

México



# Mortgage Market in Mexico: Resilience to the Global Economic Challenges





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- I. Background.
- II. Prospects of the Mortgage Market in Mexico.
  - a) The Housing Market.
    - i. Evolution of the Market.
    - ii. Estimation of Needs.
    - iii. Private Housing Finance.
  - b) Mortgage Backed Securities (BORHIs): Behavior During the Current Financial Situation.
    - i. Evolution and Consolidation of BORHIs.
    - ii. Strengths of BORHIs Structures.
- III. Prospects of Housing Finance.
- IV. Final Remarks.





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## Background



- The securitization of mortgage loans through the issuance of Residential Mortgage Backed Securities (BORHIs) has demonstrated to be a successful mechanism of providing to the market an effective alternative to obtain funds at competitive rates. This has allowed to cover the demand for mortgage loans and to extend the access to housing in Mexico.
- Part of the success and of the growth of the Mexican mortgage market is derived from a sound economy coupled with the development of prudent practices at the mortgage sector given the experience of the last decade.





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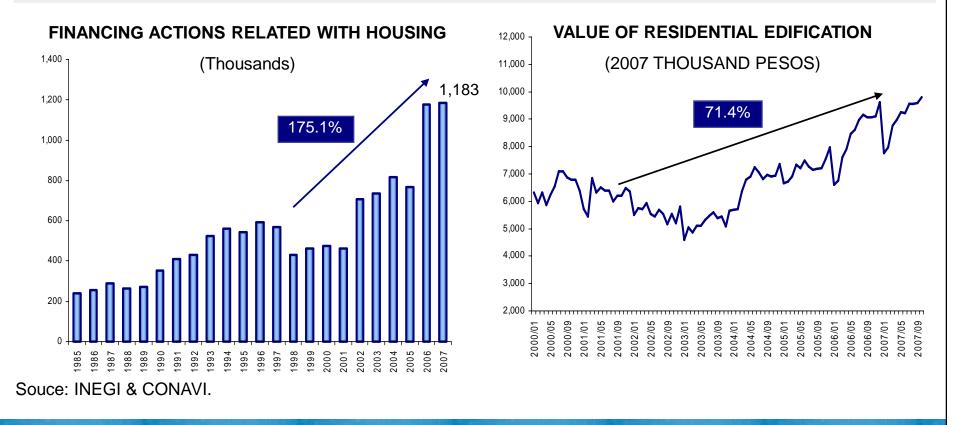
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#### **Residential Mortgage Loans**



- The Mexican housing supply has shown a significant dynamism.
- During the year 2007, 1,183 thousand financing actions related with housing with a value of \$25,760 million dollars were achieved. This figure is 175.1% superior to the registered in the year 1998.
- Besides, the value of residential edification grew 71.4% in real terms between the year 2000 and 2007.

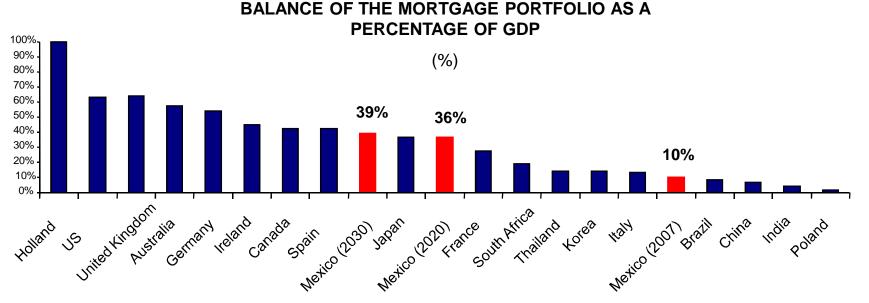




#### **Mortgage Loans Balance**

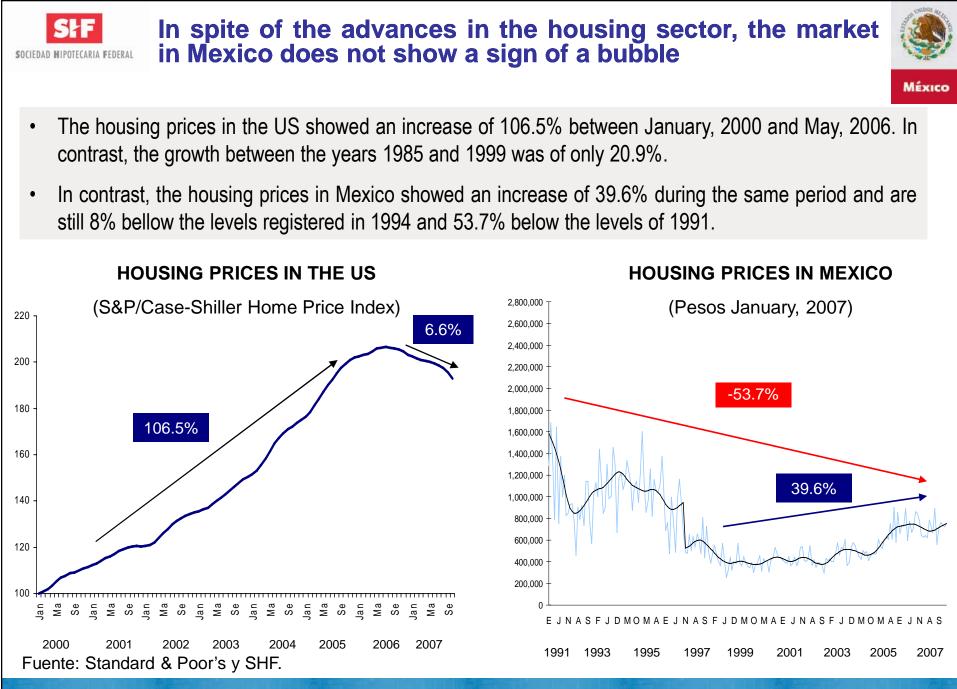


 In spite of this dynamism, the balance of the Mortgage Portfolio as a percentage of GDP is relatively low when compared to other countries. In the year 2007, the Mortgage Portfolio represented 10% of GDP, which locates Mexico at an average level in an international comparison. However, it is forecasted that that proportion will increase to a level of 39% in the year 2030.



Source: FMI, World Economic Outlook September 2004; South Africa Central Bank, CMHC (Canada), SSKI (India), Komoco (Korea), GHB (Thailand), China On-Line, SHF (México), Michael Lea. 2001 figures for Korea, Thailand, Brazil, Poland, China, India and South Africa.

An annual growth of 3% is assumed for Mexico.







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#### **Housing Demand**



- In Mexico, there are 26.7 million families of which:
  - 17.2 million already have an adequate house.
    - ✓ Of the 17.2 million families with an adequate house, approximately 0.5% each year demand a better or bigger house .
  - 9.4 million families do not have an adequate house and haven't been attended yet.
    - ✓ Of the 9.4 million families without an adequate house, 7.8 are part of the informal sector of the economy.
  - Annually, around 500,000 new families are generated, of which approximately 60% are in conditions of demanding a mortgage loan.

Source: INEGI.



### **Housing Demand**



- In addition to the families that do not have an adequate house, there are 4 components that together generate the annual housing demand.
- 1. Generation of New Families: SHF estimates that in the year 2008, 496,706 new families will be created, of which 299 thousand represent a housing demand given their income level and geographic location.
- 2. Families without a Home: Families that do not have an adequate house and that are in conditions of demanding one: 765,113 in 2008.
- 3. Families Demanding a Better Home: Families that already have an adequate house but that demand a better or bigger one: 71,565 in 2008.
- 4. Families who are Granted a Loan after a Former Rejection: 22,724 in 2008.

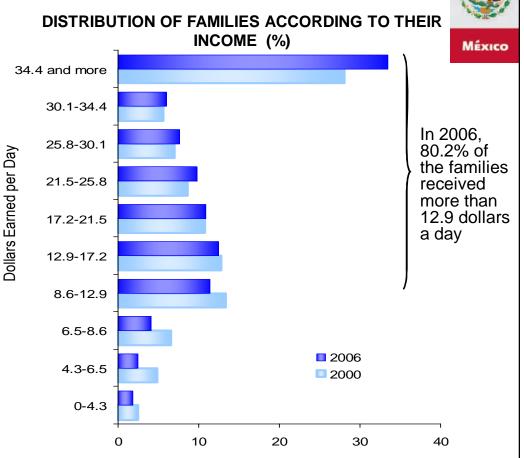
Estimation of the Housing Demand in 2008			
Component	Number of Houses	%	
New Families	299,977	25.8%	
Families without a House	765,113	65.9%	
Families demanding a Better House	71,565	6.3%	
Families who are Granted a Loan after a Former Rejection	22,724	2.0%	
Total	1,159,379	100.0%	

Source: SHF.

#### Housing Demand: Strengthening of the Middle Class



- A gradual increase of the middle class is expected. This will allow a strengthening of the housing demand from financially healthy families.
  - Between the year 2000 and 2006, the percentage of families that received more than 12.9 dollars a day increased from 72.8% to 80.2%.
  - The low income sectors are the ones that have experienced greater increases in their income per family between the years 2000 and 2006.



#### STRENGTHENING OF THE PURCHASING POWER OF THE LOW AND MIDDLE CLASSES Quarterly Income per Family (Dollars)

	I	II	III	IV	۷	VI	VII	VIII	IX	Х
2000	\$462	\$793	\$1,080	\$1,376	\$1,708	\$2,135	\$2,677	\$3,407	\$4,934	\$12,526
2006	\$791	\$1,177	\$1,382	\$1,742	\$2,050	\$2,388	\$3,085	\$3,805	\$5,084	\$11,330
Total Change	\$329	\$384	\$301	\$366	\$342	\$253	\$408	\$398	\$150	-\$1,196
% Change	71.1%	48.5%	27.9%	26.6%	20.1%	11.8%	15.3%	11.7%	3.0%	-9.6%

Source: INEGI.





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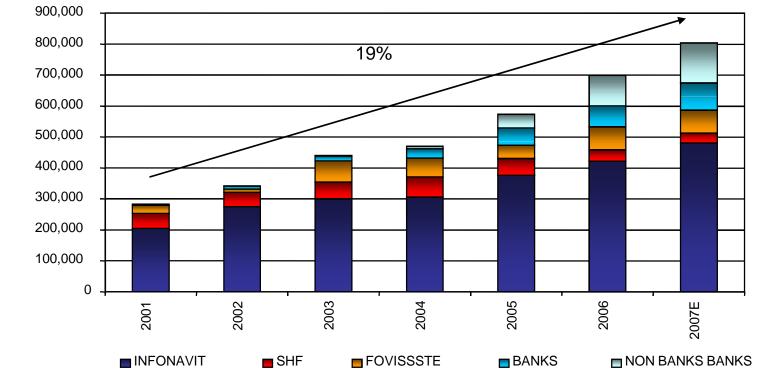
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In spite of the dynamism showed by INFONAVIT and, recently, by FOVISSSTE, the private sector has won participation in the mortgage market. This is due to a greater participation of banks and to the access of the biggest non-bank banks (Sofoles) to own funding sources.



 Non-bank banks (Sofoles) and commercial banks provided 26% of the total number of mortgage loans supplied during 2007.



#### NUMBER OF MORTGAGE LOANS

Source: CONAVI, 2007 estimation made by SHF.

#### **Private Mortgage Loans: Market Structure**

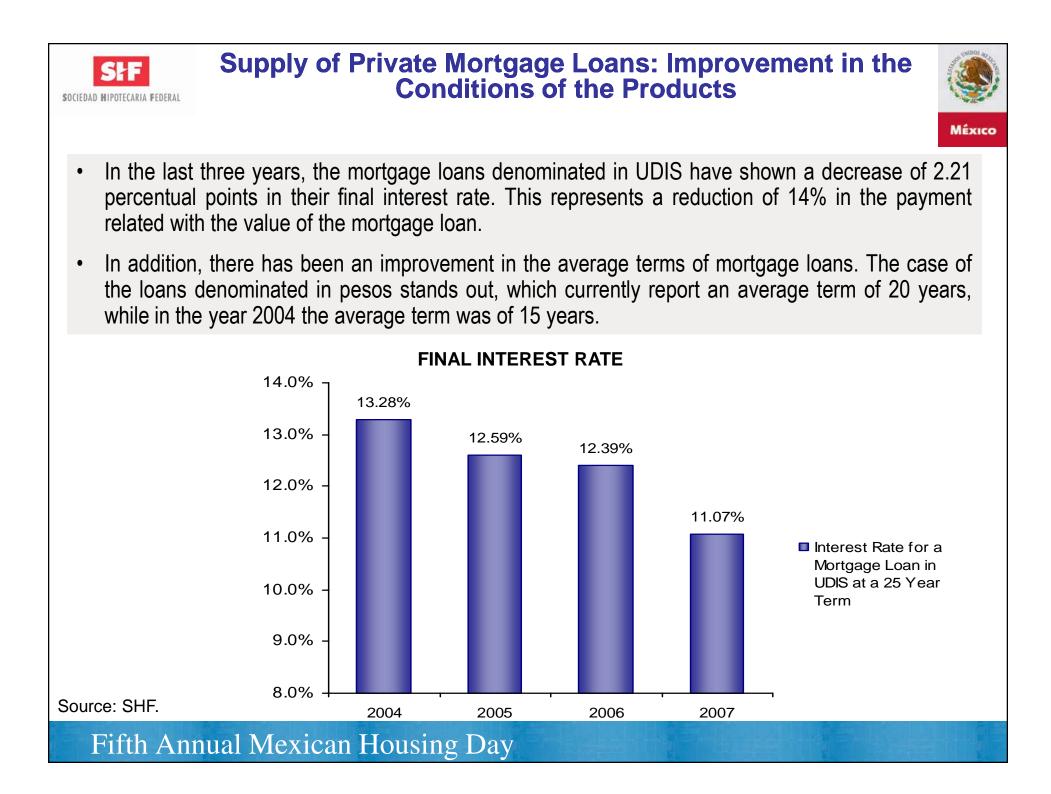
- Since the year 2003, a more active participation of commercial banks in the mortgage market can be observed. This has generated greater competence and better conditions in the supply of mortgage loans.
- The previous benefits the final consumers with better financial conditions such as:
  - Lower interest rates.
  - Terms up to 30 years.
  - Lower down payments coupled with the Mortgage Loan Insurance.

Source: CONAVI, 2007 estimation made by SHF.

	MORT	GAGE PORT		Μέχιςο
4000/		(% Structure)	)	
100%				
90% —				
80% — —				
70% —				
60% — —				
50% — —				
40% — —		▋₿世		
30% — —				
20% — —				
10% —				
0%				
1997	1998 1999 2000	2001 2002 2003	2004 2005	2006 2007
Banca	Sofoles	Banca de De	sarrollo	Infonavit
	Banks	Sofoles D	evelopment	Infonavit
			Banks	
1997	70%	1%	1%	28%
1998	66%	2%	1%	31%
1999	58%	4%		37%
2000	49%	5%		45%
2001	38%	8%		54%
2002 2003	31%	10%		58%
2003	<u>25%</u> 21%	<u> </u>		<u>61%</u> 62%
	2170			60%
2005	22%	17%		
2005 2006	22% 27%	17% 13%		
	22% 27% 30%	17% 13% 8%	0%	58% 60%









Besides from the improvement in the conditions of loans, President's Calderon Government designed the subsidy program "Esta es tu Casa" that allows to offer mortgage loans with subsidy to the low income sectors.

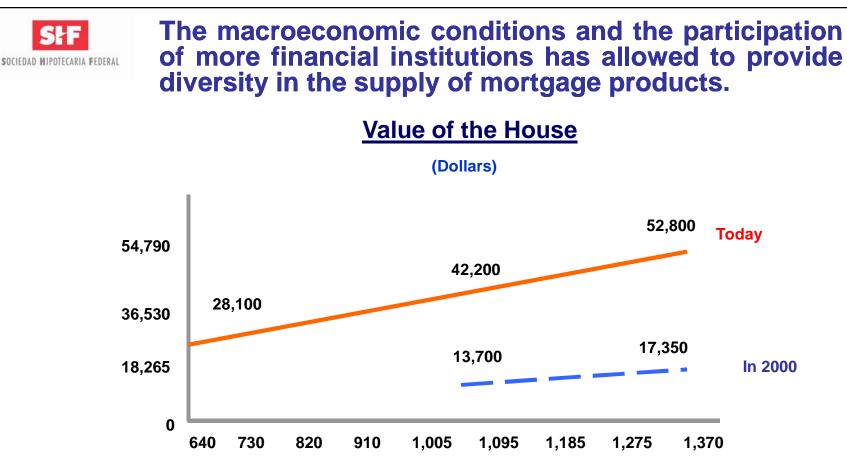


- "Esta es tu Casa" is a program of direct subsidies that offers access to mortgage loans to people that receive a total income of 17.2 dollars a day or less, or to families that receive a total income of 21.5 dollars a day or less.
- This program decreases the monthly payment of a mortgage as well as the down payment, allowing to provide access to housing to low income families that previously were not served.

	WITHOUT SUBSIDY		WITH SU	BSIDY
VALUE OF THE HOUSE	\$16,574		\$16,574	
PURCHASE EXPENDITURES	\$895	5.40%	\$895	5.40%
DOWN PAYMENT	\$1,657	10%	\$702	
SUBSIDY			\$4,635	
LOAN	\$15,812		\$12,132	
MONTHLY PAYMENT	\$206		\$158	
REQUIRED GROSS INCOME	\$822	P/i = .25	\$631	P/I = .25

#### ACCESS TO HOUSING WITH A MORTGAGE LOAN DENOMINATED IN PESOS

 The program "Esta es tu Casa" has been completely successful in reaching the unattended sectors of the population. During 2007, a total of 114,102 subsidies were offered with a value of \$244.8 million dollars.



**Monthly Family Income** 

México

Today

1.370

In 2000

The improvements in the financial conditions of mortgage loans supplied by banks ٠ and other financial institutions have allowed the consumers to have access to houses of greater value with respect to the conditions reported in the year 2000.

Source: BANAMEX.



### **Housing Sector Outlook**



- The housing sector in Mexico shows structural characteristics in the demand, supply and financing side that makes it completely different to the market in the US.
  - On the supply side, the macroeconomic conditions of stability generated a reduction in the interest rates of mortgage loans and an extension in the average terms. The supply of mortgage loans has grown in terms of quality and quantity.
  - On the demand side, the middle and lower class have reported an important increase in their purchasing power during the last years. This has generated a financially healthy demand for mortgage loans.
  - Moreover, the housing prices in Mexico do not present a bubble as the one that was observed in the North American market.





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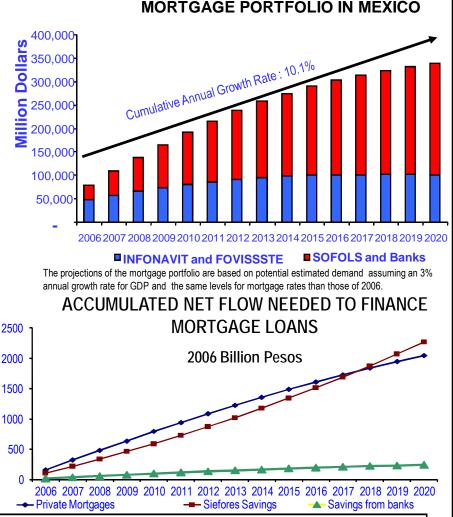
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#### Demographic dynamics: a challenge and opportunity in the mortgage market SOCIEDAD HIPOTECARIA FEDERAL

Even under very conservative assumptions, SHF • estimates that the residential mortgage portfolio will grow from USD \$80,724 millions in 2007 to USD \$338,300 millions 2020.

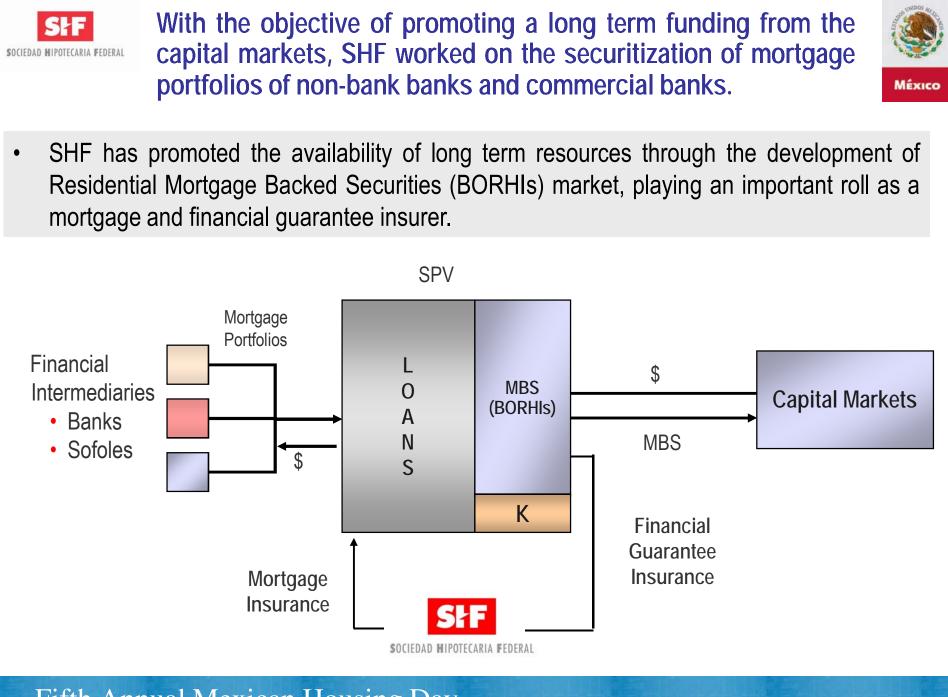
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The flow of financial savings in the country will not • suffice to finance the growth of mortgage portfolios. The sale of mortgage portfolios to domestic institutional investors as well as foreign investors is an absolute must to maintain the growth of the mortgage sector.



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To attend the growing demand of mortgage loans in the following years, it was necessary to develop Residential Mortgage Backed Securities market.

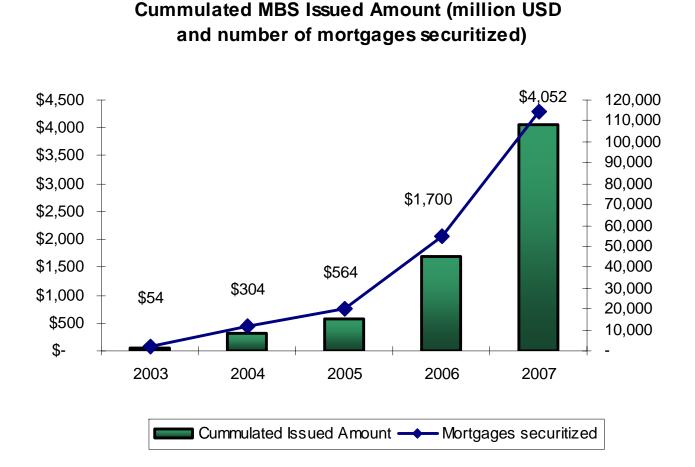




In response to the growth on the demand for mortgages, the Mortgage Backed Securities Market has experienced an important increased in volume over the past years



 We have reviewed contracts, structures and mortgage pools for a total of 41 issuances, accounting for more than \$4,000 million dollars at the end of December of 2007 :





# Securitizing mortgages has proven to be a successful mechanism to originate mortgages recurrently and at competitive rates



- Through 2007, we have witnessed important progress on the issuance of mortgage backed securities:
  - On 2007, \$2,352 million USD were securitized, representing an increase of 107% of the amount observed in 2006.
  - And also on 2006, banks started working towards securitizing their mortgage portfolios, managing to account for 41% of the issuance of BORHIs in 2007.

Total MBS issuance per year					
Years		nount on USD)	Issuances	Securitized Mortgages	
2003		54	1	1,979	
2004		250	3	9,562	
2005		260	5	8,359	
2006		1,136	14	34,857	
2007	\	2,352	17	59,351	
Total		4,052 🦯	40	114,108	

(Millio	ount n USD)	Issuances	Securitized Mortgages		
Non-bank institutio	ns (SOF	OLES)			
2007 🤇	1,263	12	49,326		
2006	900	13	30,926		
2005	260	5	8,359		
2004	250	3	9,562		
2003	54	1	1,979		
Subtotal	2,777	34	100,152		
Banks					
2007 🤇	777	3	10,025		
2006	100	1	3,931		
2005	-	-	-		
2004	-	-	-		
2003	-	-	-		
Subtotal	963	4	13,956		
Other Types of Issuances (Cross Border, BORHIs Repackaging, HiTo					

2007	Bonds)	3	7,927
Subtotal	312	3	7,927
Total	4,052	41	114,108





• The following table shows the total issuance outstanding and the current nominal value of both senior and mezzanine series:

			Outstanding		
Issuances	# of Emissions	Issued Amount	(Nominal Value)	Тс	otal Amortization
BORHIS	39 \$	3,580,585,224.39	\$ 3,223,305,619.36	\$	357,279,605.03
Mezzanines	17 \$	213,720,238.50	\$ 209,748,158.95	\$	3,972,079.55
Total Amount	56 \$	3,794,305,462.89	\$ 3,433,053,778.31	\$	361,251,684.58

Amounts in USD The amortizations shown reflect coupon payments on January 1st and of December 20th and 25th.

## On 2007, the average size of issuances also increased, making BORHIs a more appropriate instrument for institutional investors SOCIEDAD HIPOTECARIA FEDERAL

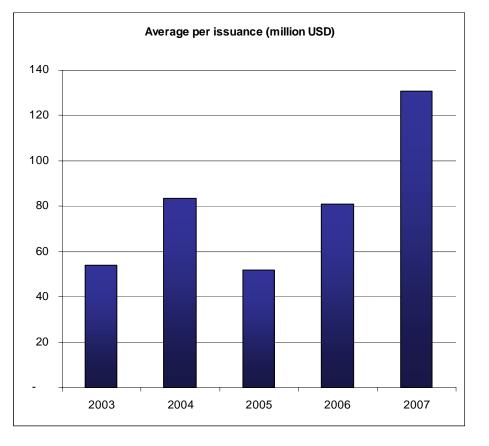


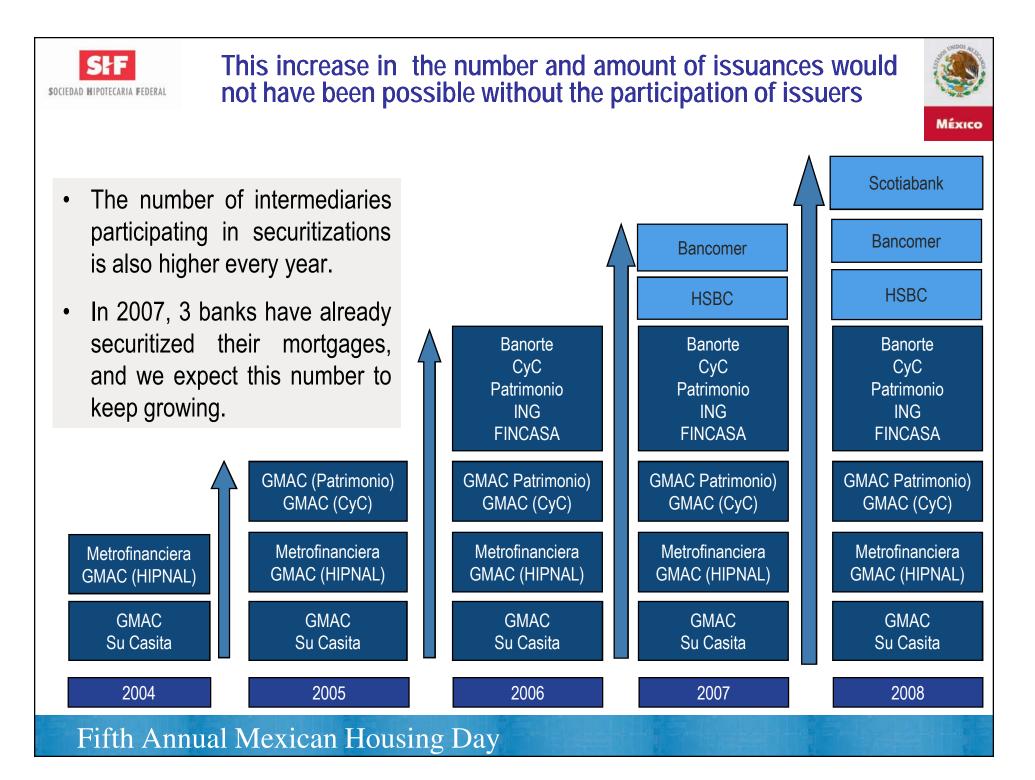
Issuances increased their individual volume, averaging around \$131 million USD in 2007.

Year	Average per issuance (million USD)	% of increase
2003	54	141%
2004	83	57%
2005	52	151%
2006	81	61%
2007	131	0%

Average 2003-2006	74	177%	

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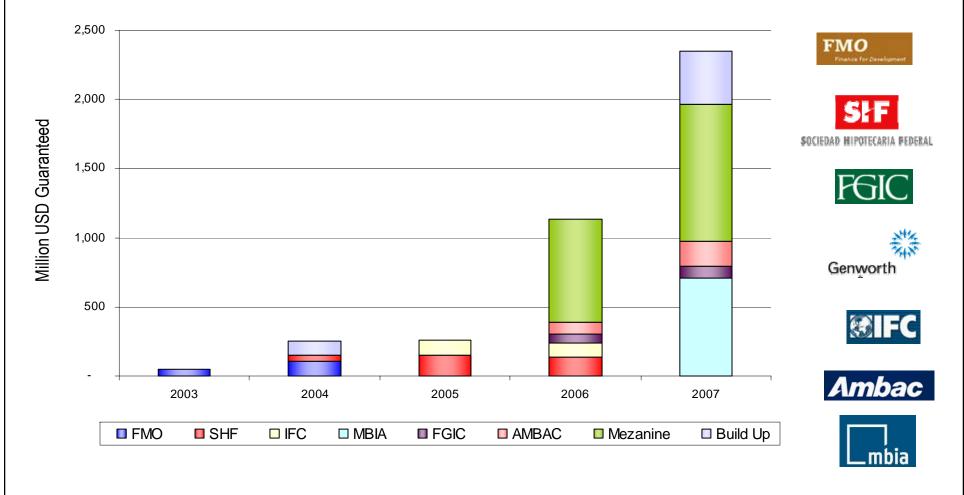






Over the past few years, every issuance has included credit enhancements provided by a third party, which brings certainty to the investors about the quality of the mortgages securitized

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Source: SHF



In order to satisfy the demand of institutional investors and widen the range of BORHIs available, different types of issuances have been promoted:



- We have worked to generate a great variety of types of BORHIs with the objective of attracting different investors through diverse tranches.
- Likewise, SHF participated in the creation of Hipotecaria Total (HiTo), a company that allows the securitization of mortgages at real time, in a similar way as the Danish model.
- We are supporting Covered Bonds as another securitization option.
- These schemes offer different options for both, investors and issuers.





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# SFF Since its initial securitization, the BORHIs market counted with a clear and solid framework



 In 2004, for an important proportion of the market, the criteria for originating mortgages in the United States became riskier, and in comparison to the BORHIs market, the eligibility criteria when they were securitized did not exist or were very limited causing enormous heterogeneity among structures.

#### Securitized Mortgages: Comparison and contrast between BORHIS and Subprime MBSs

	BORHIS	Subprime MBSs
Interest rate	Fixed	Fixed, variable or a mixture
Down payment	In all cases	Some did not include a down payment, or needed a second loan for this purpose
Documentation	In all cases	An important proportion did not count with complete documentation, or income statements
LTV	LTV limited to 70%, or if LTV is higher mortgages were insured	No limit
Value of property	No speculative bubble	Speculative bubble





• The structures that support BORHIs are also more solid than the securitization transactions we have observed default over the past months in the Subprime segment

#### Bond Structures: Comparison and contrast between BORHIS and Subprime MBSs

	BORHIS	Subprime MBSs		
Interest or currency risk	Does not exist	Both are present		
Ratings	Highest in Local Scale	Different ratings		
Default Levels	Structures provide high levels	As structures did not have enough credit enhancements, payments to investors were not made a few months after subprime borrowers defaulted		



Despite the financial turbulence, BORHIs have performed well due to the quality of origination and the structures supporting them: they can accumulate as much as 35% on losses before affecting their payments to investors



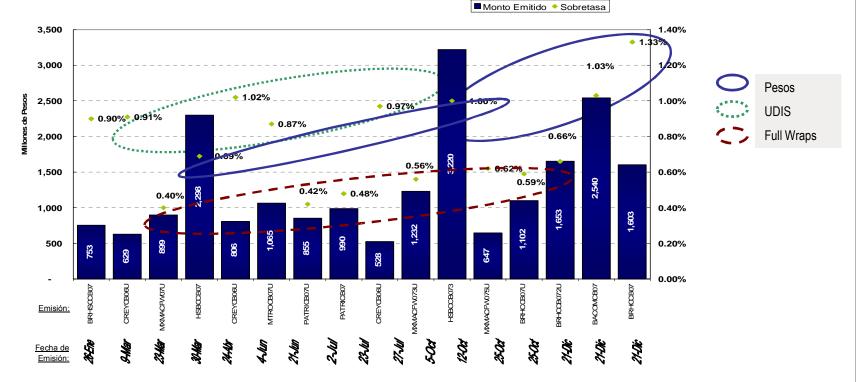
- BORHIs structures count with different credit enhancements that make them solid:
  - Mortgage Insurance
  - Partial Credit Guarantees
  - Mezzanine Bonds
  - Full Wraps
  - Over collateralization

The impact on the liquidity of the local market due to the Subprime crisis did not affect the successful issuance of almost \$2,500 million USD in BORHIs in 2007, and the wider spreads we observed only mirrored the levels of the initial transactions back in 2004.

## Impact of the Subprime crisis on the local market liquidity



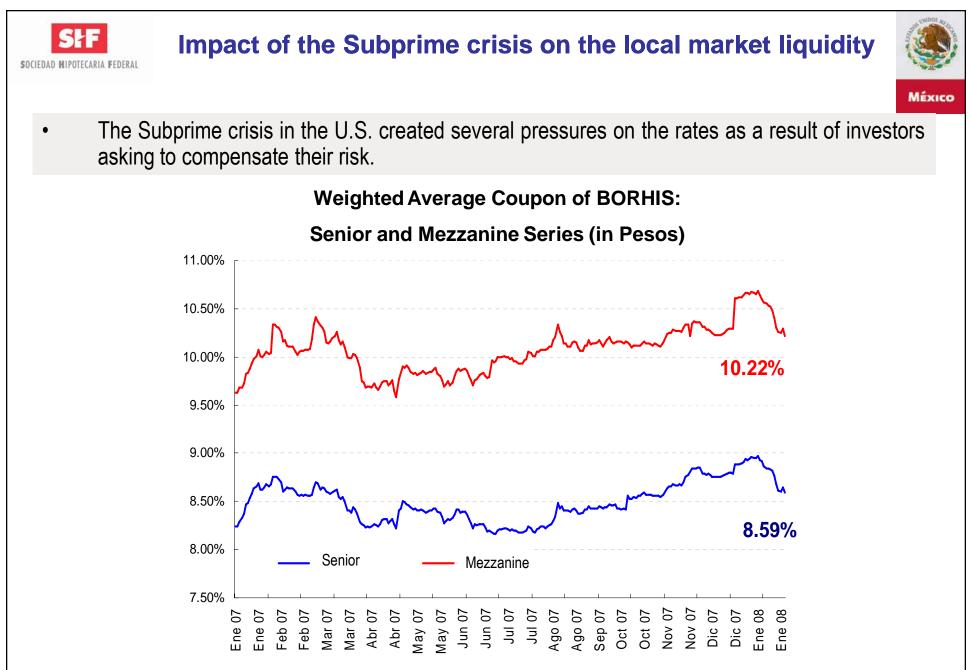
- During 2007, issuances successfully accounted to almost \$2,500 million USD\*, but the atypical condition of the market created several pressures on the rates as a result of investors asking to compensate their risk.
- This growth happened despite the adverse circumstances caused by the Subprime crisis which the market presented in 2007.



\* Incluye Mezanines, BORHI de BORHIS y emisión Cross Border de SuCasita

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Source: Valmer, with data updated to January 28th, 2008



However, as the BORHIs market is still on its early stages, it is important to correct and adjust some aspects in order to improve its efficiency



- Some aspects must be strengthened to continue providing this market with dynamism, sustained growth and security for the investor.
  - Homologation and standardization of the periodic information reported by servicers and trustees, aiming to add transparency to the analysis and monitoring of the structures.
  - Value the bonds in terms of prices instead of rates to provide simplicity to their valuation.
  - Establish a standardized public calculator to price the structures.
  - Make structures homogeneous.
  - Adjust the rules that define the characteristics of BORHIs to line up the incentives and distribution of risks between participants.
  - Adjust the operation rules of market makers.



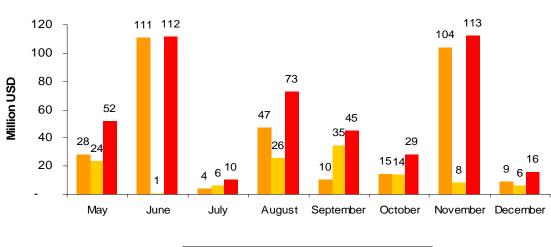
SHF together with the participants of this market, has played an important role to correct the aspects required to consolidate it and provide stability conditions to BORHIs



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#### 1.- Market Makers

- Participation on the sale/purchase of these instruments on the secondary market with the objective of providing liquidity at all times.
- We are also reinforcing the correspondent rules in order to promote an active participation of these institutions.



Secondary market operations

🗖 Total Purchases 📕 Total Sales 📕 Total

Despite SHF participated actively as a Market Maker in 2007, to this date it only possesses 20% of the outstanding issuances.



SHF together with the participants of this market, has played an important role to correct the aspects required to consolidate it and provide stability conditions to BORHIs



#### 1.- Market Makers

- Given that in current market conditions SHF has been the main liquidity provider, SHF will revise the current Market Maker rules and look for areas of improvement in the market's structure, including:
  - ✓ Standardization and quality for every issuance, including mortgage portfolio performance and structure waterfall.
  - ✓ Introduce a third party to provide a standard valuation calculator for analysis and modeling of all structures in the market place.
  - ✓ Possibility of securities lending to allow short selling.
  - ✓ Quoting mechanism in prices instead of the current practice in yields.
  - Measure Market Makers' secondary market activity and require minimum activity levels.

\*/ Compra significa que SHF es el comprador del papel.



SHF together with the participants of this market, has played an important role to correct the aspects required to consolidate it and provide stability conditions to BORHIs



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- 2. SHF as provider of liquidity during stress periods
- Participates as a source of stable financing by purchasing BORHIs on the primary market, at the same time of promoting:
  - ✓ More certainty on the markets during periods of lack of liquidity not associated with insolvency from this sector,
  - ✓ Mechanisms of financing which are standardized and congruent with the growth of this sector.
- 3. Promote efficiency on the BORHIs market
- Aiming to count with periodic information which is complete and standardized, we included these
  requirements on the normative framework for issuers to be published by our Banking Supervisor
  Entity.
- Monitoring the secondary market activity.
- Promote specialization of originators, servicers and investors taking risks on this market.
- 4. Redefinition of BORHIs
- As it is necessary to incorporate measures to guarantee the correct management and monitoring of the mortgages that serve as collateral of these bonds, SHF is reviewing the rules which define the characteristics required to be certified as a BORHIs.





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sociedad HIPOTECARIA FEDERAL Covering the Demand and the Historical Housing Unattendance



- Given the demand for 2008 of 1,159,379 houses and the lag in the attention to more than 9 million families, the potential housing market in Mexico is huge.
- The macroeconomic stability and a highly competitive financial system has improved the offer of mortgage products, allowing to attend more population sectors.
- Infonavit and Fovissste are covering the demand of the population laboring in the formal sector.
- Thus, SHF will focus itself in the promotion of the participation of the private sector in the mortgage market in order to cover the demand of the low-income sectors that are currently unattended.

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## Covering the Demand and the Historical Housing Unattendance





- To attend the population that has not been attended by income and labor condition, the actions of SHF will be focus in:
  - Strengthening and consolidating the Residential Mortgage Backed Securities Market.
  - Promoting the entrance of new specialized financial institutions in the unattended sectors: microfinance institutions, non-bank banks, and savings and credit institutions.
  - Developing of adequate products for these markets: savings and leasing.
  - In coordination with CONAVI, adjust the Program of Subsidies to extend the access to mortgage loans.
  - Development of financial markets to attend the financing of infrastructure, equipment, and maintenance of the production of sustainable housing.
  - With respect to the previous point, SHF will take advantage of its experience in the development of securitization markets to securitize the franchises and flows of these *Macrodesarollos*.

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## **Final Remarks**



- The fundamentals of the Mexican economy and the housing sector in Mexico have proven to be solid during the global economic turbulence.
- The mortgage market has evolved using the best practices, and taking into consideration previous economic and financial experiences, so it has the proper infrastructure to face adverse circumstances.
- In particular, the BORHIs market presents solid characteristics compared to the MBSs backed by Subprime loans.
- The participants of the market and SHF continue to reinforce the mechanisms for issuing bonds, considering protecting the investor as a priority, in order to continue financing the houses Mexican population demand.



## **Final Remarks**



- SHF has promoted the access to mortgages through the development of a market conformed by investors, financial intermediaries and guarantors that accounts for more than \$4,000 million USD.
- This market is ready to be redirected towards new phases of housing such as infrastructure, equipment, construction loans, and urban development conservation, helping improve the return of the projects and the features of the homes to be built.
- However, the market is still on its early stages and in order to avoid a contagion from the Subprime crisis, it must be protected by Issuers, Investors, Structuring Agents and Guarantors in order to keep the appropriate and improved conditions of financing it requires.



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# Mortgage Market in Mexico: Resilience to the Global Economic Challenges