limits their secondary market to a reduced set of institutional investors. The securitization of the cash flows associated with pools of these credit instruments is the mechanism available in the law to reach a broader field of institutional investors. Either real estate investment funds or conduit companies created for this purpose (*Sociedades Securitizadoras)* in the Chilean legislation, can carry out the securitization of EMC.

- EMCs are favored with the same expeditious legal arrangement for asset recovery enjoyed by mortgage loans financed by mortgage bonds.

- EMCs can be prepaid without penalties after a contractually agreed period of time, normally one year after the credit agreement is signed.

Annex Box 3
Securitization of Endorsable Mortgage Credits (EMCs)

- EMCs are one of the few credit instruments that can be securitized under current Chilean legislation. There are two modalities to carry out the securitization of EMC: a) the "pass-through" structure offered by a secondary market conduit company (*Sociedades securitizadoras*, Law 18,045 - Title XVIII); and b) the pass-through structure provided by a specialized investment fund investing in EMC (*Fondos de inversión de créditos securitizados*, Law 18,815).

- *Sociedades securitizadoras* introduced the concept of a corporation with separate equity and debt sets, which are the counterpart to pools of eligible financial assets. EMCs are one of these assets. This was done because the concept of the trust or fiduciary agreement is not well developed in the Chilean financial legislation. By establishing separate pools of assets backed by separate debt and equity, the common assets and equity of the Conduit Company are protected. Securities issued under a separate proprietorship can have recourse only against the specific pool of assets that support them. By the same token, insolvency of the Conduit Company does not cause the insolvency of each separate proprietor. The Conduit Company has to keep separate accounting for each separate equity it manages and its source of income is the profits generated by each separate pool under management. Basically, these secondary market conduit companies are quite similar in their operation to the AFI described in the following paragraph. However, one important difference with AFI is that they are required to keep their general solvency ratio, adding all managed assets under separate ownership, at not more than 10 times the common equity. This can be quite a demanding capital requirement for a successful conduit company (as restrictive as in the case of a bank). Another problem they face is high interest risk while in the process of accumulating enough EMCs, prior to their pooling under a separate ownership and the issuing of related securities. There is one of these conduit companies active today in the Chilean market.

- The specialized investment fund operates as any other under Chilean legislation. That is, an administrator of investment funds (*Administradoras de fondos de inversión* or AFI) creates a given fund as a separate legal entity. The AFI is a single-purpose corporation that can manage one or more closed-end funds, and it is a legally separate entity from the funds it manages. AFIs must having enough risk capital in their books at all times to cover at least 1% of the value of the assets under management. In the case of mortgage-backed securities, AFIs are in charge of putting together and managing EMC portfolios, which are pooled into each specific fund—together with some other eligible liquid instruments. (However, the servicing of each specific EMC can stay with the originator of the mortgage operation.) AFIs sell participations—or *cuotas* in Spanish—in each fund to investors through the securities market. Participations are considered securities, have to be rated by the *Comisión Clasificadora de Riesgo* and have to be listed in at least one securities exchange. To issue participations, AFIs have to prepare a prospectus detailing the purpose, investment strategy and other particulars relative to each offering in the primary market. Funds are set for a fixed period of time, at which time all remaining assets are sold or just distributed pro-rata among holders of participations. To raise liquidity, investors can sell participations in a fund at any time in the secondary market. Investors regularly receive the net cash flow generated by the pooled EMC. The AFI gets a management fee, which is agreed on each fund as part of the fund regulations that must be filed with the Superintendence of Securities. So far, no such EMC-based funds have been launched in Chile.

- The EMCs they can purchase are subject to the following general limitations:

  Securitization Societies: EMCs originated or sold by the same bank or financial company cannot account for more than 50% of the total. This percentage is reduced to 15% if the bank or financial company is related to the ownership of the buyer (limitation for the originator to securitize its own credits).

  Investment Funds: The restriction above also applies. Moreover, funds cannot invest more than 10% of their portfolio in debt instruments of a single debtor or in debts of those related to the property of the AFI.