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Mexico

Real Estate Outlook

January 2011

Economic Analysis

- 2011, a better year for construction and housing; growth could surpass the average for the economy

- The full normalization of construction loans will spur the reactivation of housing

- A better outlook for housing sales in the medium and residential segments; consumer confidence a key factor

- Despite the recovery, regional differences will continue

Index

Closing date: December 31, 2010

1. Summary

The construction industry will resume growth in 2011, at a rate surpassing that of the economy, spurred to a great extent by housing

The construction industry posted a steep decline in 2009 and part of 2010 as a result of the economic recession in that period. In terms of the magnitude and duration of the adjustment, the evolution of the construction industry during this cycle shares certain similar characteristics with the most recent recessive episodes. However, it also has better support elements that will allow resuming growth. The outlook for the construction industry is of 4.6% growth in 2011 (vs. 4.3% for the economy overall), which will be due to infrastructure works and housijng construction.

After a process of adjustment in 2009 and 2010, mortgage loans resume recovery

Although with regional differences and by segments, mortgage loans began to show signs of recovery as of the second half of 2010 and there are conditions for this trend to continue in 2011, when 600 thousand loans could be placed, which would imply growth close to 7% and 10% in real terms in the amount of credit. Going forward, in order to guarantee a new period of sustained growth, the industry must improve its capacity to adjust in a timely manner to the changes in market trends and attend to housing needs in an overall manner.

Despite the lower participation of sofoles and sofomes in the industry, the flow of financing for housing was maintained in 2009 and 2010

In general terms, financing channels have been maintained from construction loans to the granting of mortgages. In the medium term, the challenges in terms of financing consist in improving the regulation and supervision of agents participating in the industry and to develop, through the banking system and government housing institutions, financial instruments that will expand and strengthen long-term funding sources for the sector.

Property taxes could become a useful reference for housing policy and urban development

Among the different sources of revenue, property taxes have certain characteristics that place them in an advantageous position against other taxes, given that their application is simple, difficult to evade and they do not alter the economic decisions of the agents. Despite the fact that they are not used very much, these taxes offer high potential both in terms of collection as well as for guiding policy regarding the use of land and urban development.

The Infonavit 2011-2015 Financial Plan could have a significant impact on the industry

In the diagnosis that the National Housing Fund Institute for Workers (Infonavit) conducts annually to determine its strategies and policies for the next five-year period, an outstanding element is a review of the estimates to determine housing needs, which point toward a reduction, but above all, to a change in the type of solutions that will be required in the medium term in view of the gradual depletion of the traditional market. Due to the absence of new credit productis, the Infonavit's revenue could grow at a significantly higher rate than its expenses throughout the following decade. Finally, there is a significant need of better instruments to raise building standards and the quality of life and assets of its credit holders.

2a. How is the construction cycle performing? Is its recovery much slower and lagging than on previous occasions?

After being one of main driving forces of economic activity for the better part of the last decade, the construction industry posted a steep drop in 2009 and part of 2010, of which incipient signs of recovery are barely palpable. The current cycle shares some similarities with previous recessive episodes, although it also presents important differences. For example, on this occasion, the contraction in construction was not as intense and similar to that observed in the economy as a whole (GDP). In this article of *Mexico Real Estate Outlook*, an analysis of the recessions throughout the last fifty years is presented, which offers elements for evaluating the recessions in the construction industry as to their magnitude, intensity and duration, and it also allows analyzing the speed of their departure. The structural transformations that have contributed to mitigating the crisis and will facilitate recovery are mentioned. Lastly, the data estimated for the economy and construction for the close of 2010 and the outlook for 2011 are set forth in detail..

The current cycle in perspective: a less profound recession

Throughout the last 50 years between 1960 and 2010, the Mexican economy and the construction industry have experienced a total of eight recessions[1]. Compared with the current cycle, some common characteristics are evident in the performance of construction, although there are also some important differences. In the first place, the strong sensitivity or high elasticity of revenue in this industry is evident in terms of the economic cycle. In the sixties and seventies, a slowdown was enough in the expansion rate of the economy to observe a marked drop in construction. In the recessions of the eighties and nineties, the drop in construction was seven times on average with respect to the economy as a whole. In part, the performance of construction during this period was heightened, both upwards and downwards, due to the macroeconomic policies that have been called "startup and stop" boosted by a pro-cyclical performance of public spending. In the cycle, just recently an important difference appeared at this point, inasmuch as in 2009, the year of recession, both GDP and the construction industry dropped at similar rates of 6.1% and 6.4%, respectively[2].

The explanation for this difference, analyzed and documented in detail in previous editions of *Mexico Real Estate Outlook* (see issues of October 2008 and January 2009), has to do with the progress in macroeconomic stability (low fiscal balance, the autonomy of the central bank (Banxico), progress in the credibility of the monetary policy, all of which have led to low inflation levels, etc.), as well as structural changes in the infrastructure and housing programs. For example, long-term mortgage financing at a fixed interest rate in pesos, with various insurance plans, such a unemployment, life, etc., improved processes for credit openings on the part of the financial institutions, as well as a better framework for bank supervision and regulation, among others.

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[1] For its classification we consider the traditional definition that regards a recession when at least two consecutive quarters of a drop in activity are present and therefore, it can be interpreted as a generalized decline of the economy and employment.

[2] It is estimated that the shock from the influenza outbreak of 2009 accentuated the decline in GDP by 0.2%.

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Chart 1
Comparison of GDP growth cycles and construction

	Average drop of the cycle		Maximum contraction (Quarterly)		Duration of the cycle (years)*	
	Total	Const.	Total	Const.	Total	Const.
2009	-0.5	-2.0	-8.6	-6.7		
2001	1.1	-0.2	-1.6	-5.6	3.3	2.5
1995	-5.8	-17.6	-7.7	-29.7	2.3	4.0
1986	-2.1	-3.9	-4.3	-12.1	3.3	5.5
1981	-1.7	-9.3	-4.9	-23.8	3.5	12.5
1973 (a)	3.4	-5.3	n.d	n.d	6.0	8.0
1966	3.4	-4.5	n.d	n.d	4.0	7.0
Average	**-0.3**	**-6.1**	**-5.4**	**-15.6**	**3.7**	**6.6**

*Time required to reach the level prior to the crisis
(a) The annual rate is considered due to the lack of quarterly data
Source: BBVA Bancomer with Banco de México data

Graph 1
**Total GDP and construction GDP
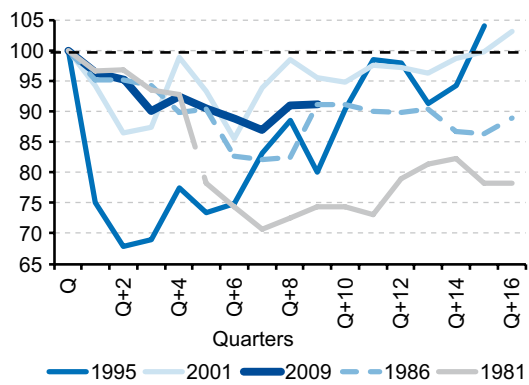Annual % change**
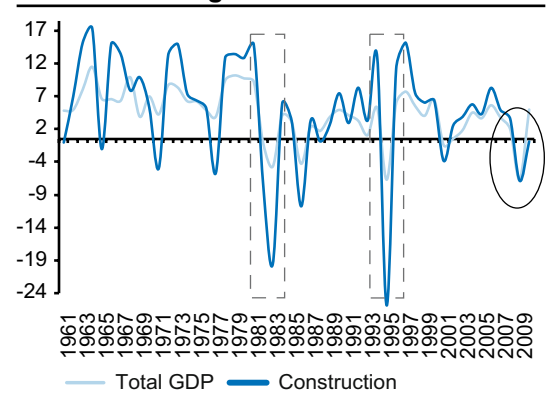
Source: BBVA Research with INEGI data

Second, in terms of the intensity, the recent recessive cycle has been similar to the previous one, since, in both, the drop in the production volume from the maximum to the minimum point was on the order of 15%, and it was reached at the end of a year and a half. In contrast, in the recessions of the eighties and nineties, the magnitude of the contraction was much more severe and was reached in less time (on average, the 22 % drop between the maximum and minimum point, which was reached in 6 quarters). This simply is the reflection of the structural changes of the economy (privatizations, economic opening, less dependence on oil, etc.) and which allow absorbing in a better manner the shocks of supply and demand, with macroeconomic policies that have been more responsible and have gradually been gaining the capacity to absorb these shocks in a better manner.

Graph 2
**Construction in recessive cycles
T index=100 in quart. of max. prod'n.**

Source: BBVA Research with INEGI data

Graph 3
**Construction GDP and total GDP
Annual % change real AE* series**
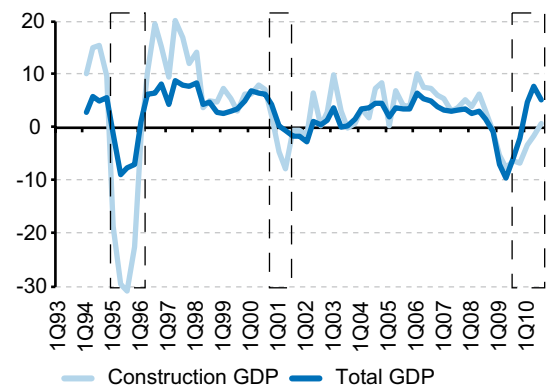
*Seasonally adjusted
Source: BBVA Research with INEGI data

Third, as to the duration of the cycle, measured from the point in which the production starts to fall until it recovers the level prior to the crisis, the current one continues on a trajectory similar to the two previous ones of four years. That is, it will be toward the middle of 2012 when the industry recovers the levels of 2008, which implies growth rates on the order of 24.6% in 2011 and 6.1% in 2012, in accordance with the trajectory indicated in our base scenario.

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Which activities have been the most affected?

Even though the drop in construction was generalized, some activities did so more than others. Building, the main boosting element between 2004 and 2007, was the greatest contribution to the drop between 2008 and 2010. In Its interior, the greatest impact was on housing and commercial and services activity (included here is the construction of industrial plants, offices and shopping centers) that is, activities carried out by the private sector.

In contrast to what occurred in the activity of the private sector, construction works relative to education and health mitigated the drop in building; similarly, other construction projects, especially transportation, partially compensated the drop in production in the industry. This confirms the efforts made by the federal government to counteract the effects of the recession through greater investment in public spending for the expansion or maintenance of infrastructure. It is clear that these efforts were limited, in part because the execution of the budget did not progress in the speed foreseen (due to some bottlenecks in the execution of the National Infrastructure Program) and also in part because the participation of the public sector in the value of the works constructed is lower than that of the private sector. This indicates that the budget efforts, both at a federal and state level, served to mitigate the drop, but they did not prevent it.

Graph 4
Construction: production value.
Real change and contributions, % and pp
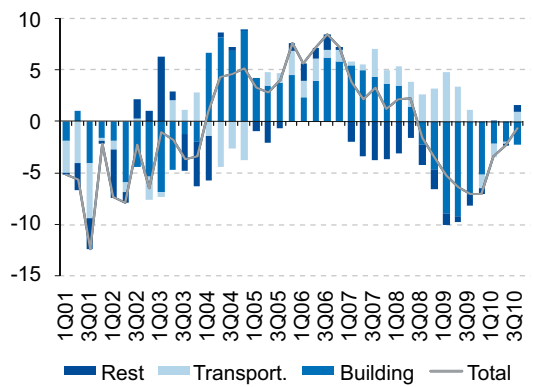
Source: BBVA Research with INEGI data

Graph 5
Components of construction
Real annual % change. AE* series
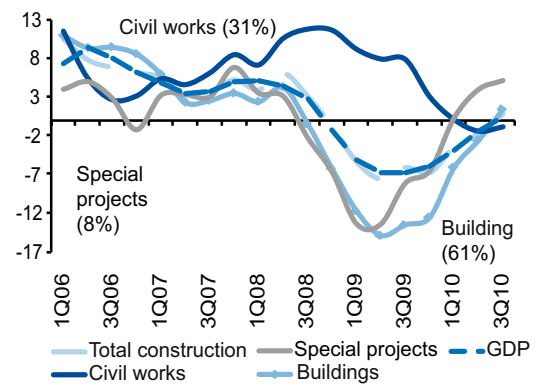
*Seasonally adjusted
Source: BBVA Research with INEGI data

Signs of recovery, consistent with the rest of the economy

At the end of 2010, the construction industry was already showing clear signs of recovery. Growth, measured in annual terms, began to be seen since the third quarter. Employment in construction, which in 2009 contributed 25% of the loss at a national level (105,000 out of 440,000 jobs, in an annual average), began to rally (at an annual rate) since the second quarter of 2010, and,by the third quarter, it was progressing more rapidly than the rest of productive activities. Other indicators, such as cement sales, are equally showing a course of clear recovery.

What is to be expected for 2011?

Based on what occurred in previous recessive periods, as well as in short-term trends, growth in the construction industry can be expected for 2011 in our base scenario at a slightly higher rate than the rest of the economy. On the one side housing, which throughout the last five years has contributed around 27% of the production value of the industry, should retake growth once again, together with employment, financial stability, real wages and consumer confidence (see

section 2b. Housing Activity). On the part of the public sector, the Expenditures Budget of the Federation indicates a real increase of 11.6% in investment spending[3], relative to infrastructure works and although this in itself does not guarantee greater growth[4], the incentive for presenting concluded works before the current administration ends will be important for the budget to be exercised in full. Thus, the outllook for the construction industry is of 4.6% growth in 2011, in which the civil works will be the main source for boosting growth of 5.2%; construction, for its part, could register a 4.2% increase.

Graph 6
Employment: total vs. construction, Annual % change
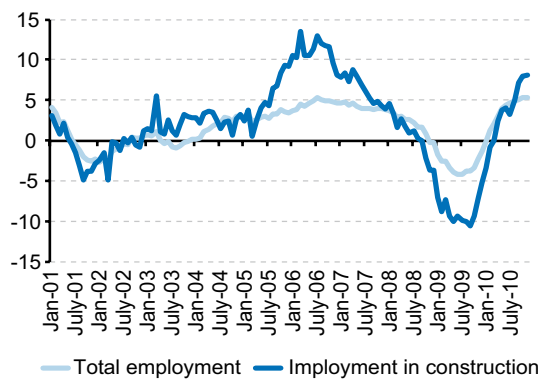
Source: BBVA Research with INEGI data

Graph 7
Construction vs. indicators of activity, Index Jan-08=100, AE* series

*Seasonally adjusted
Source: BBVA Research with INEGI data

Conclusions: a better cycle for construction, with a less pronounced decline and recovery similar to prior occasions
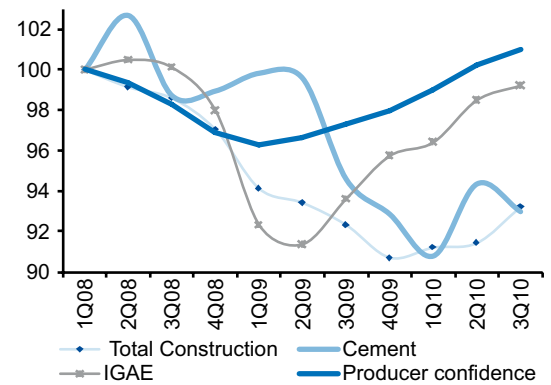
Although the recent decline in construction was intense, it does not differ much from that observed in prior recessive periods of the recent past. Construction is showing firm symptoms of recovery after a long period of contraction that was extended close to two years. Its recovery, as always, is lagging compared to the economy, although as opposed to previous recessions, it has better support for a vigorous and sustained conclusion. Construction can grow above the average of the economy during 2011 and 2012. In particular, housing will play a key role, although it will not be the only factor, since, on the part of the private sector, expansion in demand will boost the building of offices, shopping centers and industrial plants; also, on the part of the public sector, spending on infrastructure will continue to contribute to growth.

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[3] At November 2010 prices
[4] Through October, investment spending by the Communications and Transportation Ministry and the Federal Electricity Commission registered greater under-performance of 40% with respect to what was approved for the year, and for Pemex of 30%.

2b. Housing: after two years of adjustment, conditions to resume more generalized growth among the different segments

After a period of dynamic growth during the greater part of the last decade, in 2009 and 2010 the housing industry faced a deep--and necessary--adjustment. The detonator was undoubtedly the economic recession, although the magnitude of this adjustment is due to a combination of various factors, both of supply as well as demand. This section of *Mexico Real Estate Outlook* analyzes the elements behind the evolution of the housing industry in recent times and the outlook toward 2011, which points toward recovery. Going forward, to guarantee a new period of sustained growth, the industry should improve its capacity for timely adjustment to changes in market trends, as well as adopting a more comprehensive view toward housing needs.

The adjustment in the housing industry was imminent

The housing industry experienced accelerated growth during the greater part of the last decade. Between 2000 and 2008, the annual number of mortgage loans for full housing (new and used) grew from 250,000 in 2000 to 640,000 in 2008.

This process, however, generated some complications. As of 2008, isolated signs of excess supply began to appear in some locations and housing segments (*Mexico Real Estate Outlook*, September 2008). In 2009, the recession led to a deep contraction in demand, due to loss of jobs, real income and deterioration of consumer confidence. In terms of financing, the crisis also restricted liquidity and the capacity to grant credit to the mortgage sofoles and sofomes, which financed both builders as well as housing buyers in the medium- and low-income segments. Finally, housing developments have not always met consumer needs efficiently, which makes housing sales difficult. According to the Infonavit (the Housing Fund for Workers Institution), nearly 26% of housing financed between 2006 and 2009 with loans from this institution are uninhabited, for the most part due to problems of location and the urban environment associated with the housing development (see article 3b. Implications for the Housing Industry of the Infonavit 2011-2015 Financial Plan).

In 2009, the federal government sought to maintain growth in the industry through housing for the low-income segments of the population, who receive subsidy support (both in terms of amount as well as interest rates). Measured in constant prices, the amount of financing provided by public housing institutions maintained practically the same level between 2008 and 2010, around 150 billion pesos. In turn, for private intermediaries, whose maximum level of financing had been reached in 2007 with nearly 130 billion pesos, by 2010 this amount had been reduced to close to 60 billion pesos, a drop of more than 50% in real terms.

The reduction in private financing reflects, on one hand, a lower participation by the sofoles, which had provided 30 billion pesos in 2007, and in 2010 barely surpassed two billion pesos. However, it also reflects that the greater part of the contraction of the market corresponded to the medium- and high-income segments, which are those mostly serviced by the commercial banks.
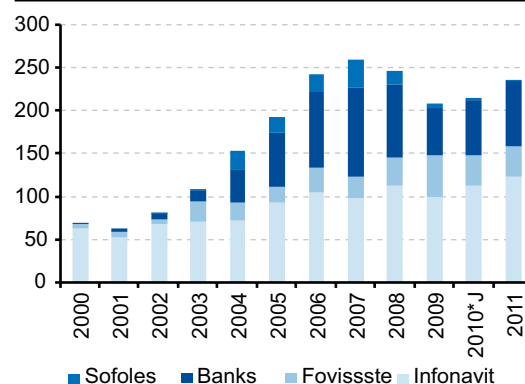
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Graph 8
**Mortgage loans 2000-2010
Thousands of loans**
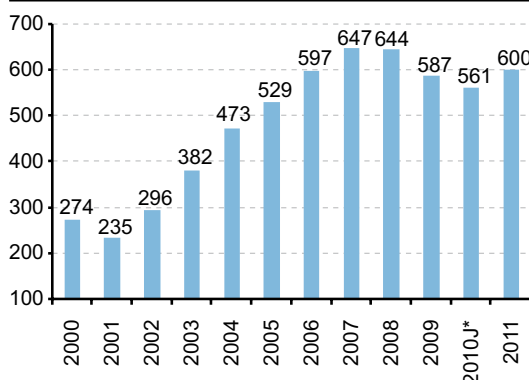
Graph 9
**Mortgage loans 2000-2010 by institution,
billions of pesos at 2010 prices**

J/ Estimated as of that date
* with figures through October
Sourcee: BBVA Research with Infonavit, Fovissste, ABM and
AHM data

J/ Estimated as of that date
* with figures through October
Sourcee: BBVA Research with Infonavit, Fovissste, ABM and
AHM data

2010, year of stabilization and gradual recovery

Although the greater part of the adjustment of the market occurred in 2009, some of its effects were still felt in 2010. The figures for loans placed by segment confirm that the impact of the recession was more modest in housing for the low-income population. For example, compared with 2008 levels, housing that was considered to be of "social benefit", or the segments termed "Economy", "Popular" and "Traditional", according to classification by the Asociación Hipotecaria Mexicana (AHM), (The Mexican Mortgage Association), which represent nearly 75% of Infonavit mortgage loans, posted a drop of almost 11% in 2010, while housing in the "Residential" and "Residential Plus" segment fell 22%. For the housing market overall, the contraction during those two years was close to 13%.

Chart 2
**Mortgage loans by housing segment
(Thousands)**

	Thousands of loans			% change		
	2008	2009	2010*	'09 vs '08	'10 vs '09	'10 vs '08
Total	**644**	**587**	**561**	**-8.9**	**-4.5**	**-13.0**
Eco. + Pop. (350 thous.)	347	310	308	-10.7	-0.6	-11.3
Traditional (610 thous.)	184	178	163	-3.5	-8.5	-11.7
Medium (1.3 mill.)	78	72	63	-7.5	-12.7	-19.2
Residential (2.6 mill.)	27	21	21	-21.2	-2.1	-22.8
Res. Plus (+2.6 mill.)	8	6	6	-23.3	2.5	-21.4

Note: figures might not coincide with those reported by other sources (AHM, Conavi) due to the classification
Source: BBVA Research with Infonavit, Fovissste, ABM and AMFE data

Chart 3
**Mortgage market 2010, (Thousands of
loans and billions of pesos)**

	Number of loans (thousands)			Credit amount		
	2009	2010*	Chng. %	2009	2010*	Real % change
Total	**587**	**561**	**-4.4**	**216**	**215**	**-4.0**
Interm. Priv.	39	14	-64.2	64	66	-1.4
Banks	36	13	-64.2	61	64	0.7
Sofoles/ Sofomes	3	1	-64.3	3	2	-40.2
P. Institutions	548	547	-0.1	151	149	-5.1
Infonavit	447	473*	5.7	104	114	5.8
Fovissste	100	74	-26.1	47	35	-29.0

Note: Co-financing is reported in loans granted by public institutions
*Estimated with figures through October
Source: BBVA Research with AHM data

What is noteworthy however, is that as of the second half of 2010, the placement of loans in the medium- and high-income segments began to rally, which is consistent with other indicators of the economy; for example, those related with consumer confidence, employment and production in general, which anticipate gradual recovery and more generalized in the housing industry in 2011.

Graph 10
Mortgage loans, low-income segments (Thousands)
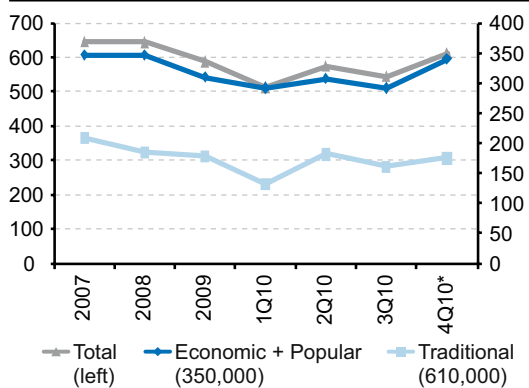
Total (left) — Economic + Popular (350,000) — Traditional (610,000)

Note: for 2010, annualized figures. Figures in parenthesis deno-
te top price in 2010, according to AHM classification
* With data through October for Fovissste and Sofoles, and
November for Infonavit and banks
Source: BBVA Research with Infonavit, Fovissste, ABM and
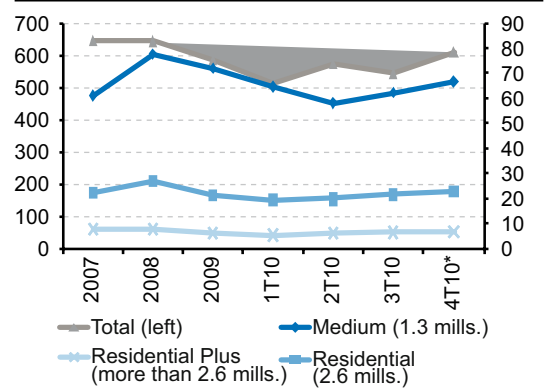AMFE data

Graph 11
**Mortgage loans, medium- and high-income segments (Thousands)**

Total (left) — Medium (1.3 mills.)
Residential Plus (more than 2.6 mills.) — Residential (2.6 mills.)

Note: for 2010, annualized figures. Figures in parenthesis deno-
te top price in 2010, according to AHM classification
* With data through October for Fovissste and Sofoles, and
November for Infonavit and banks
Source: BBVA Research with Infonavit, Fovissste, ABM and
AMFE data

From a regional standpoint, the placement of mortgage loans confirms that the greater part of the contraction of the market was in the medium-income segments. The loans granted by public institutions, considering only those that imply their own resources (loans for workers earning up to six minimum wages) had a significantly more favorable performance than those granted by private intermediaries, and which go mainly to medium and residential housing.

Housing inventory indicators, measured over the time required by builders to sell a complete development, are consistent with the gradual stabilization of the market in 2010, although higher than in 2009 when they remained practically without change during the greater part of the year.

Graph 12
Individual loans by institution and region 2010*, Annual % change

Public Institutes (equity only) ● Total
Private intermediaries (own resources + cofinancing)
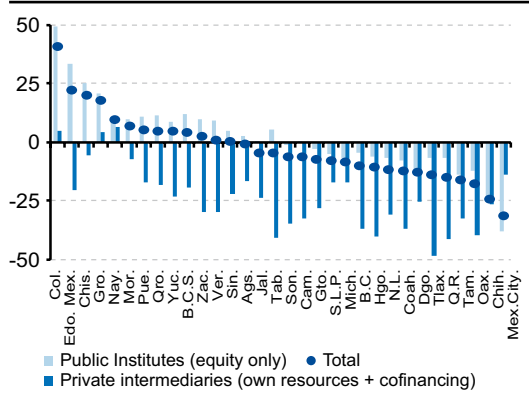
*January-October
Source: BBVA Research with AHM data

Graph 13
Housing inventories by segments Months*

Low-income segments
Segments of middle and upper income
Total
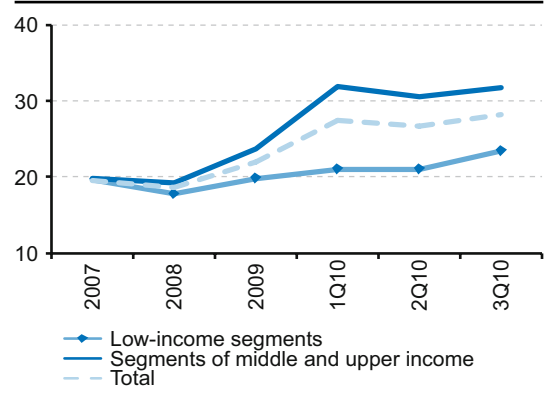
* Months to sell off the development at the current rate of sales
Source: BBVA Research with Softec data

Construction startups offer a perspective of the magnitude of the adjustment of the industry in terms of supply. According to the projects registered in the Sole Housing Register (Registro Único de Vivienda (RUV[1]), while in 2008, around 630,000 housing units were built (or construction was at least begun), in 2009, the number was 450,000, a contraction of almost 30%. In 2010 (through the third quarter), there was a slight recovery (toward 470,000 annual housing units), although cautious on the part of developers, who will probably wait to confirm clearer signs of reactivation of demand before initiating new projects. It must also be said that at the regional level there are important differences in this area; while in some states, such as Guerrero, registration of projects grew 144% annually in 2010 (through September), in the state of Nayarit, it was lower by 42% (Infonavit, 2010).

Also, in part, the trend toward more moderate growth in the startup of housing construction could be reflecting in some cases symptoms of saturation in the market, and that, going forward, the growth of supply could be through lower size projects, with a lower number of housing units, but probably with greater care of housing attributes.

Graph 14
Building project startups, housing construction, Thousands, RUV
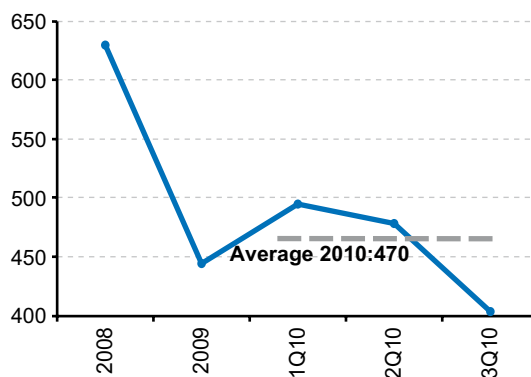
Source: BBVA Research with AHM data

Graph 15
Builders registered in the Infonavit (according to size of housing development)
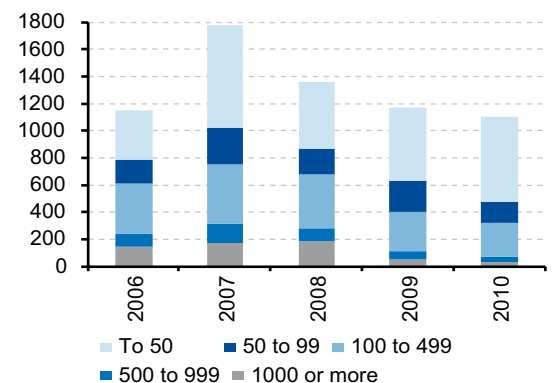
Source: BBVA Research with Infonavit data

Consolidation of the industry a result of the crisis

As part of the process of adjustment in the industry, builders with a more solid capital and technology base were able to strengthen their position in the market, both by absorbing projects that were left without financing sources for their completion, and by the fact that the dynamism of the market was based mainly on low-cost housing for low-income buyers, where the price obliges builders to generate economies of scale in order to be competitive.

According to the Infonavit registers, 2007 was the year with the greater number of builders with registered projects, with 1,762, and as of that time, the number has dropped to 1,106 in 2010 (January to September). The consolidation was mainly among medium and large size companies: between 2008 and 2010, the number of builders that registered more than 1000 housing units fell from 14% to 3%; also, the companies that registered between 100 and 500 units fell from 29% to 22% in the same period.

The larger companies have taken advantage of this adjustment. The drop in their sales, 4.4% in 2009 and 2.3% in 2010 (through the third quarter), was barely half compared to that of the rest of the market. The result has been an increase in their share of the market: the sales by builders whose shares are traded on the stock market (ARA, Homex, Sare, Urbi, Geo and Consorcio Hogar) increased their share of 29% of Infonavit loans in 2008, to 33% in 2010 (Infonavit 2010).

[1] Whose main limitation (for purposes of measuring construction startups) is that they only include housing units that are sold through Infonavit and Fovissste credit; although due to their size it is a very representative sample of the general trends in the industry.

Used housing, increasingly more important

An important trend in recent years is the used housing market, whose share in total mortgage loans granted has grown. Based on the Infonavit as reference, its share in the used housing market rose from levels of 17% in 2007, to 27% in 2010. Moreover, this is a trend that is seen in all the segments. There could be various explanations for this, although several indicators, such as the Infonavit Housing Quality Index (Índice de Calidad de la Vivienda (Icavi) and buyer surveys, indicate that used housing offers better attributes (in terms of materials, spaces, location and environment) than new housing[2]. Other factors that might explain greater acquisition of used housing could be the price and the increase in supply, due to the number of new housing developments that have been built in recent years.
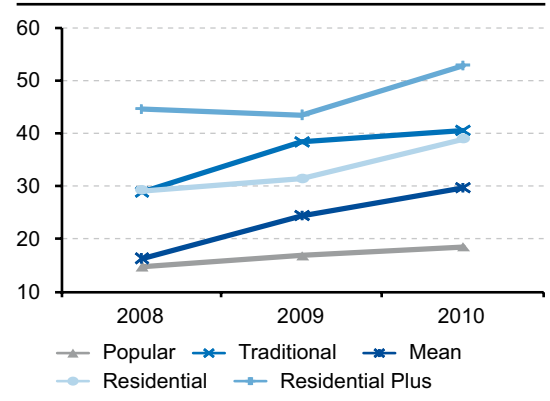
Graph 16
**Infonavit: used housing,
% of total loans**
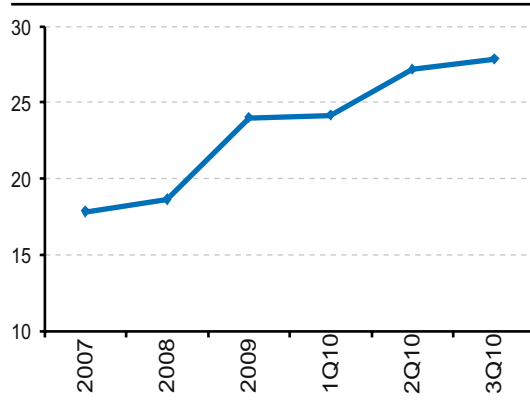
Source: BBVA Research with Infonavit data,

Graph 17
**Infonavit: used housing by segment,
% of total loans**

Source: BBVA Research with Infonavit data

Conclusions: 2011 will be a better year for housing, although the industry faces pending challenges

The housing industry experienced a significant adjustment in 2009 and part of 2010, set off by the economic environment, but which was partly necessary to correct some imbalances that had been generated after a long period of strong growth. 2011 promises to be a year of recovery, although not at the levels reached in 2007 and 2008. Our projections indicate that, in 2011, the number of mortgage loans could grow around 7%, which would imply a real increase of 10% in the amount of credit; these figures should be valued positively.

Looking forward, it can be said that some of the changes in the housing industry have been due to temporary existing conditions, but others respond to trends that could consolidate in the medium term as structural in the sector. The market has become more demanding and requires solutions that are better adapted both for the formal and informal sectors, smaller housing developments that are better located and planned, as well as vertical housing, which could be the base for the development of the industry in future decades. The challenge will be to develop products that serve these markets, which jointly offer greater potential than that of traditional housing.

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www.Infonavit.org.mx
www.ahm.org.mx

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[2] This should be a reference for builders, of making construction works a priority in terms of the needs and preferences of potential buyers.

2c. Financing: stability returns gradually and resources flow again

As regards financing, 2010 was a year of stabilization and of a gradual return of the flows to the housing industry. In line with the best performance of economic activity, the construction loan began to recover part of the dynamism shown prior to the crisis. For their part, the balances of the loan portfolio continued to increase; although at a modest rate; they managed to compensate the decrease in mortgage loans granted by the sofoles and sofomes. In turn, the past-due loan portfolio began to stabilize, a reflection of the improvement in employment conditions. Lastly, with regard to the issues market, the boost came, the same as in 2009, from the public institutions, in particular from Fovissste, which has incurred in this market successfully. In this section of *Mexico Real Estate Outlook*, we review the main recent trends that have been registered throughout the financing chain of the housing industry.

Construction loans begin to be re-established

In 2009, financing through construction loans presented a drop on the order of 36% in real terms, from $57 billion pesos to $37 billion (measured at constant 2010 prices). In 2010, this negative trend began to revert and the figures through October pointed to annual growth of close to a real 10%, which implies a flow close to $40 billion pesos. The number of homes financed via a construction loan through October 2010 presented a 21% rise compared to the same period of 2009 (from 120,000 to 146,000).

Given that the growth in the loan balance is lower than the number of homes built, implies a lower average loan amount for each home built ($475,000 vs. $253,000 pesos), or that its share of housing for the low-income population increased[1]. This is consistent with the trends registered in terms of the placement of mortgage loans and also with the evolution of the construction loan at a regional level. The greater growth in this type of financing was recorded in states where it is aimed at the low-income housing population; it has greater weight than in other states of the country, such as for example: Chiapas, Veracruz and Hidalgo. However, these states were not the only ones to register high growth rates in the construction loan, because nearly half of them registered a two-digit increase rate. It is clear that this was not compensated with important drops in other states, such as some in the border regions (Baja California, Tamaulipas, Chihuahua) and others strongly dependent on foreign tourism (Quintana Roo, Baja California Sur). This shows that the process of recovery of the industry is presenting strong asymmetries.

Through October 2010, the balance in the construction loan portfolio rose to $65 billion pesos, of which two thirds corresponded to banks and the rest to mortgage sofoles and sofomes.

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[1] Although the result could have also partly reflected a more conservative policy in the granting of loans by the financial intermediaries.

Graph 18

Financing via construction loans, billions of pesos, constant prices of 2010
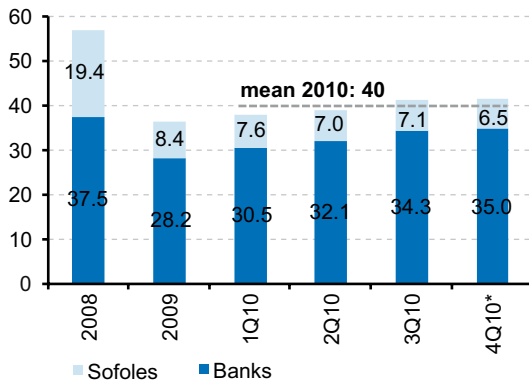
Source: BBVA Research with AHM data

Graph 19

Construction loan: regional evolution 2009-2010 billions of pesos, 2010 prices
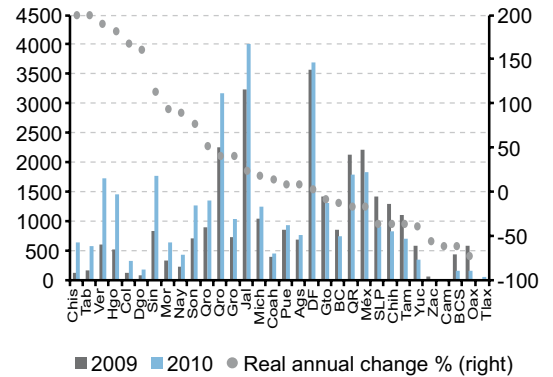

Source: BBVA Research with AHM data

The balance of the mortgage loan portfolio continues to rise

During the past decade, the balance of the mortgage loan portfolio grew close to 70% in real terms, more than other financing segments and also at a higher rate than the average of the economy, measured by as a proportion of total financing to the private sector; between 2000 and 2010 its share rose from 22% to 25%, while as a proportion of GDP, it grew from 6.5% to 10%.

In the current cycle, despite the drop in activity during 2009 and 22010, the balance in the mortgage loan portfolio--considering both private intermediaries and public institutions--did not halt, and even showed positive signs of increase in the whole period. This means that it was possible to compensate the lower share of the sofoles in the industry; in 2008, the balance in the mortgage portfolio of the latter was close to $90 billion pesos, although, for 2010 it barely surpassed $20 billion pesos.

In the beginning, these institutions were favored by the governmental policy of channeling greater resources to housing for the low-income population, although in time, they managed to consolidate this market niche successfully, which requires knowledge and a specific business model to service It. The industry is now facing the challenge of developing adequate financing products and the experience to attend the market that the sofoles and the sofomes have left vacant.

Graph 20

Mortgage loan portfolio balances billions of constant pesos of 2010
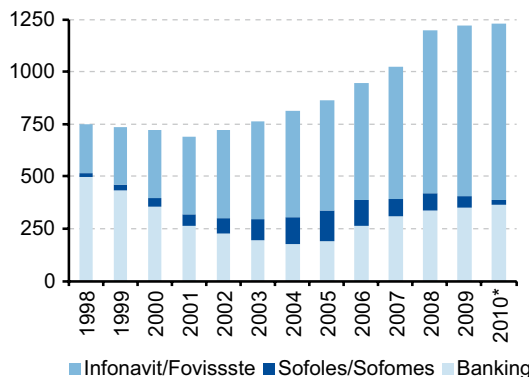
Source: BBVA Research with Banxico (central bank) data

Graph 21

Mortgage loan portfolio balances Real annual % change

Source: BBVA Research with Banxico (central bank) data

BBVA Research

The past-due loan portfolio has stabilized for the banks

The economic recession of 2009 brought with it a deterioration of the loan portfolio, although in this process the most affected institutions were the sofoles and sofomes, for which the default indexes were mult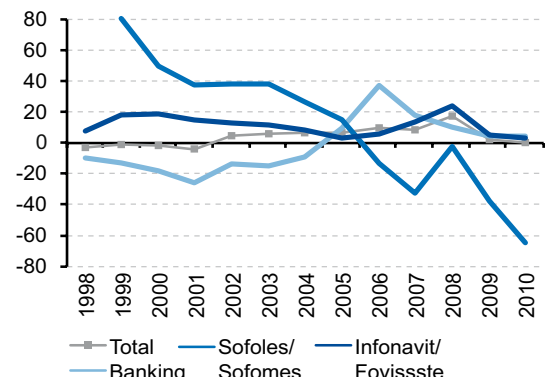iplied by four, between 2007 and 2010: in mortgage loans, from 4% to 16%, while in construction loans, from 10% to 40%; however, for the industry as a whole, default registered more manageable levels, which at the end of 2010 did not come to 6% in the case of mortgage loans and to 10% in the case of construction loans. Even though default maintained an ascending trend in 2010, it did so at more moderate rates than in the previous year and, in particular, in the case of the banks, the rate remained stable during the year.

The reasons for the strong rise in past-due loans of the sofoles and sofomes has to do, as it has been documented in previous editions of *Mexico Real Estate Outlook* (see the January 2010 number), in part with its own business model[2] and in part with the slackening that was registered in recent years regarding their practices for granting loans (see chart 1. The future of the sofoles)

Graph 22
Past-due construction loan portfolio %

Sofoles/Sofomes — Banking — Total — Infonavit
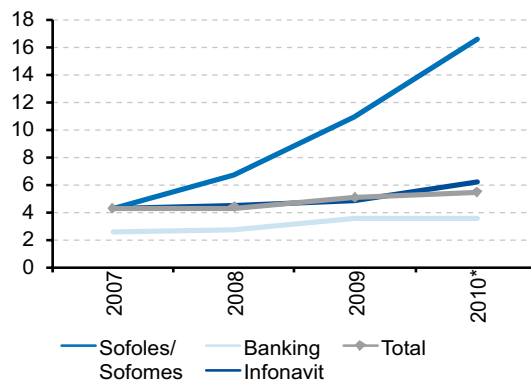
Source: BBVA Research with AHM data

Graph 23
Past-due construction loan portfolio %

Sofoles/Sofomes — Banking
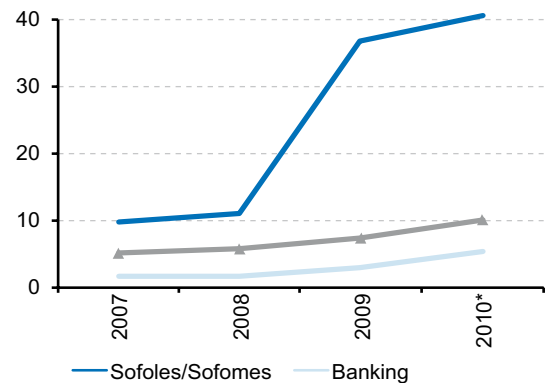
Source: BBVA Research with AHM data

The issue market has lost operability

As regards debt issues and portfolio placements, which through the third quarter of 2010 were registering a balance of $159 billion pesos, the growing importance that these instruments have acquired as a source of financing should be highlighted. As a share of the corporate debt market, issues of mortgage-backed securities have grown from 4% at the end of 2005 to close to 15% in 2010. The breakdown of the market has been changing significantly in recent years: in 2007 private placements came to represent 75% of the total issued, although this share was reduced to close to 10% in 2009 and in 2010 there were no debt issues by private intermediaries. The dynamism of this market was due to the public institutions, of note Fovissste, which in 2009 made inroads in these types of instruments, and, in this period, the amount in circulation of the securities placed rose to close to $40 billion pesos or one fourth of the total outstanding.

The issue market has remained practically inactive for private intermediaries after the global financial crisis. This is due, in part, to a more conservative position by investors, who acquired these securities; nevertheless, it also has to do with the relatively small universe of investors who acquire these instruments (50% of the amount in circulation is found in possession of fund administrators for retirement or Afores) and the provisions that the regulations mark as to the composition of their portfolios (Infonavit, 2010). It will be important to re-establish

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[2] The amortizations of the loans grant them liquidity to finance construction loans in partial payments. When liquidity is gone, there are no resources for construction loans and, therefore, the projects remain unfinished, homes are not individualized and the loans are not liquidated.

the mechanisms to reactivate the issue of mortgage-backed securities promoted by private intermediaries. Among other things, this requires the design of new instruments, with less risk and greater attraction in terms of yield, like covered bonds (as they are known In English) or mortgage bonds, issued, which, as opposed to traditional securitizations, remain in the balance of the issuer. In previous editions of *Mexico Real Estate Outlook* (see the October 2009 edition), we have analyzed the characteristics of these and other similar instruments.)

Conclusions: in 2011 the re-establishment of financing to the housing industry will continue

In terms of financing to the housing industry, the main adjustment has appeared from the sofoles and sofomes, since for the banks and the housing public institutions; the financing cycle has not stopped. and this trend will be maintained in 2011. Going forward, however, the industry faces two important challenges: on the one hand, to define the role and the instruments that the development banks will have to attend the sector (which in the short term will imply definitions regarding the nature and the amount of support to the sofoles and sofomes); on the other, to progress in the development of financial instruments that will allow expanding the possibilities available to the participants of the industry in order to obtain long-term financing.

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www.ahm.org.mx

www.shf.gob.mx

Inset 1: The future of the mortgage sofoles

Among the institutions of the financial sector, the mortgage sofoles (limited-purpose finance companies) and sofomes (multi-purpose finance companies) have been the most affected during the adjustment process in the housing industry. The problems of solvency due to the growing levels of their non-performing loan portfolios, in particular those corresponding to construction loans and the difficulties in obtaining funding through debt issues or portfolio placements, also known as securitizations, led to a significant reduction in these intermediaries' financing sources1. In this article some of the characteristics of their current situation will be described and some scenarios on their future evolution will be offered.

A look at the situation of the sofoles

At the end of 2008 the mortgage sofoles and sofomes' loan portfolios represented half of that of the commercial banks (146 billion vs. 296 billion pesos). However, at the end of 2010 (October), the corresponding figure was only 24% (88 billion vs. 369 billion pesos). Furthermore, of the total net portfolio (current plus non-performing loans), 44% (38 billion pesos) corresponds to two financial institutions2 that are facing bankruptcy proceedings and their future operation is not fully guaranteed. In addition, 12 of the 15 financial institutions that report their results to the Mexican Association of Specialized Financial Entities (AMFE for Asociación Mexicana de Entidades Financieras Especializadas) posted negative net results in their operations during 2010.

To a large extent, the rapid weakening of the sofoles and sofomes' financial situation has to do with the relaxation in their practices of granting credits and valuating risk, and this, in turn, is explained by the lack of an adequate regulation for these institutions. The evolution of their past-due loan portfolios clearly reflects this situation. In focusing on low-income segments of the population, their defaulting levels were traditionally higher than those of the commercial banking system. However, even within the commercial banking sector, the number of relatively new loans grew, which in the final analysis reflects a relaxation in the standards for authorizing loans (Banxico, 2010).

Regulatory proposals from the CNBV

It corresponds to the Finance Ministry, through the National Banking and Securities Commission (CNBV for Comisión Nacional Bancaria y de Valores) to establish the applicable regulations governing the financial institutions. In the diagnosis that the CNBV has made concerning loan-granting practices, it identifies some key elements key that can delineate important differences in the performance of the loan portfolios. For example, that the non-performing loan portfolio tends to be smaller if the credit collateral security margins or the loan to value ratio are lower. The procedures established for portfolio recovery and the quality of the appraisals also have a positive effect (CNBV, 2010). In general, it can be concluded that conservative credit policies, with supervisory mechanisms in all the processes, are the best formula, not only to reduce risks, but also to guarantee the viability of the financial institutions.

Thus, the CNBV plans to incorporate the sofoles and sofomes in the general regulations governing financial institutions, and to include within these rules some provisions that have been adopted on a consensus basis on an international level, in the framework of Basel III, which could gradually be included in the corresponding Mexican legislation. Among the most important are:

First, ensuring better capitalized institutions with lower leverage levels. Strengthening the capital base, from the current 2% level to 4.5%, plus headroom equivalent to an additional 2.5%, with which the real capitalization level could reach 7%. At the same time the provisions would seek to establish a limit to the institutions' leverage levels, so that the capital adequacy ratio does not exceed 2.5%.

Second, having a stricter supervision in terms of risk valuation, as well as for securitizations, through stricter scenarios in the definition of market risks, and clearly establishing clauses in the portfolio placement contracts that incorporate the counterpart risk, or the possibility that the issuing institution will not be able to fulfill its obligations.
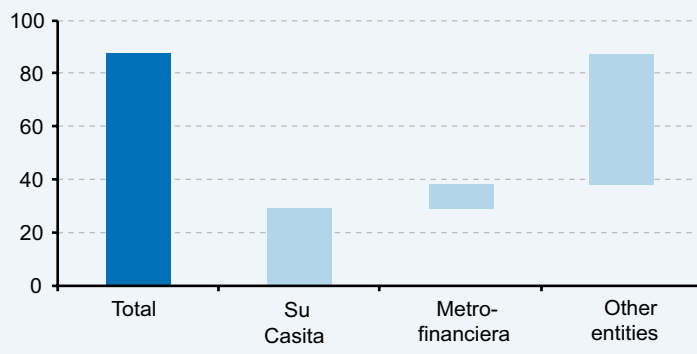
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1 Since 2009 the sofoles and sofomes have not made portfolio placements. At the same time, as opposed to the banking system, the sofoles and sofomes are not authorized to receive resources through deposits.
2 Su Casita and Metrofinanciera.

Finally, the regulations would seek to guarantee stability in the institutions' funding sources by requiring that the ratio between the available and required amount of stable funding be higher than 100%. That is, with this requirement the possibility of financing long-term loans with short-term resources would be eliminated. This could be particularly important for the sofoles and sofomes, given that since 2009 they have had difficulties in entering the debt market and the financing that they have received has been through the support provided by the Federal Mortgage Association (Sociedad Hipotecaria Federal (SHF) to refinance short-term debt, guaranteeing 65% of the value of their securities. In fact, the Financial Stability Board (FSB), an international panel of experts created following the global financial crisis to generate consensus and issue recommendations in terms of financial supervision and regulation, concluded that Mexico should create mechanisms to reduce the sofoles' dependence on SHF financing.

the mid 1990s and during most of past decade. However, the financial crisis also exposed some of their limitations, and their future will depend on their capacity to adapt to the changes that they will face both from regulations as well as the market itself. For now, it is clear that they should strengthen their capital base and undergo strict supervision. Thus, among the most viable alternatives that are envisioned for the sofoles and sofomes are, on the one hand, to merge with other financial groups; and on the other, to merge with each other in order to form niche banks, which would enable them to raise their capitalization levels and generate synergies. These alternatives are also included among the FSB recommendations that suggest the consolidation or change in the business model. What is certain is that they will continue operating in some form, since they have generated experience in attending to a market niche with very specific characteristics.

Graph 24
Mortgage Sofoles: total 2010 loan portfolio *
(billions of pesos)

* Figures through October.
Source: BBVA Research with AMFE data

Graph 25
Mortgage Sofoles/sofomes: 2010 operating results *
(Millions of pesos)

* Through October.
Source: BBVA Research with AMFE data

In synthesis, the CNBV's considerations point, on the one hand, toward a uniform regulation for the financial institutions that grant credit, and on the other, to strengthening supervision and regulation activities. Although specific dates for incorporating these regulations have not been announced, it can be assumed that their adoption could be gradual.

Conclusions: Where are the sofoles and sofomes headed?

The sofoles and sofomes have played an important role in financing the housing industry, since their emergence in

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3a. The impact of subsidies on the housing market

Introduction

The federal government has various support programs for housing, some of which specifically operate by granting subsidies. These programs affect the housing market in a significant manner, as reflected both in the attributes of housing as well as in its prices. In this article of **Mexico Real Estate Outlook**, we analyze some of the distortions in the markets caused by subsidy programs and suggest some programs that could make them more efficient. The article contains three sections: the first presents a review of the different housing subsidy programs from the federal government in Mexico; the second focuses specifically on subsidies for the acquisition of housing; and the third proposes a change in the implementation of the subsidy program for the acquisition of housing, currently of a fixed amount, toward one based on points with regard to housing attributes.

Federal housing subsidy programs

The federal government currently has four housing subsidy programs that operate through the Department of Social Development (Sedesol for Secretaría de Desarrollo Social) and the National Housing Commission (Conavi for Comisión Nacional de VIvienda). Sedesol is responsible for three of these: the Program for the Development of Priority Zones (PDZP for Programa para el Desarrollo de Zonas Prioritarias), the Your Home Program (Programa Tu Casa) and the Rural Housing Program (Programa Vivienda Rural). The last two are applied through a trust called Fondo de Habitaciones Populares (Fonhapo). In turn, CONAVI manages the program "Esta es tu casa" (This is your Home).

In general terms, the three programs operated by Sedesol are aimed at the non-wage-earning population which is not subject to a mortgage loan, which for the most part includes the informal economy, although not exclusively. The PDZP operates in 125 municipalities or towns of marginalized or poverty conditions, as well as of a predominantly indigenous population. The Tu Casa and Vivienda Rural programs are designed for the population with a family income of up to four minimum wages, in marginalized zones and rural communities (up to five thousand inhabitants). In turn, the "Esta es Tu Casa" progam is designed for the population in the urban community, working in or outside the formal sector, with income of up to five minimum wages and that have financing from some financial or housing institution.

Collectively, in 2009 the four progams managed resources for a total of 11.5 billion pesos, which is equivalent to 7.6% of the financing through Infonavit and Fovissste (151 billion pesos), and 16.4% of that granted by private intermediaries, banks and sofoles and sofomes (70 billion pesos) in the same period.

Although, in principle, each program is designed to attend to differentiated needs and different population targets, in some cases these present common characteristics: for example, the three Sedesol programs are aimed at marginalized and high poverty zones, consider actions of improvement to housing, and in addition, the process and management of the resources is done through the town governments or municipalities.

In the case of the PDZP, in addition to improvements, there are supports available for service infrastructure, while in the programs managed by Fonhapo, self-construction is supported, as well as the acquisition of complete housing. There is also a certain flexibility in the manner in which the resources are processed. For example, in the Tu Casa and Vivienda Rural programs, the beneficiary must have prior savings, although this can be substituted with

work (that is, the beneficiary may contribute with labor); also, a contribution is required from the municipal government, which could be in kind, through land reserves. Also, depending on the level of social development1 of the community, although not housing, the participation of the federation in the total amount of the subsidy (which must be provided in an equal amount by the state or the municipality) could be increased, from 45% to 90%.

There are sharp differences in the scope of the programs: while the PDZP seeks the greatest coverage, with nearly 600,000 subsidies granted in 2009, the Tu Casa and Vivienda Rural programs distribute jointly less than 200,000 subsidies. However, in all the cases, the solutions provided are marginal, since the amounts fluctuate between $6,000 and $15,000 pesos. In the case of the "Ésta es tu casa" (This is Your Home) program, the number of subsidies is lower, around 150,000, with average amounts on the order of $30,000 pesos. Overall, the number of subsidies granted in 2009 through the four programs were 900,000, with an average amount of $11,800 pesos each.

To conduct a detailed analysis of the impact that each of these programs have had in improving the housing conditions for the low-income population (as well as of the population that inhabits rural, indigenous and highly marginalized communities) is not necessarily the purpose of this study, although at a given time we must objectively reflect on its effectiveness, very little can be done on an individual level with the subsidy amounts that are currently granted. However, undoubtedly, and very positive, is the broad level of coverage of these programs: if there is the capacity to reach 800,000 families each year, it could be that, with well-defined objectives and sufficient resources, believably a policy could be implemented directed toward significantly reducing, over a decade, the housing lag that exists in the country. Various estimates indicate that this lag is between 9 and 10 million homes, of which almost 7 million require remodeling and expansion of housing2, the greater part of which are located in communities with fewer than 15 thousand inhabitants, precisely where the Sedesol programs are aimed.

Chart 4
Federal government housing subsidy programs

Institution	Program	Target population	Types of subsidy
Sedesol	Programa de desarrollo de Zonas Prioritarias (PDZP (Priority Zones Development Program)	125 municipalities of high marginalization; indigeneous municipalities	Services infrastructure
Sedesol*	Tu casa	Households with income of up to 3 MWT** (3 times the minimum wage) Marginalized municipalities, risk zones, rural zones	Acquisition Improvements Expansion
Sedesol*	Rural Housing (Vivienda Rural)	Inhabitants in highly marginalized municipalities or towns	Construction Improvements Expansion
Conavi	Ésta es tu casa (This is Your Home)	Households with income of up to 5 MWT** (5 times the minimum wage) With capacity to obtain a mortgage loan Formal and informal sector	Acquisition of housing (new or used) or lot with services Improvements Self-construction

* Through the Fideicomiso Fondo Nacional de Habitaciones Populares (National Popular Housing Fund Trust)
**MWT: Times the minimum wage. 1 SM (minimum wage) is equivalent to a monthly income of approximately $1,540 pesos.
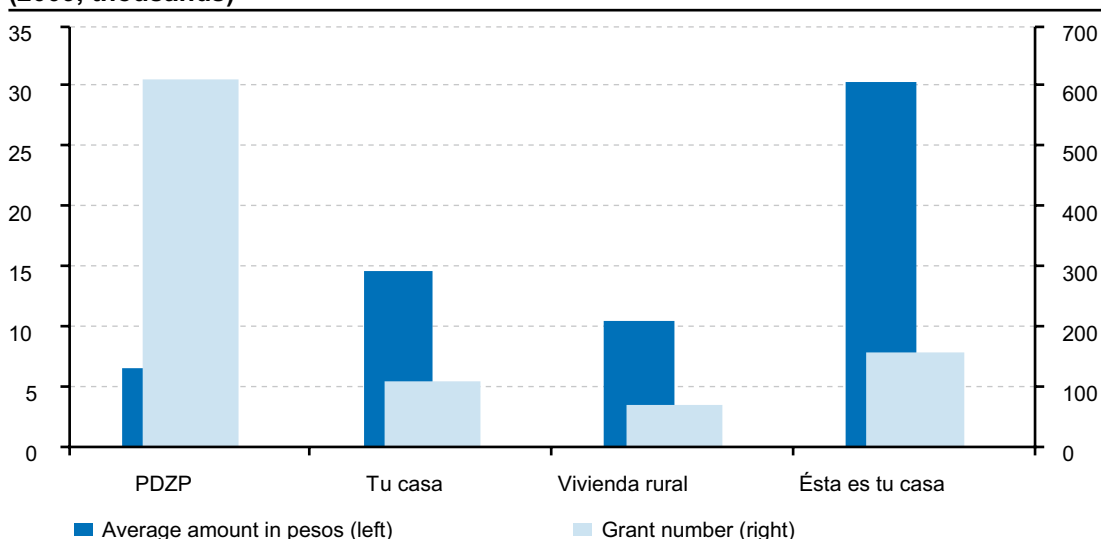Source: BBVA Resarch with Sedesol and Conavi data

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1 According to criteria established by the Coneval for Comisión Nacional de Evaluación (National Evaluation Commission)
2 In the July 2010 edition of Mexico Real Estate Outlook (Situación Inmobiliaria México), there is an article on an analysis and quanti-fication of the housing lag.

Graph 26
**Total subsidies and average amount
(2009, thousands)**

■ Average amount in pesos (left)   ■ Grant number (right)

Source: BBVA Research with Sedesol and Conavi data

Subsidies for new housing ("Ésta es tu casa" (This is Your Home) program)

The Conavi program "*Ésta es tu casa*", has had a strong impact on the housing market among the low-income population, since it is linked with the financing programs that exist in the public housing institutions (Infonavit and Fovissste), support bodies (the SHF for Sociedad Hipotecaria Federal) or Federal Mortgage Association, and private intermediaries (banks and sofoles and sofomes).

For the acquisition of new housing, the operating rules of the program establish a subsidy of a fixed amount, which is complented with financing provided by a financial or housing institution, and a proportion of individual savings (the balance in the housing sub-account for affiliates in the Infonavit or the Fovissste). The maximum amount of the subsidy requires that the value of the housing be up to 128 times the minimum wage (MWT) in the Federal District, currently equivalent to 224,000 pesos. Lower subsidy levels can be granted as the price of the housing surpasses this level, up to a maximum of 158 MWT (times the minimum wage), or 276,000 pesos.

The program has an important weight in the national housing market: considering only Infonavit, the share of housing units of up to 128 times the minimum wage (MWT) represent 13% of total loans placed, and when those corresponding to 158 times the minimum wage (MWT), the proportion reaches almost 20% of the 128 MWT in the total. It should be mentioned that, of the total housing units placed by the Infonavit, approximately 50% are within the range of prices that could receive subsidies and although evidently not all of them do it, this is indicative of the potential effect that the program has on the housing market.

Since the program was initiated at the beginning of 2007, the operating rules have had some modifications, some of an operational nature[3] and others to guarantee a certain level of refurbishing of the housing units, especially in terms of environmental sustainability. In

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[3] Apparently there were some original provisions that, although well-intentioned and directed,did not materialize and were therefore eliminated; for example, the requirement that the participating states should have legislation that allowed for the securitization of the loans, and in addition, registration in the modernization program of the Public Registry of Property and the Housing Building Code which was adopted, maintained until 2008, but eliminated in the 2009 modifications.

particular, as of September 2008, it is a requirement that all housing units include a basic package of "ecotechnias"[4] or ecological attributes, and in exchange for this, the value of the housing unit subject to subsidy was increased by 10 MWT (from the original 118 MWT up to the current 128 MWT).

The effect of this change in the rules (although it also influenced the market power of builders in this segment) contributed to the fact that housing prices subject to receive the maximum amount of the subsidy, denominated as "economic" suffered an increase in prices that surpassed the general trend in the market. This is confirmed by comparing the average price at which low-cost housing is sold, or that up to 128 times the minimum wage (MWT), with the SHF housing price index. In the latter, the (nominal) increase from the first quarter of 2008 to the second quarter of 2010 was on the order of 10%, while for the former it was 15%.

In turn, it should be mentioned that the behavior of credit holders is not very different among those who receive a subsidy and those that do not. Infonavit figures show that the past-due loan portfolio in the case of the former was 3.15% while for the latter, it was 3.30%. That is, the granting of the subsidy did not alter significantly the performance of those receiving loans, nor the risk of default.
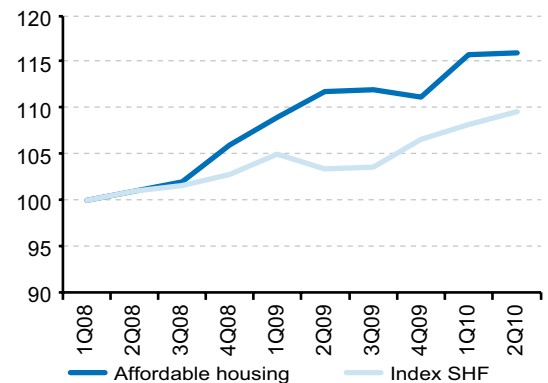
Graph 27
Share of housing subject to subsidies in Infonavit loans (%)
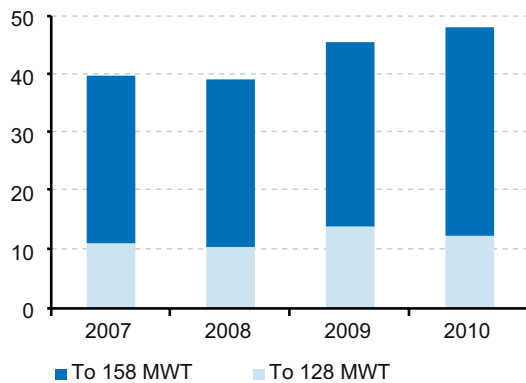
Note: the price levels consider the changes in the operating rules of the subsidy program as of 2008
Source: BBVA Research with INEGI and Conavi data

Graph 28
Housing prices: general vs. economic (Index 1Q08=100 nominal)

Source: BBVA Research wiht Infonavit, Conavi and SHF data

It is praiseworthy that housing policy incorporates elements of environmental protection in its programs, in this case, that of housing subsidies. However, it is equally important to take care that the housing units comply with quality standards in construction and finishings. The "Esta es tu Casa" (This is Your Home) program certifies that all housing units with a subsidy contain a package of "ecotecnias" or ecological benefits, but there is no similar criterion that applies to all housing.

Comparing the characteristics of housing in the different segments–-classified according to price[5]–- it can be seen that housing subject to subsidies (economy, up to 128 MWT, and low-income, up to 158 MWT) is the one that has lost the most attributes between 2007 and 2010; they have less space, a greater proportion is sold without a kitchen and the price per square meter has grown more than in the rest of the segments[6]. For housing that is not subject to subsidies, the attributes of the housing units have remained practically constant and in some cases a reduction in prices can be seen (medium and residential housing).

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[4] Consisting of solar heaters, water-saving faucets, low-water consumption toilets, among others.
[5] Based on the classification of housing segments determined by the SHF, Conavi, Infonavit, Fovissste and AHM in April 2010. In the low-cost housing segment, the higher limit is considered of up to 128 MWT (times the minimum wage) and not 118 MWT determined for the segment, with the aim of considering the changes in the operating rules for the Conavi subsidy program.
[6] Except in the case of higher value housing, which because it is traded in dollars, is affected by the depreciation of the peso.

It is true that a lower number of square meters does not mean lower quality[7], but when this is coupled with lower-quality finishings and higher prices, in a housing segment where the buyer does not have much capacity for choice, and where other criteria, such as location or urban development within the housing developments, have not been a priority issue, it can be assumed that the buyers in this segment face more unfavorable competition conditions than the rest of the market.

Chart 5
Housing characteristics according to segment 2010 vs. 2007

	Low-cost or economy		Low-income w/subsidy*		Low-income w/subsidy		Traditional		Medium		Residential		Residential Plus	
	2007	2010	2007	2010	2007	2010	2007	2010	2007	2010	2007	2010	2007	2010
Maximum value (thousands of pesos) **														
	209.5	223.7	262.7	276.1	355.0	349.5	621.3	611.7	1331.3	1310.8	2,662.6	2,621.6	>2,662.6	>2,621.6
Area characteristics (M2, square meters)														
	42.1	40.6	43.8	42.6	54.3	52.2	70.9	71.0	103.1	102.7	138.8	142.9	240.0	228.9
Price per M2 (square meter) (thousands of pesos) **														
	5.0	5.3	5.6	6.0	5.8	6.2	7.1	7.1	9.9	9.8	15.0	14.7	24.2	26.5
Real % change		7.5		6.6		6.4		0.3		-0.8		-2.3		9.4
Bathrooms	1.0	1.0	1.0	1.0	1.1	1.1	1.4	1.4	2.0	2.0	2.4	2.4	3.0	2.8
Bedrooms	1.5	1.5	1.5	1.5	2.0	2.0	2.3	2.3	2.6	2.6	2.6	2.6	2.8	2.7
Finishings*** (%):														
Concrete floors	66.1	66.7	51.5	62.9	26.9	30.3	11.1	10.7	4.0	3.0	2.6	2.3	11.1	8.6
Plaster on walls	53.2	52.6	53.2	39.7	34.8	30.3	25.4	25.7	18.8	20.3	18.3	18.5	22.4	22.9
Kitchen:sink	66.0	54.8	59.0	63.5	68.9	71.7	55.0	56.9	20.3	17.9	2.6	2.1	0.6	1.2
No kitchen	33.0	44.4	39.8	35.2	27.2	25.8	24.6	24.5	14.5	16.1	7.9	8.7	6.9	5.8

* Up to 148 MWT (times the minimum wage) in 2007 and 158 MWT in 2010
** Constant 2010 pesos
*** Considers the percentage of housing units with the specified attribute
Source: BBVA Research with Conavi data

Need of a change in the subsidy policy

In its current design, the "Ésta es tu casa" ("This is Your Home") program, faces restrictions to comply efficently with its goal of facilitating access to housing for the low-income population. It is known that housing built in recent years for this segment of the population lacks, in a great number of cases, adequate infrastructure and urban services, and because of its location, it is far from centers of production and commercial activity, representing high costs for its occupants. Also, this type of housing does not meet the goal of increasing families' assets because it offers housing that deteriorates rapidly and does not create added value or net worth.

The incentives are very low for housing builders to offer better housing in a market that is not selective and the policy of a fixed subsidy amount does not help. Without mechanisms to grade housing, but only to identify the beneficiary, the type of housing that is offered is irrelevant (as long as it has "ecotecnias" or ecological benefits). In turn, the buyers and society end up paying a social and economic cost. The results obtained up to now with the subsidy programs indicate that these should not be in terms of the individual but according to housing type, and should center on the attributes and services that are offered, through a points scheme or of compliance levels with certain standards.

Undoubtedly, the initial task is precisely to define those standards and the manner in which they should be applied to housing. Up to now, the efforts that have been made in order to gather, in a standardized and consistent manner, indicators relative to housing quality and its services, have been scarce and inarticulate. Fortunately, this could begin to change soon, based on two elements: the Sole Registry for Housing (RUV for Registro Unico de Vivienda) which requires that all builders interested in selling housing through Infonavit, Fovissste

[7] In fact, there are those that argue that limiting downward the number of square meters constructed could be a mistake, since the important issue is to meet the needs of housing occupants.

and SHF loans, register the characteristics of the project (materials, finishings, etc.) and the services offered (location of the housing development, public services, roadways, streets, etc.); establishing the RUV registry was the first step; systematizing its information to create indicator parameters will be the next step.

In the second place, something that is more novel, are the indicators that the Infonavit has developed to evaluate the quality of housing and the quality of life it offers its occupants, through the Qualitative of Housing and its Environment Survey (Encuesta Cualitativa de la Vivienda y su Entorno (ECUVE) and the Quality of Life Linked to Housing Index (Índice de Calidad de Vida Vinculado a la Vivienda (ICVV). The first of these is based on indicators already created that measure the quality of housing, but above all the urban environment where it is located; that is, it measures the physical characteristics, such as materials, finishings and surface area, but also aspects such as location, the urban environment, municipal management and even elements of energy efficiency. As regards the ICVV, its use will allow matching housing characteristics with the profile of its occupants, and based on this, evaluating if this contributes to improving their quality of life over time (see article 3b, "The Implicartions for the housing industry of the Infonavit 2011-2015 Financial Plan).

Equally relevant, with regard to these indicators, is that they reflect a greater coordination among the public agencies responsible for housing policy and support. The ECUVE is the result of a joint effort between the SHF, Conavi and Infonavit to have better tools to evaluate the housing support programs.

Conclusions: Toward the need to formulate new programs in the application of housing subsidies

The federal government operates various housing subsidy programs, although some with similar characteristics in operation and target population. They are substantial in number and coverage, although their effectiveness should be measured in terms of the objective to reduce the housing lag among the low-income population. The lag has been reduced in terms of new housing needs, but has increased in terms of remodeling and expansion of housing, which is the aim of these subsidies. Under this criterion, the result of these programs has had only modest success, to say the least.

As particularly regards subsidies for the acquisition of housing, through the "Esta es tu casa" program, these have had an important impact on the housing market. In the first place, prices grow in accordance with the operating rules of the program, and do so at a higher rate than the rest of the market. Secondly, that characteristics of the housing units subject to subsidy, in general present greater deterioration in their attributes when compared over time with other segments. Third, under the current scheme, based on subsidies of a fixed amount and independently of housing attributes (beyond that of complying with having a basic package of "*ecotecnias*" or ecological benefits) in a market conditioned by supply, there are few incentives to improve the characteristics of housing in this segment.

The segmentation of housing based on prices, as adopted by the main public and private agents, requires updating at least with the same frequency as the operating rules for the subsidy "Esta es tu casa" program, since these set the minimum price for "economy class" housing; currently, the amount set for this type of housing is of 118 MWT (times the minimum wage), when it should be 128 MWT.

Finally, the next adoption of new indicators on the physical characteristics of housing units and their environment, will be a very positive element, fundamental to achieving greater effectiveness in the housing support programs by contributing to the development of solutions and raising the quality of life and increasing family assets.

References

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www.sedesol.gob.mx
www.infonavit.org.mx

3b. The implications for the housing industry from the Infonavit Financial Plan 2011-2015

In the 2011-2015 Infonavit Financial Plan, as is usual, a diagnosis is made of the housing market and sets forth the guidelines that should regulate policies in the coming years. Even though this is a process that is carried out continuously (the financial plans are published annually), the depth and detail with which the topics are analyzed on this occasion, as well as the diagnosis, mark an important difference regarding the previous editions of this document.

In this section of **Mexico Real Estate Outlook**, three aspects are analyzed which, due to their significance will have important implications for the housing industry in the short and medium term. First, there is the updating in the estimates of housing needs, current and future, and the recognition of the urgency of having adequate financing products to attend to it. Second, the financial projections of the Infonavit, which show that, in the absence of new loan products, the Infonavit income will grow at significantly higher rates than its expenses, by which the capitalization could reach levels of up to 24% in less than a decade. Finally, the diagnosis regarding housing quality and the level of satisfaction of its occupants, due to which the need is implied of having better instruments to improve construction standards and to guarantee that the home not only meets its primary dwelling function but also that it contributes to the quality of life and the net worth of the borrowers.

I. Estimates for housing needs change

In the quantification of housing needs, Infonavit divides them between current and future. The former include lags in housing and the population that aspires to be home owners. In the housing lag, the methodology for the estimate was modified, by which it (only among those affiliated to the Institute) went from 2.5 million to 1.4 million[1].

Chart 6
Current housing needs:
Infonavit estimate (Mills. of homes)

	Infonavit Affiliates	National	Affiliates/ Nal (%)
2009			
Total lag	2.5	9.7	25.7
Basic	2.0	3.4	59.0
Expanded	0.4	6.3	7.5
2010			
Total	3.2	13.8	23.2
Total lag	1.4	8.6	16.3
Basic	0.7	3.8	18.4
Expanded	0.7	4.8	14.6
Aspiration of ownership	1.9	5.2	36.5

Source: BBVA Research with Infonavit data

Chart 7
Housing needs
(Millions of loans

	Total	Worthy of consideration	Flows 2010-2050
Total	**55.**	49.7	**1.2**
Infonavit	15.9	10.3	0.3
Current	3.2	1.2	0.0
Future	12.7	9.1	0.2
Rest	39.9	39.4	1.0
Current	10.6	10.1	0.2
Future	29.3	29.3	0.7

Source: BBVA Research with Infonavit data.

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[1] The housing lag includes those homes that, due to their materials, condition as a result of use, livable service or space, do not meet the basic needs of their occupants. To measure this, indicators are used, such as overcrowding (defined as a ratio of occupants to dormitories), age of home, quality of the materials, physical characteristics and services. The criteria that the Infonavit used in some of the cases are too lax (in overcrowding, they consider four occupants per dormitory, when the international recommendation is two). Others require updating (such as durability of materials), and still some others are not considered (characteristics of the home and services).

However, when the aspiration component is added (for which the all rightful Infonavit affiliate population is considered that pay rent for the home they live in)[2], the total current needs among Infonavit affiliates comes to 3.2 million homes, while, at a national level, it is estimated at 13.9 million.

In the Financial Plan of 2010-2014, the aspiration component had not been included, only the lag which had been quantified at 9.8 million homes (at a national level). Thus, the changes in the estimates imply significant differences in the quantification of needs and in the manner of attending them. Although in the aggregate, the figures do not change significantly, the adjustment in the methodology and definitions could imply differences in the programs, given that the lag has the implicit need to finance remodeling and expansion, while the ownership aspiration above all increases total home financing.

As to future needs, the Infonavit considers both the formation of homes, such as housing for secondary use (that is, the one that is acquired for temporary use, for rent, and even the uninhabited home); both could imply around 12.7 million financings among its affiliates for the 2010-2050 period and 32.3 million at a national level.

It is stressed in the document that close to 20% of the rightful Infonavit affiliate population with housing needs currently has an Infonavit loan. This means that the home that he or she acquired has stopped responding to his needs, or is presenting a high level of deterioration and/or he has not occupied it. This last seems to be the situation in a high number of the cases according to the Infonavit; up to 26% of financed housing with loans during the 2006-2009 period is found uninhabited and practically half of it presents conditions of deterioration. A survey applied to Infonavit affiliates who have not occupied their home (a total of 188 surveys at a national level) is showing that in most of the cases (90% of the responses) this is due to problems of location, materials and services.

The current model is insufficient

The Infonavit estimates that, with the available financing products, it is only able to attend 37% of the current needs (1.2 million of 3.2 million); excluding those possible affiliates who perceive less than three minimum wages (SM for its Spanish initials), who live in localities of fewer than 15,000 inhabitants, who are older than 44, and temporary[3] workers. It is estimated that the demand that can be attended could be covered in five years, at a rate of 240,000 loans per year. As to future needs, it is estimated that they will require financing on the order of 310,000 per year. When totaled, they show an annual demand of 550,000 loans through 2015 and 310,000 as of 2016.

The total demand for housing financing, both from workers affiliated in the Infonavit and from non-affiliated workers, the proportion that is not possible to attend already discounted, is around 1.2 million per year between 2010 and 2050. Thus, between current and future needs, it is estimated that in the whole projection horizon (2011-2050), the total demand for housing loans at a national level could be close to 56 million of which 28.5% (15.9 million) would correspond to those affiliated to the Infonavit, which would be equivalent to an annual demand for 390,000 loans.

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[2] Even with the survey of Income-Household Expenses, the proportion of the population that rents the homes they live in can be obtained, the way that the estimate was done for the affiliated workers to Infonavit is not specified. On the other hand, the assumption that all the people who rent aspire to be owners of their homes could be questionable; it implies that the population in general compares the rent payment to an inefficient use of resources, when in reality it is simply the payment of a service.

[3] The assumptions under which these exclusions are made could be somewhat restrictive, or in any case one would have to see the justification to assume that the inhabitants of the communities of up to 15,000 inhabitants are not able to acquire a loan, and that those older than 45 are not interested in acquiring a house.

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II. The Infonavit will have surpluses in the medium term

Based on the projections, the Infonavit estimates that the annual financing flow will reach its maximum in 2015, with somewhere between 555,000 and 590,000 loans; as of that date, the flow will be reduced to 310,000 per year. In its interior, 60% will be destined to the population with income below 4 minimum wages, 20% for segments between 4 and 11 minimum wages, and the remaining 15% will be for the population of more than 11 minimum wages.

Given that the loan amortizations and that the fees of workers not subject to loans will maintain their trend, the lower need for financing in an environment of economic and financial stability means growth in income over that of expenses. The projections of the Infonavit indicate that, between 2011 and 2020, the former will do it at a 9.2% rate, while the latter will do it at a 7.7% rate.

Implicit in this scenario is the decrease in the needs for external financing sources (Cedevis) that would reach their maximum level in 2016 and, as of then, would be eliminated.

Within this context, the Infonavit finances will be strengthening throughout the coming years. Its cash surpluses could come close to $250 billion pesos in 2020[4]. Also, it is considering granting a positive yield to the housing sub-account that could even reach a real 3%[5]. With this, the capitalization level of the Institute would double in less than a decade (net worth to total assets ratio): from an expected 11.3% for 2011, to 22.3% in 2020.

## III. New indicators to measure the social impact linked to housing

The third novel element that is included in the Infonavit 2011-2015 Financing Plan has to do with the effort that is being made by the federal government and the public housing institutes to have the tools that would allow better measurement of the effects associated with the acquisition of housing in terms of the quality of life and individuals' net worth, based on the aspects that range from the quality of the construction materials to what is related to the urban environment and housing added value in particular, three new references are described: the Qualitative Evaluation of Housing and its Environment (ECUVE), the Quality of Life Linked to Housing Index (ICVV), as well as the Net Worth Value Index (IVP). Due to the importance that

Graph 29
Infonavit: financing goals 2011-2020 (thousands of annual loans)

— Amount of resources (right)**
Number of credits (left)*
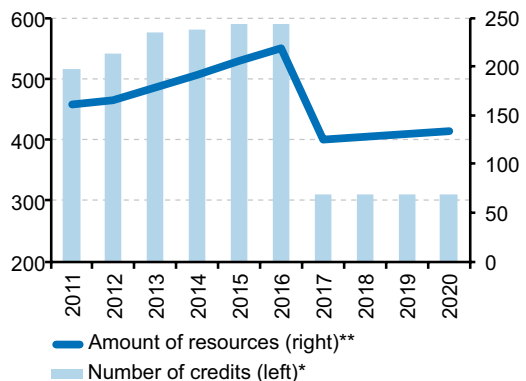
* Potential goal subject to issue of Cedevis.
** Includes contributions from private intermediaries
Source: BBVA Research with Infonavit data.

Graph 30
IInfonavit: capitalization index 2011-2020 (%)
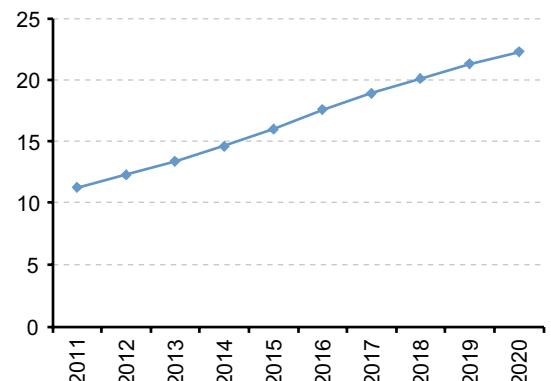
Source: BBVA Research with Infonavit data.

[4] Which represent around four years of financing at the rates registered in 2009 and 2010 of $110 billion pesos.
[5] The projections consider a yield of 3% above the minimum wage, for which, in turn, an increase is assumed similar to that of inflation, also of 3%. It is probable that at least in the first years of the projection, inflation will be higher than what was estimated.

they acquire, it is advisable to analyze in detail the characteristics of eachone, the value-added they offer, as well as a quality valuation and recommendations to make possible its use and convert them into references for the industry.

Housing policy requires better instruments

There is no doubt as to the support that the government has given to the housing programs in the last decade. Between 2001 and 2010, the public institutions and the private intermediaries (banks and sofoles) have granted more than 4.5 million mortgage loans[6], which undoubtedly represent a great achievement of housing policy. However, some gaps have also been opened. The housing units do not always respond to the needs of those who live in them, or their occupation can bring diverse costs with it: housing developments far from the urban areas and work centers, with no services or adequate infrastructure (trash collection, public security, green areas, commercial area, schools, hospitals, etc.), which ends up generating an important social cost.

When housing ends up being abandoned due to problems of location, quality of materials, urban space or environment[7], the result is deterioration in the price of the home, loss of market attractiveness which reduces the possibilities of being resold and can also in some cases become part of the past-due loan portfolio, and in long processes of real-estate adjudication, which ends up affecting the finances of the loan holders and of the institutions that granted the loan. The potential deterioration of the portfolio implies requirements of capital provisions for the financial institutions and generates a spread or premium which prevents additional reductions in mortgage interest rates. There is also the loss in productivity due to the travel time, in addition to other non-economic costs, like family disintegration derived from the lack of time for being with the family, etc. It is clear then that the cost of having bad quality in the homes is not only for the families who inhabit them but for society as a whole.

In the government, the housing public institutions and other actors in the industry, there is a clear awareness of this situation, and different efforts have been made to achieve the indicators that help to measure the impact of the acquisition of a home (financed through these entities) in the persons and that have to do with attributes, added value and the type of needs that it manages to meet. The most recent is the construction of two new indicators to measure the quality of a home, the ECUVE and the ICVV, as well as to measure the change in the net worth value that they generate through the IVP. In part, these indicators are the result of coordinated efforts among Infonavit, Sedesol and Conavi, seeking that housing placed under the protection of their programs be aligned with the most demanding regulatory provisions that have been set for urban development and building standards, as for example, the Building Code, the Housing Law (in particular Article 73), as well as the Densification Guide, the latter from Conavi.

1) Qualitative Evaluation of Housing and its Environment (ECUVE)

The ECUVE qualifies homes based on the evaluation that, according to surveys applied at a national level8, the occupants make with respect to their attributes considered in a broad sense. in said evaluation, thirteen concepts are incorporated such as location, inhabitable surface, design and housing materials, and even municipal management. It should be mentioned that the location, in its different ways for measuring it, has a weight of more than 50% in the

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[6] To obtain a dimension of its importance, it is enough to mention that according to the population census of 2000 and 2010, the entirety of (occupied) housing in the country increased by close to 6.5 million in the decade, from 22 to 28.6 million, that is considering that something between 15% and 20% of the loans granted were for used homes and other destinations, it turns out that around 50% of the homes that were incorporated in total housing in the country during this period was financed by Infonavit.
[7] In the coming months, the Population and Housing Census published by the INEGI, will make known the number of unoccupied homes and their location; in 2005, this number represented 14% of total housing.
[8] The survey was applied not only among the users of housing (rightful claimants and accredited) but also among the experts and officials in charge of housing policy. This last turns out to be important in explaining the composition of the indicator and the relative weight of each component.

evaluation scale of those surveyed. Comparatively, housing quality, in terms of materials and finishings, has a relatively low weight of barely 4%[9].

Other also important aspects are, on the one hand, that the weighting of each element of the ECUVE has regional differences; also that the indicators that comprise it are obtained from available sources, which does not imply new changes but the inclusion of information of appraisals and of other indicators[10]. With the progress that there is up to now, it is possible to already evaluate automatically all housing subject to be financed or to be subsidized. Nevertheless, given that the indicator is found in its initial phase, it is still subject to adjustments as to categories and weighting, also currently there is standardized information to measure
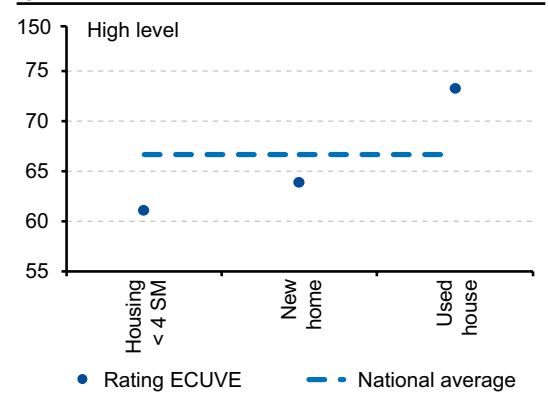
Graph 31
ECUVE Components, part %
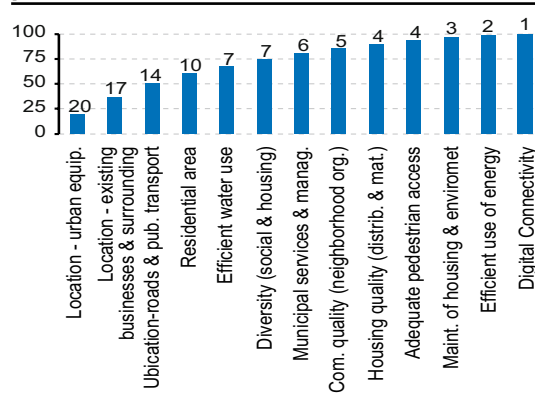
Source: BBVA Research with Infonavit data

Graph 32
Housing qualification according to ECUVE, % compared to the maximum qualification

The figures of the graph are referred as a proportion of the maximum level.
Source: BBVA Research with Infonavit data.

75% of the information that it contains, and throughout 2011 it is expected to have parameters for measurement at 100%%[11].

The preliminary results that the ECUVE shows are very interesting. Based on the evaluation made during 2010, the average rating at a national level (for homes that are marketed through Infonavit loans) was 66 points: houses for workers with up to four minimum wages obtain an average rating of 61 points, new homes 64 points and used homes 73 points. It should be mentioned that the rating can change, depending on the weighting that is assigned to the different components in each region, although it is very interesting that the better rating grade corresponds to used homes; the explanation, very simple, is that the latter has better attributes compared to new housing in aspects that have a relatively high weight in the survey (location, dimensions, etc.).

This indicator *per se* represents important progress for the industry. It is an ambitious and coordinated effort among public entities to provide better information on housing elements and their environment which have the most bearing with regard to the satisfaction or quality of life of those who occupy housing units. This information should better influence the decisions of

[9] Here, it should be mentioned that some elements were discounted that can be considered as elementary in housing and without which they would not even enter in the universe that the ECUVE qualifies, such as for example being located in areas free of risk and with availability of basic services (water, drainage, electricity).
[10] Among others included are: the Satisfaction Index of those Accredited (ISA), the Index of Housing Quality (ICAVI), as well as the Basic Degree of Sustainability (GBS) of the Program of Municipal Competitiveness as to Housing.
[11] There is still not sufficient information for measuring and analyzing in their totality the components of diversity, pedestrian accessibility and maintenance.

the participants of the sector, not only of those accredited, but of the authorities and housing financial backers.

Moreover, the indicator could achieve a significant impact on housing construction standards, to the extent that there are appropriate mechanisms to associate housing with the support programs for the sector, as well as the subsidies that the federal government grants for the acquisition of homes in the "Esta es Tu Casa" ("This is Your Home") program and the financing conditions that the public housing institutions offer. The implementation could be relatively easy and without the need for modifications of a legal order, especially in the case of the Infonavit which applies differentiated interest rates on its loans, where the criterion, currently, is only the worker's income (crossed subsidies), but it is possible to modify it to reflect in greater or lesser degree the loan risk of the homes with certain attributes (or ECUVE rating)[13]. In fact, in 2011, the Conavi will use a similar strategy, since it has announced that in its subsidy program, "it will give priority" to the payment of vertical housing[14].

2) The Quality of Life Linked to Housing Index (ICVV)

The ICVV seeks to establish the degree of compatibility of housing with its occupants to provide follow-up in order to know how owners' quality of life evolves in terms of the purchase, not only in terms of housing housing but also of the environment and the community. This indicator is consistent with the ECUVE, although its characteristic is that it seeks to know to what extent the home meets the expectations of the individual and the satisfaction level that he will have after acquiring it. The construction of the indicator was based on the review of diverse international experiences (European Union and the U.S.).

For the definition of quality of life consultations were made to academicians (UAM, UNAM, Colegio Mexiquense), public officials (Conavi, SHF, Sedesol, Infonavit), construction companies and consulting firms. These definitions were incorporated in a survey (5,400 participants), applied at a national level with a representative range for eight regions and for two segments of Infonavit affiliated workers (with income lower and higher than four minimum wages).

The attributes to be included in the ICVV are included in four sub-indexes: home, environment, community and personal[15]. In the first, variables are included such as materials, living space, legal security, added-value and privacy, among others. The environment sub-index includes variables like proximity to employment site, urban equipping and services, public spaces, transportation and road system, pedestrian accessibility and security. The community sub-index includes indicators such as neighbor organization, conditions of respect and coexistence, maintenance of the home and diversity of homes. Lastly, the personal sub-index includes elements such as health, education, income, interpersonal relations and expectations.

The first results of this indicator show that the variation that the evaluation that individuals make on the concepts purely related to housing (privacy, physical characteristics, quality of materials and net worth value) have a weight of 40% in the quality of life. The elements associated with the environment (pedestrian accessibility, municipality, location of the housing development and security) are more important, with an evaluation of 57%; lastly, the communities have a weight of 3% in the quality of life according to those surveyed.

For the construction of the ICVV, it was separated between the rightful claimants with or without a mortgage loan to identify differences in the attributes of their homes. Although it is not surprising, the comparison is to raise awareness: the characteristics of the home, location

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[13] Although to institutionalize the policy, perhaps toward the medium term, it would be important to have hard indicators of the background of the those receiving the loans, to show for example that a better valuation of the home by the occupants (through the criteria established by the ECUVE) is reflected in a greater payment commitment or less risk of default. Maybe it is necessary to have sufficient historic evidence that supports this and it can be considered as a significant and trustworthy result.

[14] Nevertheless, it is also clear that in the medium term, it would be necessary to modify the rules of operation of this program, authorizing subsidies only to those homes that have a minimum rating or qualifying grade (previously defined) in the ECUVE.
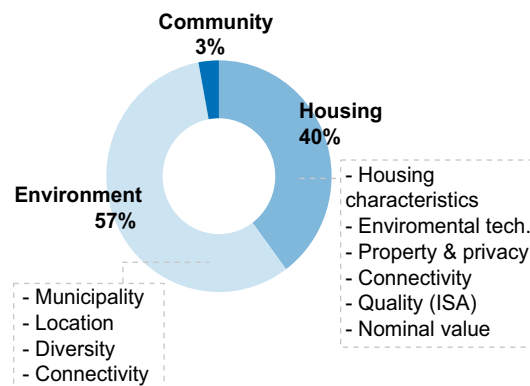
[15] Similar to the case of the ECUVE, the ICVV has indicators derived from appraisals and indicators already created. The exception in this case is for the personal component that is constructed from subjective perceptions.

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and services are, in all the cases, the best valued by those who have not acquired a loan. Results very consistent with what the ECUVE marks regarding the preference for used homes.

There is no doubt that the ECUVE as well as the ICVV constitute important progress in generating a better knowledge of the variables that are most valued in a home and that have a bearing with greater force on the quality of life. Its effectiveness will depend on the instruments that are applied to incorporate them in the housing programs and policies.

Graph 33
ICVV weighting: housing, environment and community*, %

Community
3%

Housing
40%

Environment
57%

- Municipality
- Location
- Diversity
- Connectivity

- Housing characteristics
- Enviromental tech.
- Property & privacy
- Connectivity
- Quality (ISA)
- Nominal value

*This refers to the results obtained from the National Quality of Life Survey. In the charts, there appear the elements that are included in each concept; the concept of community only included one question
Source: BBVA Research with Infonavit data.

Graph 34
Appreciation of housing: IVP Housing acquired In 2007

Economic (to 182) Popular (to 308)
Traditional (to 538) Medium (to 1.154)
Index SHF
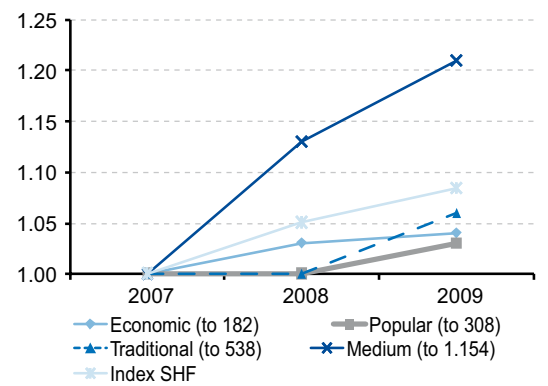
Note: Figures in parenthesis denote maximum value of the home in 2007 (according to the AHM classification), in thousand of pesos.
Source: BBVA Research with Infonavit data.

3) The Net Worth Value Index (IVP)

The final indicator is the Net Worth Value Indicator by which it was sought to have follow up on the changes in the value of housing financed through an Infonavit loan. The construction of this indicator requires information of the homes that are acquired in a specific period and are marketed some time later, that is, through the repeated sales of one same housing unit[16].

It can be said that the indicator is similar in purpose, although a little different in its characteristics, compared to the Housing Price Index worked out by the Federal Mortgage Society (SHF). In both cases, the intent is to measure the changes in the value of the home throughout time, with detail at a regional level[17]. However, probably the most important difference among them is the methodological closeness. The SHF estimates the Index based on a new hedonic home model (composed by the attributes of the home) which according to the appraisals ((which mostly include new homes), allows knowing housing value over time[18]. In turn, the IVP seeks to measure the appreciation or depreciation of housing, through sales of used homes (that can be through repeated sales of the same home or another one with similar characteristics in terms of age and attributes).

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[16] Something equivalent (although not necessarily easy), would be to have a development of housing units with similar characteristics for the first time in some year of reference and measure the evaluation of its prices throughout time.
[17] The SHF estimates the index for 35 municipalities, while the IVP has been estimated for 40.
[18] In the January 2010 edition of Real Estate Outlook, a review is made in detail of the international references to measure housing prices like the very well known Case–Schiller of the U.S. and also a description is made of the way in which the SHF established the methodology to measure these prices and their coverage.

The Infonavit is working to expand the coverage of the information in its databases and to be able to create indicators of national scope, although the preliminary results show interesting trends. Taking as a reference the classification of home prices adopted by the AHM in 2009 and homes placed initially in 2007 (and for which there is information of sales in later periods), the increase (in nominal terms) through 2009 stood at 3% and 6% for homes with prices below $550,000 pesos. On the other hand, within this sample, the homes with greater growth have been those of the segment classified as "average home", or with a value of up to $1.2 million pesos (in 2007)[19]. These results are consistent with various indicators that point to the lack of order in the industry and that are reflected in aspects such as excessive production in some segments and regions, as well as deficient quality of housing for the low-income segments.

Chart 8
Attributes of housing among Infonavit affiliates, with or without a loan

	Rightful claimants w/o a loan	Acred.
Number of rooms in the home	2.56	1.96
Evaluation of the materials (1:Bad, 7: Excellent)	5.88	5.16
Services: light, gas and water (%)	100	99.1
Distance from employment site (going and coming, minutes)	120.75	122.56
Schools, clinics and stores close by (1 Km, %)	70.83	61.73
Quality of urban services* (1:Bad, 7: Excellent)	5.26	5.17
Securiity in the home (1:Low, 7: High)	4.95	4.78

Source: BBVA Research with Infonavit data

Conclusions: the Infonavit 2011-2015 Financial Plan contains valuable contribution of diagnosis of the housing industry and anticipates the changes that it will have in the medium term

The diagnosis that Infonavit makes on the current conditions and medium term trends that will characterize the housing industry in the medium term should be read with attention, since it could constitute a reference for housing policy in the coming years.

As regards housing needs, the Infonavit coincides with other studies in pointing out that the housing policy of the past decade contributed to reducing the level of the housing lag in the country, and even though the lag is still significant, most of it corresponds to persons who do not have social security and /or require solutions other than complete housing. Some estimates are presented with regard to the present and future needs which, beyond their precision[20], emphasize the fact that the formal market that wants or could acquire a complete home, new or used, is only a fraction of the entire housing market; for the rest, there are no financing products to meet their needs. That is, in terms of demand, the housing market is changing quickly, although in terms of supply and financing, the products to attend it continue to be the same in general. Also, the fact seems to be imminent that the Infonavit will have the available resources throughout the decade to seek to attend new markets (financing for construction, expansion and remodeling, etc.), and at the same time offer higher yields to the sub-account (to which until now no priority has been given).

[19] Measured in real terms, the variation in the first group (homes of up to $550,000 pesos) was between 5% and 8%, for medium housing, a real increase of 10% is obtained.
[20] It is evident that with the figures from the 2010 census, new estimates should be made of the housing lag (probably with some modifications in the methodology) and in the projections of household formation.

On the other hand, the efforts by the government are undoubtedly worthy of recognition, in this case led by the Infonavit (although it is not the only public institution that participates), because it has the tools for supporting a better development of the housing industry and which, at the same time, favors better planned housing and urban development, contributing to raise the living standards of the population. There are some doubts, however, as to the operating possibility that could turn out to be fundamental for defining the impact of the ECUVE, the ICVV and the IVP. The organization in charge of publishing those indicators should be totally impartial so as to avoid any possible conflict of interest, perhaps the RUV, or, as some are beginning to suggest, an information bureau specialized in housing could carry out this activity. Also, the transparency as to the construction and quality of the indicators will be impossible to be accepted by the agents involved in this topic; the lobbying effort should not be ignored either. Perhaps the most important fact will be to have the appropriate legal instruments so as to guarantee the incorporation of these new indicators to the housing programs and policies. This is what experience has shown through the efforts that have been realized in the past.

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3c. Land and property policies: the property tax as an instrument for urban development

Among the different sources of tax collection, the property tax has characteristics that place it in an advantageous position in relation to other fiscal obligations, since its application is simple, it is difficult to avoid, and does not alter agents' economic decisions. Economic theory even recognizes it as one of the most efficient taxes and one that generates a lesser degree of distortion in economic activity. But this is only part of the picture, since if well applied, it represents a powerful tool for urban planning and development. In this article in **Mexico Real Estate Outlook** the property tax is analyzed as a source of tax revenue for public finances, especially for state and municipal governments, and as an instrument for urban development. In the first section, the main characteristics of the property tax will be reviewed, from an economic standpoint, as well as its main modalities. In second section, a panorama will be presented on the international experience in the collection of this tax, as well as its application in the case of Mexico, in line with the modifications to the juridical framework that regulates it. Finally, in the third section, a series of recommendations and proposals will be set forth to increase the efficiency of collection efforts and at the same time to incorporate criteria that would encourage better urban development.

1) Characteristics of the property tax

Comparison in relation to other sources of tax revenue

Due to its nature, the property tax offers advantages over other sources of fiscal revenue. In essence, it represents a compound tax due to two elements, each with its particularities: the tax applied to the land as such, and the tax that is applied to the construction or the value added to it. The main advantages are associated with the former component, the land tax.

First, the land tax is what is known in economic theory as "neutral", which means that its application does not alter agents' production decisions[1], since they cannot modify the use of the land or change its location and therefore cannot avoid or diminish its payment. Meanwhile, with the tax on construction or the value added (which are not necessarily the same), individuals can base their investment decisions according to the applicable tax rate.

Second, the land tax also contributes to taking better advantage of the existing infrastructure and it can be a public policy tool for an orderly growth of the cities. With low rates in areas with public services available and infrastructure already installed, it encourages the best use of the land and urban densification. In turn, high tax rates in areas that are difficult to access or that are lacking or deficient in public services and that are differentiated according to the use of the land, help guide the market in terms of the type of building and construction that should be undertaken.

Third, the land tax can help eliminate some distortions in the market, if it is established as an application tool with economic fundamentals. For example, in areas of rapid growth and/ or with investment in infrastructure that will spur their development in the medium term, the free market can give way to speculation and generate speculative bubbles in the prices of real estate assets. Differentiated land tax rates can help to correct these distortions. In the same sense, the land tax can contribute to correcting negative external factors, for example those associated with the environmental impact of economic activity[2].

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[1] Provided that in each geographic locality the tax is applied across the board, that is, to all and at the same rate, in accordance with the type of economic activity.
[2] Even though this advantage is not exclusive of the land tax, since legislation also plays an important role in this regard.

Finally, the property tax has the advantage that it can be administered in a relatively simple fashion on the local level and has the potential of being an important source of funds for tax administrations on a state and municipal level. Among the industrialized economies, the property tax represents around 35% of tax revenue collected locally (OECD, 2009).

2.a) International Experience

In this section an overview will be presented of the most common modalities adopted by the property tax in accordance with the different international experiences in this regard, as well as the success in terms of its collection capacity.

Chart 9
Property tax in Latin America, % share of GDP, selected countries, 2003

Countries	% of GDP
Latin America, property tax, 2003	
Uruguay	1.12
Colombia	0.71
Chile	0.69
Argentina	0.58
Brazil	0.52
Panama	0.35
Costa Rica	0.24
Mexico	**0.21**
Dominican Republic	0.05
Honduras	0.02
Nicaragua	0.00

Source: BBVA Research with Indetec (Institute for the Technical Development of Public Treasuries) and OECD data

Graph 35
Property tax in the OECD, % share of GDP, 2007

Average 1.9%
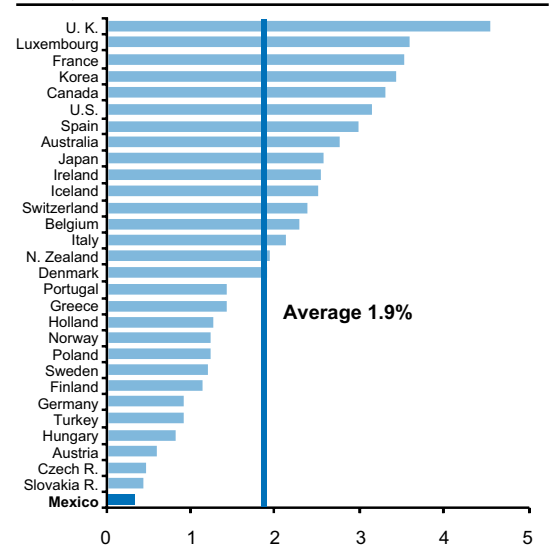
Source: BBVA Research with OECD data

In the European countries, the most common variant is to tax both the land as well as buildings and construction, although in some cases (rural Italy and Russia) the tax is only applied to the land. The rhythm with which the appraised value of the real estate[3] is updated (of key importance in terms of the potential to collect this tax) is every three years in Germany and France, although in some cases, such as Spain, it is done every eight years (see chart 10).

In North America, the collection of the property tax in the United States and Canada accounts for about 3% of GDP, among the highest on a world level. In the case of the United States, the property tax represents up to 70% of local government collected tax revenue (Gravelle, 2007). The state of Pennsylvania maintains a differentiated tax rate for land and construction in some cities, with the former being higher than the latter to favor investment in building projects. Other states such as New York, Connecticut, Maryland, and Washington D.C. also allow for such a policy model of differentiated tax rates (Common Ground - USA, 2009)

In Asia, particularly illustrative is the case of Hong Kong, where the property tax represents close to 40% of tax revenue. The model that the city has adopted is to lease (for periods of up to 75 years) urbanized land to private parties, so that the latter take charge of real estate construction (especially vertical housing) and urban development (construction of shopping

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[3] The appraised property value (or cadastral value) or land registry is understood as the system of information that contains the inventory of existing real estate (identification, description, cartography, and appraisal), as well as the infrastructure and urban services of a specific geographic area.

Chart 10
Main characteristics of land tax policies in Europe.
2001

Country	Type of tax		Appraisal System		Duration of real estate appraisal	Tax rates	
	Land and increased value or appreciation	Land	Federal	Local and Federal	(years)	Fixed	Rate Interval
Spain	✕		✕		8	✕	
England	✕		✕		4	✕ (d)	✕ (e)
Italy	✕ (a)	✕ (b)		✕ (c)	5		✕
Russia		✕		✕	N.A.		✕
Rest of Europe	✕			✕	3-5 years		✕

a) Urban areas
b) Rural areas
c) In addition, fees are charged to the owners
d) Determined by the central government
e) Determined by local town or city councils
Source: Federal Land Cadastre Service of Russia

malls, centers and offices) based on a régime that encourages (through tax exemptions) investment in urban development and infrastructure. Thus, the government obtains sufficient resources for public infrastructure and services from the construction companies or private parties. (Harrison, 2010)

Latin America also has had different interesting experiences in the application of the property tax. For example, in Colombia the Territorial Development Law was approved in 1997, with the aim of strengthening the revenue that the municipalities obtain from the value of the land. Through zoning reclassifications on land use (from rural to urban) and updating the latter's value, the municipalities had incentives to update the appraisals, since they were allocated a part of the increase in the tax associated with these measures[4]. A disposition was also adopted to encourage construction in urban areas, by applying higher rates to vacant land located in urban areas. (Smolka,2007)

In Brazil, based on a law enacted at the end of 1993, the city of Porto Alegre has been able to adopt measures for a more adequate and rational control of the land. Priority urban areas were defined based on their location, infrastructure quality, and degree of services provided. For these areas, local legislation established timeframes for developing the properties, and if the deadlines were not met, the properties would be subject to a progressive tax[5]. The municipal authorities facilitated the necessary paperwork with more agile procedures for planning permits, giving priority to construction projects.

Finally, in Uruguay, the country with the highest levels of property tax collection in the Latin American region (1.1% of GDP), the central government coordinates the functions of real estate property appraisal (or cadastral value), which are updated every three years.

Thus, in reviewing property tax policies around the world, some elements can be identified that determine the efficiency in their collection. First, a frequent updating of the property appraisals: in countries with higher collection levels, this updating of the tax rate occurs every three years. Second, separating the land tax from the real estate tax; although they are integrated into a single tax, having differentiated rates for each component of the property tax (land and construction), not only helps boost collection levels but also establishes incentives. Third, the administration of the tax is more efficient when the collection and management of the resources are carried out on a local level, since incentives are also generated for updating the tax rate and tax collection.

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[4] Calculating the value of the tax before and after the reclassification and updating of the property appraisal.
[5] The rate would increase annually at intervals of 20% until reaching a maximum rate of 30%. The lowest rates for vacant land vary between 5% and 6% of the market value of the property.

Inset 2: Some cases of property appraisal (cadastral) modernization in Mexico

This article in **Mexico Real Estate Outlook** presents the results of some experiences in Mexico with regard to property appraisal (cadastral) modernization, both on the state level (Sonora and the Federal District) as well as in municipalities (Mexicali, Northern Baja California), where it can be seen that the profitability of investment in property appraisal (cadastral) modernization is high and the benefits for the different participants in the sector rapidly emerge. The importance of transparency in the use of the resources generated from the collection of the property tax is also indicated, since the response of the population is more favorable in terms of its approval and consistent payment.

Municipality of Mexicali

In 1989, the municipality abandoned the mixed-based property tax policy (real estate construction and land) and adopted one based exclusively on land value, designed on the basis of a mathematical model to calculate the unit prices. In addition, a Municipal Property Appraisal (Cadastre) Committee was formed, comprised of real estate associations, professional organizations, and civic representatives. As a result, real estate tax revenue increased considerably, which allowed the municipality to launch a broader public services program. The modernization process of the cadastre (property appraisal) continued up until 2001, and has translated into real average annual growth of 7.3% in property tax revenue between 1990 and 2008. This process, which was extended to the rest of the municipalities, enabled the

state to more than double its property tax collection levels during this period.

Sonora

In 1991 the Cadastral and Registry Institute of the State of Sonora (Icreson, for Instituto Catastral y Registral del Estado de Sonora) was created. Among the most significant aspects of the implemented reform was the creation of a group of municipal mayors; the participation of associations tied to the real estate market for the definition and updating of unit values for the land and construction on it, and, perhaps most importantly, the automation of technical and administrative procedures and processes.

The Icreson provides assistance to the state's 72 municipalities in terms of administrative, operational, technical, and computer training. Another one of its functions is to issue decisions and findings on the blueprints and unit values of the land and real estate construction by property appraisal (cadastral) area, region, and sub-region, as well as construction scales in urban areas. The latter aims for property appraisal (cadastral) values to be similar to the commercial values that are in effect at the moment in which the appraisal is determined and which should be reviewed every year. As a result, property tax collection grew at an annual average real rate of 8.5% between 1990 and 2008, a more than three-fold increase in real terms.

To coordinate functions and to establish mechanisms for the evaluation of expenditures, the Cadastral Technical Council
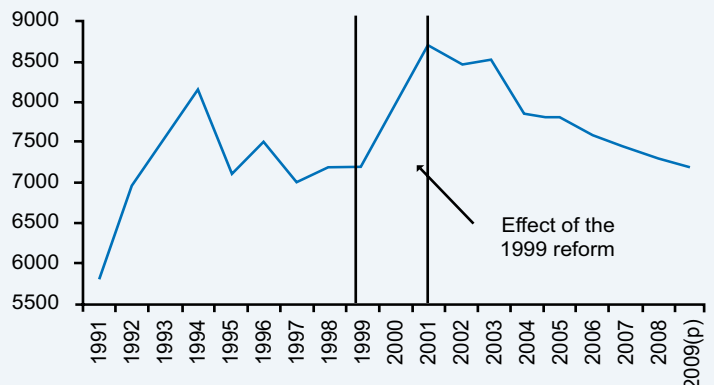
Graph 36

Property tax collection, Northern Baja California and Sonora (millions of pesos at October 2010 prices))

Successful long-term programs

BC — — Sonora
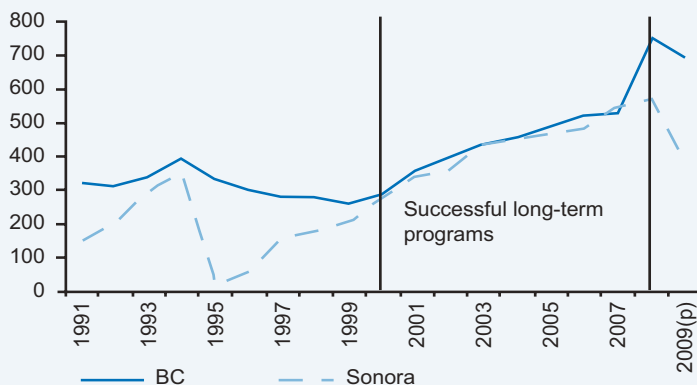
Source: BBVA Research with INEGI data

Graph 37

Collection of the property tax in the Federal District (millions of pesos at October 2010 prices)

Effect of the 1999 reform

Source: BBVA Research with INEGI data

BBVA Research

was created, comprised of a Secretary of Finances (the board chairman), the Secretary of Development Planning and Public Spending, the Secretary of Urban Infrastructure and Ecology, as well as a selection of municipal mayors and the participation of the College of Notaries, real estate developers, and certified appraisers.
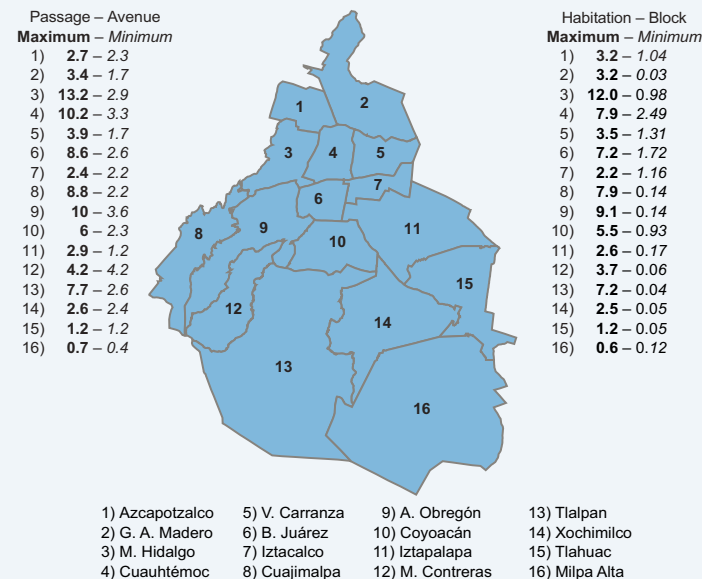
Distrito Federal

At the end of the 1990s, the Federal District launched a property appraisal modernization program that led to an increase in collection levels of about 25% in real terms in only two years. In 2002 it was decided to incorporate the value of taxes, or the expected revenue values derived from leasing real estate into the criteria used for charging the property tax. The proposal, although it was attractive when it was first designed and drafted, resulted in multiple complications when implemented, beginning with the reference points used for calculating the expected revenue, and then the applicable tax rates. The policy was not well accepted (something that is always important), and, in fact, led to a generalized demand on the part of the taxpayers who charged that the tax was inequitable (given that real estate being leased was taxed at higher rates than real estate for private use). The policy did

not help increase collection revenue, which in 2008 fell 20% in real terms in relation to the record high levels reached in 2001. The base rent schema was eliminated in 2008, and the tax collection strategy changed toward a more frequent updating of the property values, both in terms of real estate appraisal as well as land unit values.

The effort that has been carried out in the past few years in the Federal District to differentiate between land and real estate values has been very important. Each of the city's municipalities or boroughs has a scale of differentiated land and real estate values according to the location of the property (by neighborhood or even within a block radius). There are also differentiated property values depending on whether it is for residential or commercial use and along major thoroughfares. Thus, for example, the municipality with the highest land value is Miguel Hidalgo (in residential areas as well as along major thoroughfares). There is also a tremendous disparity in land values, both within the municipalities as well as between them, which reflects differences in the degree of economic development and the redistributional sense of this tax, although the incentives for economic efficiency are somewhat pushed to the sidelines.

Although it is true that each of the experiences mentioned has its particularities, common elements can be noted that are in line with successful practices on an international level in terms of differentiating the property tax, both for land as well as real estate construction, in areas depending on their value and urban characteristics; periodic updating of the tax; modernization of the property appraisal (cadastre) registry; and seeking to generate an improvement in the urban infrastructure. On this latter point it should be recognized that much remains to be accomplished in this regard on a national level. Although modest, the result of these efforts is reflected in a higher percentage of property tax revenue in the state GDP (Baja California 1.1%; Sonora 0.8%, and the Federal District 1.1%), whereas in other states the figure barely reaches 0.3%[1] (Pérez, 2007).

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Graph 38

Value per m² in commercial and residential areas in the Federal District (thousands of current pesos)

Passage – Avenue		Habitation – Block	
Maximum – *Minimum*		**Maximum** – *Minimum*	
1)	**2.7** – *2.3*	1)	**3.2** – *1.04*
2)	**3.4** – *1.7*	2)	**3.2** – *0.03*
3)	**13.2** – *2.9*	3)	**12.0** – *0.98*
4)	**10.2** – *3.3*	4)	**7.9** – *2.49*
5)	**3.9** – *1.7*	5)	**3.5** – *1.31*
6)	**8.6** – *2.6*	6)	**7.2** – *1.72*
7)	**2.4** – *2.2*	7)	**2.2** – *1.16*
8)	**8.8** – *2.2*	8)	**7.9** – *0.14*
9)	**10** – *3.6*	9)	**9.1** – *0.14*
10)	**6** – *2.3*	10)	**5.5** – *0.93*
11)	**2.9** – *1.2*	11)	**2.6** – *0.17*
12)	**4.2** – *4.2*	12)	**3.7** – *0.06*
13)	**7.7** – *2.6*	13)	**7.2** – *0.04*
14)	**2.6** – *2.4*	14)	**2.5** – *0.05*
15)	**1.2** – *1.2*	15)	**1.2** – *0.05*
16)	**0.7** – *0.4*	16)	**0.6** – *0.12*

1) Azcapotzalco	5) V. Carranza	9) A. Obregón	13) Tlalpan
2) G. A. Madero	6) B. Juárez	10) Coyoacán	14) Xochimilco
3) M. Hidalgo	7) Iztacalco	11) Iztapalapa	15) Tlahuac
4) Cuauhtémoc	8) Cuajimalpa	12) M. Contreras	16) Milpa Alta

The map represents the maximum and minimum values of the land value in commercial and habitational areas. Figures in force for 2010.
Source: BBVA Research with F.D. Finance Department data.

2.b) The experience in Mexico

In Mexico, current property tax collection levels represent around 0.2% of GDP, and have remained around that percentage figure (with a slight downtrend), at least since 1980. The figure represents the lowest percentage among OECD member countries, where the average is 2%, as is also low compared with a large part of the economies of the Latin American region. Indeed, Uruguay, Colombia, Chile, Argentina, Brazil, Panama, and Costa Rica all have property tax revenue levels higher than those of Mexico.

Graph 39
Property tax as a % of GDP
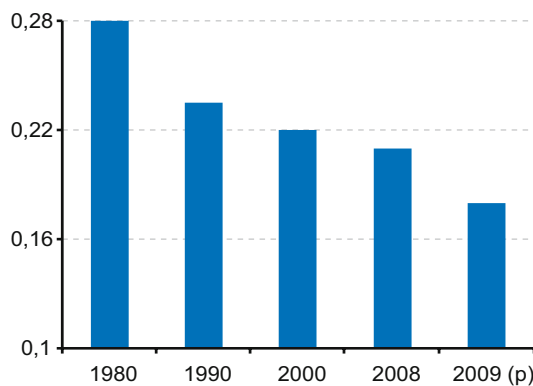
Source: BBVA Research with INEGI data

Graph 40
Property tax as a % of/ public sector revenue
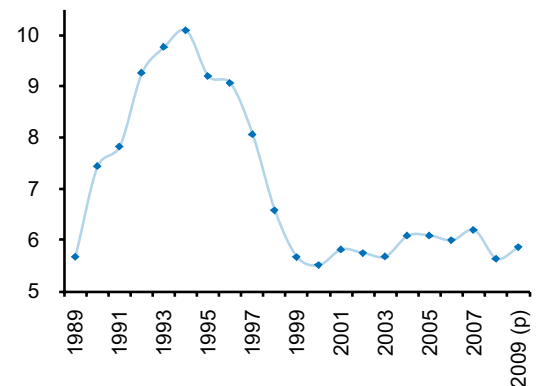
Source: BBVA Research with INEGI data

In Mexico, property tax revenue collection is very much below other sources of tax revenue. Of the revenue received by state governments, barely 13% corresponds to local collection. Of this percentage, taxes contribute 5.8 percentage points (that is, less than half); within the latter is the property tax, which together with the property ownership transfer tax (incorporated in all purchase-sale transactions involving real estate) contributes 2.3 points. To make a comparison with other taxes, the motor vehicle ownership tax alone brings in 1.5 times more revenue, the Special Tax on Production and Services (IEPS, an excise tax) accounts for three times as much, while the VAT exceeds collection levels by 3000%.

A review of the main modifications to the legal framework that regulates the property tax helps to explain its evolution over the past few decades. Up to 1983 the property tax was collected through the three branches of government. The real estate acquisition tax corresponded to the federal government; the state governments received most of the revenue collected from the property tax; and the municipalities obtained the fees from construction permits. In that year, with the reform to Constitutional Article 115, the financial autonomy of the municipalities was consolidated. With this, they acquired control of their real estate properties through division, consolidation, transfers, and improvements. In additional, the municipalities were also authorized to define the tax scales. However, the absence of advisory programs in the matter prevented the resources from being administered from the beginning by the municipal governments, which in many cases led them resort to using the clause of the article that allowed the local governments to sign agreements with the state governments, in exchange for a percentage (between 30% and 50%) of the collection for the service provided.
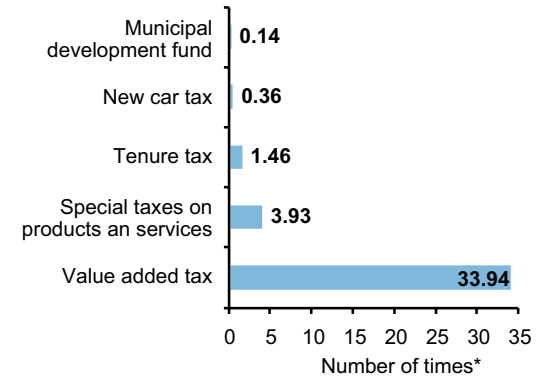
The federal government's policy of decentralizing expenditures has had an important impact on the collection of the property tax. Since the mid-1990s the federal government, through what are known as "federalized resources (authorized budgetary outlays and revenue sharing) has transmitted greater authority to the states and municipalities over the administration and application of public resources. For purposes of local tax administration, there are simply fewer incentives to make an effort at tax collection. In 2008, efforts were undertaken to reverse

Graph 41
Percentage distribution of revenue through 2Q of 2010

Rights, products and contributions 4.2%

3.7% Exploitation
4.7% Other income
5.8% Taxes
8.1% Other federal revenue

35.8 % Federal contributions

37.6 % Federal contributions

Property tax and transfer of title to real 2.32%
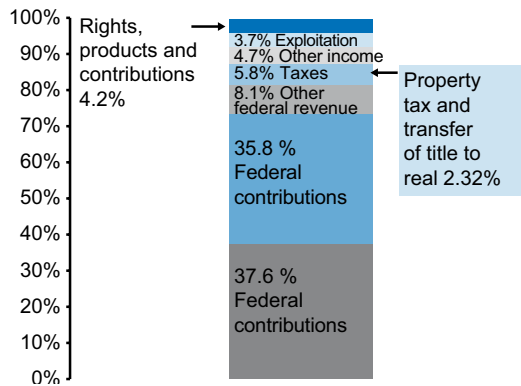
Source: BBVA Research with Indetec data

Graph 42
Yield of the property tax compared with other tax collection sources, 2009

	Number of times*
Municipal development fund	0.14
New car tax	0.36
Tenure tax	1.46
Special taxes on products an services	3.93
Value added tax	33.94

* Number of times the property tax is contained in other taxes
Source: BBVA Research with data from the 2009 Federal Revenue Law

this effect, with the incorporation of economic efficiency criteria (economic growth and local tax collection) in the distribution formula of the revenue earmarked by the federal government to the states, although the response has not been very clear [6]. However, it should be mentioned that the experiences in terms of the modernization of property appraisals have produced very favorable results. For example, with the changes in the agrarian legislation at the beginning of the 1990s[7], an updating of property appraisals was carried out, which allowed tax rates to be increased by up to 75% for land and construction. With this, property tax collection levels rose from representing 6% of public sector revenue in 1989 to 10% in 1994.

Nevertheless, the policy of federalizing expenditures, made the property tax percentage share of the total return to its levels prior to this reform, and it has remained there for more than a decade.

In 1999 the legislation was reformed to completely transfer collection of the property tax to the municipalities and for these resources to be managed locally. Thus, it has only been in the last decade when the state and municipal governments have had the incentive to increase collection levels of the property tax, although this has implied challenges in terms of modernization and updating property appraisals, in which some states have had better results than others. Although on a state level between 2000 and 2008 the collection of the tax grew in real terms in 29 of the country's 32 states (in Chiapas, Puebla and Tamaulipas collection levels fell), in some the growth was considerably above that of state GDP and of other taxes collected locally.

Among the cases in which the greatest effort can be seen is Jalisco, where the increase in property tax collection levels was four times the growth of the state's economy. Meanwhile, in states such as the Federal District, where an important effort to update property appraisals has also been undertaken (see Box 2, Some cases of property appraisal modernization in Mexico), the growth has been more modest. This can partly be attributed to each state's level of development in terms of its capacity to collect the tax. The Federal District is in second place among the states in terms of the percentage share that the property tax represents in the economy, close to 0.4%, double the national average.

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[6] A factor that has influenced this panorama is that high oil prices continue generating a relatively large amount of resources for distribution, and that in the latest round of budget negotiations, funds earmarked for the states (before applying the distribution criteria) have most benefited from this situation. That is, the efficiency mechanisms, although they are being applied, have not been very important.
[7] Together with other measures, such as the Department of Social Development (Sedesol) 100 Sedesol Cities program, launched in 1992, which sought to offer urban land to low-income sectors of the population in order to attend to their housing needs, structure public transportation and road systems, maintain the ecological balance of the urbanization processes, and promote the revitalization of the downtown areas of the country's cities.

Graph 43
State GDP vs. property tax average % change, 2003-2008
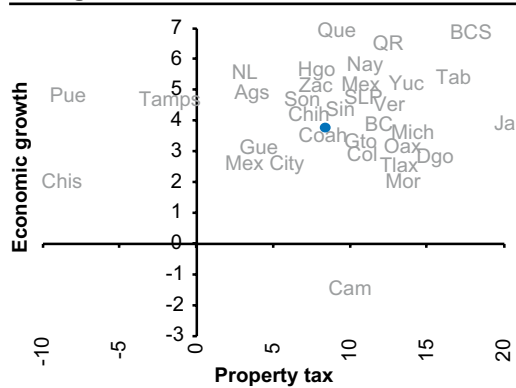
● National average
Source: BBVA Research with INEGI data.

Graph 44
Property tax as a percentage of state GDP, 2009


National participation 0.18%
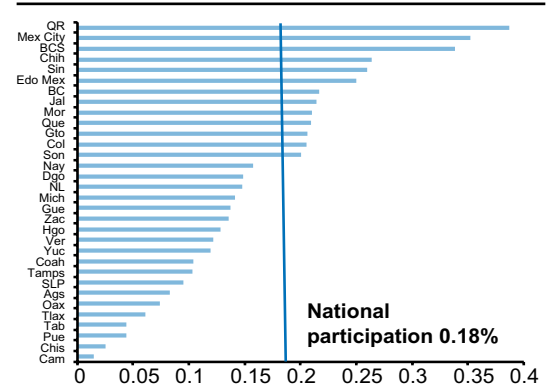
Source: BBVA Research with INEGI data.

A more detailed look at a local level indicates that of the country's 2,456 municipalities, 522 of them (close to 20%) do not charge a property tax, and at the same time, 90% of the collection is carried out in only 150 municipalities. About 60% of Mexico's population resides in these localities, and therefore the remaining 40% practically does not comply with this tax obligation.

Given the technical and personnel requirements that are necessary to administer the property tax, it is clear that only a few municipalities, in fact, have the capacity to collect it. If we look at which municipalities have been able to increase collection levels above the national average (8.5% in real terms in the 1998-2008 period) it can be noted that, first of all, the growth is concentrated in those that already represent a relatively important share of the revenue from this tax within the state (mainly the state capital and one or two more cities); and secondly, that this universe does not even account for 2% of the country's municipalities[8].

Graph 45
Municipalities that collect property tax and percentage share in the total,%
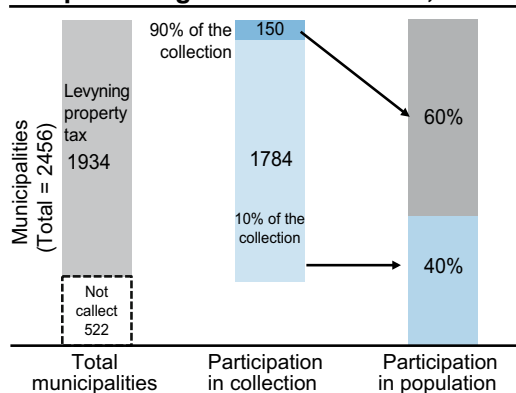
Source: BBVA Research with INEGI and Conapo data

Graph 46
Growth in property tax collection according to size of cities, 1998-2008
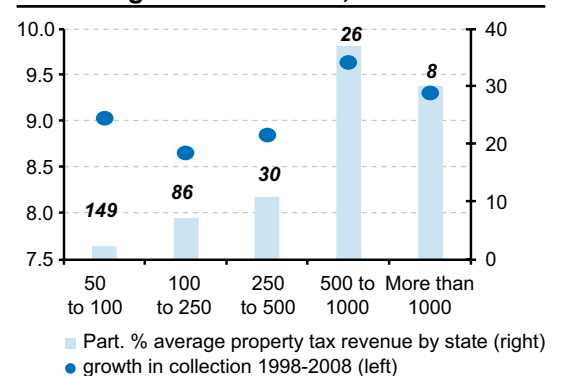
In italics: number of municipalities
Source: BBVA Research with INEGI and SHCP data

Based on the decision to transfer responsibility for the collection of the property tax to the municipalities, different efforts have been undertaken by the federal government to move forward in the modernization and updating of the public registries and municipal property appraisal (cadastral) records, since they are what, in the final analysis, allow for the collection of taxes.

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[8] The 36 cities that posted growth in property tax collection levels above the national average in the period, have more than 500,000 inhabitants.

While in some cases progress has been registered, the overall balance points to rather modest results, as is confirmed by the lag in the collection of this tax over the course of the past decade.

There are different reasons that explain deficiencies in the application of the property tax. To begin with, property appraisals are not regularly updated, and therefore the base for the collection of the tax only represents a fraction of the market value of the corresponding real estate, since, with the exception of specific cases, the state legislation does not require such updating. At the same time, there is an absence of regulatory criteria of generalized application as well as sufficient technical capacity to allow for accurately determining property appraisals or even agile rectification mechanisms in the event of errors. Of course, technological deficiencies in the municipal governments and even political interests affect this panorama (Pérez, 2007).

In spite of everything, some recent practices on a local level are innovative and very promising. For example, in 2009 the Infonavit (the national workers'housing fund) began a pilot project with the Tijuana municipal government in Baja California, to include the collection of the property tax in mortgage payments. On an operational level, the measure began to be applied in 2010, with very satisfactory results, with the acceptance of more than 90% of the recipients of Infonavit credit (collection of the tax requires the borrower's authorization) and in the course of the year around 10,000 loans were incorporated under this modality. In the following stages of the project, the aim is to previously identify and rate the municipalities that could participate in the program[9]. Some 80 municipalities have already been evaluated, of which 25 qualify and could soon be incorporated in the program. The program offers many advantages; first of all, it increases the revenue of the municipal treasury; secondly, with more efficiency in collection efforts[10], the amount received via federal revenue sharing policies increases; third, with the certainty of receiving property tax revenue, it is possible to issue debt based on the expected revenue flows[11].

An additional example is the program promoted by the DUIS (Sustainable Integral Urban Developments), where it is proposed that the municipality return a fraction of the revenue received through the collection of the property tax for maintenance work and DUIS urban development .

Other positive, although isolated, experiences, are those that involve the community in managing the resources obtained through the property tax. Examples of such efforts are to be found in Santa Fé, in the Federal District, and in Puerto Peñasco, in Sonora. These experiences have been influenced both by neighborhood organization as well as the positive disposition of the local authorities. Although such experiences can be duplicated, this accountability model would face some restrictions for its generalized application in the country[12].

3) Conclusions: the importance of appropriately using the property tax as an incentive for a better urban development and a source of fiscal revenue

The property tax has qualities that make it more attractive in terms of economic efficiency, when compared with other sources of tax revenue. It also has the potential of aligning the decisions of individuals with urban development policies. In Mexico, the application of this tax is far from its potential, with collection levels below those of economies with similar or even lower levels of development. The fact that most municipalities' revenue still comes from federal budgetary outlays has worsened the inequity and the little available infrastructure and public services in areas with potential growth. Much remains to be done to make better use of this tax. Some of the measures in this regard are unavoidable, such as the modernization of the

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[9] A kind of advance accountability on the use of the resources.
[10] On a national level, efficiency in property tax collection is about 60% in terms of the property tax actually collected, while with automatic collection the figure increases to 90%.
[11] Given the advantages, it should also be mentioned that the massive implementation of a program of this type is not easy. To begin with, it requires the standardization of the information involving property tax accounts and loan holders, which can be quite complicated when, as is the case, there is no uniformity (because there are no legal dispositions that regulate it) to standardize the information on a municipal level. The definition of legal responsibility in the event of errors or omissions is a no less important topic. To guarantee an appropriate control of these activities requires the participation of companies that are specialized in the field.
[12] Legally, there are no mechanisms to tie the collection of a tax to a specific end. This would require modifications to the constitutional framework of each state. The difficulties start with the very nature of the taxes, which have a re-distributional purpose.

municipal property appraisal registries (the cadastre) and the design of policies for the periodic updating of property appraisals; applying differentiated tax rates with regard to land and real estate, with these being higher where there is no infrastructure or appropriate conditions for urbanization[13]. Finally, designing better incentives to align municipal development plans with those of the states and these, in turn, with the guidelines established by the federal government with regard to urban development. In addition, more efficient mechanisms must be sought both for the collection of the property tax well as for a greater channeling of resources toward urban development, from the creation of basic infrastructure to its expansion and maintenance. All this implies important challenges, but if achieved, offers the double benefit of strengthening municipal government finances, facilitating the expansion of urban infrastructure and having housing policies that are better planned and sustainable in the medium term.

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[13] The policy model applied in Mexico consists of integrating the value of the land and real estate, based on tabulator of unitary values for each and applying a single tax rate to it.

Inset 3: Diagnostic study of property appraisal (cadastral) registries and their legal situation

This article in *Mexico Real Estate Outlook* describes the results of the diagnosis undertaken by the National Geography and Statistics Institute (INEGI) on the country's property appraisal (cadastral) registries. The manner in which they operate, the information that they compile, and even their degree of modernization, measured in terms of their capacity to integrate, update, and store the information they manage, are reviewed.

Property appraisal or cadastral information

The study on the current situation of the property appraisal (cadastral) registries encompassed 70% of the municipalities that register revenue for property taxes (1,361 of 1,934) and involves three major elements: the type of information that is compiled; the way in which the data is managed, and; the use that it makes of technology in the process. In terms of information, a first result is the need to expand the coverage and depth in the registry in order to improve collection levels, but also (and primarily) to have precise data on the properties and their occupants. Only ten of the country's states have property appraisal information in all their municipalities; while, on the opposite end, in three states the number of municipalities with property appraisal information does not even represent 5% of the total. It is also interesting to note that, among the municipalities studied, only 40% have databases with property appraisal information[1].

The information that the property appraisal registries compile can be divided in four major categories: location and characteristics of the properties, real estate, and owners[2]. For each category, different fields of information are included, and therefore a reference point for knowing how detailed or in depth the property appraisal information is would be to measure the number of data fields that are compiled in relation to the potential total[3]. Thus, for example, with regard to location, 85% of the municipalities compile all the information related to this topic; in terms of the characteristics of the property and the corresponding real estate construction, 60% of the municipalities collect all the available information. In contrast, in relation to ownership, only 20% of the municipalities compile all the information.

In synthesis, what can be concluded from the characterization of the information is that the primary objective of the property appraisal (cadastral) registries has centered on determining the location of the properties, while delving into its characteristics (including real estate construction) is on a second plane in its priorities, and data on the owners is a far distant goal.

The legal framework

In terms of legal aspects, the review conducted by INEGI data on the property appraisal legislation at the state level

Graph 47
Property appraisal registries (cadastres): Municipalities with information registered

	Ags	BCS	Cam	Col	Mex City	Dgo	Edo. Mex	Mor	Nay	Sin
100										
90-99	Gro		Gto		Coah	Son	Zac	Tam	Qro	Tlax
80-89	QR	BC		Mich			NL	Chih		
70-79	Hgo									
60-69	Jal									
50-59	Ver		Pue		Yuc					
40-49										
30-39										
20-29	Tab									
10-19										
0-9	Oax		SLP		Chis					

* Figures in parenthesis indicate the percentage of municipalities for which information exists in relation to the total number of municipalities in the state
Source: BBVA Research with INEGI data

Graph 48
Coverage of property appraisal (cadastral) information *

* It refers to the number of municipalities that compile information (all that is available) in relation to the total that responded to the survey. The percentage of coverage is averaged out in all the indicators, weighted by the number of responses in each category.
Source: BBVA Research with INEGI data

[1] If all of the country's municipalities are used as a reference, the percentage reaches 22% (552 of 2,456).
[2] The INEGI study adds an additional category to the four, associated with tools of a geographical nature to record the information.
[3] It should be noted that this simply refers to coverage, not to quality. The INEGI does not present information on the dependability of the data, but only whether it is compiled.

Chart 11

**Objectives of property appraisal
(cadastral) registries in state legislation ***

Type of objective	No. of states that apply it
Fiscal	10
Economic	3
Physical	1
Multipurpose	8
Legal	6
Statistical	11
Socioeconomic	7
Urbanistic	1
Historical	3
Technical	6
Planning	6
Social	1
Administrative	6
Geographical	4
Others (a)	1
Not specified	15

* Any other modality of property appraisal or cadastral services
Source: BBVA Research with INEGI data

offers a good reference framework to make comparisons on its structure, objectives, and scope. In most of the cases, the purpose behind this legislation is simply registration; monitoring or oversight elements still are not very present.

The oldest property appraisal or cadastral legislation in the country is in the state of Morelos, enacted in 1880. Since then, an additional 27 states have incorporated this legislation onto their books. The states that still have not done so are the Federal District[4], Chiapas, Puebla, and Oaxaca. A total of 23 states have incorporated in their constitution the faculties that since 1999 allow the municipalities to be the level of government that proposes to the states the applicable fees and tax rates and other local fiscal obligations. At the same time, 11 states have also incorporated the authority of the local legislature to update (in coordination with the municipalities) the property appraisal value with the real estate market value.

Even though property appraisal or cadastral legislation might exist, not in all the cases are its objectives defined. In fact, objectives are only established in 17 states. Among them, only 10 include monitoring and oversight as an objective of property appraisal or cadastral activity.

At the same time, even though it is recognized that cadastral activity should be brought to the local level, in most of the cases (25 of 28 states), the legislation stipulates that the governor is the responsible authority. In terms of the professionalization of the property or cadastral registries, only 11 states mandate a property appraisal or cadastral institution within the state public administration (even if it

is decentralized).

Among the variables that comprise the property appraisal or cadastral registry, only in 11 states is the value of the land identified as such an element and only one (State of Mexico) separates the unit value of the land and the value of the corresponding real estate construction.

Chart 12

Technical standards regulating cadastral or property appraisal in state legislation *

Topic	No. of states that implement it
Surveying	16
Processing	9
Cartography	13
Property appraisal services	5
Real estate property inv.	4
Information disclosure	4
Admin. dispositions	10
Establishment, improvement, and conservation of registries	5
Others (a)	5
Unspecified	6

* Examples of others: valuation, formats, ratio table, property appraisal (cadastral) function, formation of property appraisal (cadastral) registry, value tables, and updating
Source: BBVA Research with INEGI data

Conclusions

A review of the information generated by the property appraisal (cadastral) registries, as well as their legal situation shows the disparities that exist in the country, not only in terms of the availability of information but even in relation to the objectives, attributions, and level of detail that should correspond to these registries. Achieving higher levels of efficiency in this activity will require the implementation of strategies in different fields. Such strategies should include the training of officials, but above all, better incentive formulas so that the state governments will promote the changes that are required (legal, administrative, etc.) to expand and provide more detail to the information that the property appraisal registries contain, with registration as well as oversight purposes.

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[4] In the Federal District, property appraisal (cadastral) activity is regulated through juridical statutes (bylaws, organic law, and internal regulations) of the local public administration, as well as by the local financial code.

4. Annual macroeconomic indicators

Chart 13
Annual macroeconomic indicators

	2002	2003	2004	2005	2006	2007	2008	2009	2010f	2011
Real GDP[1] (annual % change)	0.8	1.3	4.0	3.2	5.2	3.2	1.5	-6.1	**5.3**	**4.3**
Private consumption, real (annual % change)	1.5	2.2	5.6	4.8	5.7	4.0	1.8	-7.1	**4.6**	**4.1**
Government consumption, real (annual % change)	-0.2	0.8	-2.8	2.5	1.9	3.1	1.1	3.5	**2.1**	**1.8**
Investment in construction, real (annual % change)	3.5	3.2	5.1	4.1	7.9	4.9	4.2	-5.2	**1.3**	**5.3**
Residential			3.7	2.5	8.9	3.5	0.5	-16.1	**-1.1**	**5.0**
Non-residential			6.1	5.2	7.2	5.9	6.8	2.0	**2.7**	**5.5**
Formal private empl. (IMSS)[2], total	12,279	12,369	12,506	12,893	13,486	14,046	14,326	13,891	**14,387**	**15,070**
Annual % changel	-0.8	-0.7	1.1	3.1	4.6	4.2	2.0	-3.0	**3.6**	**4.7**
Avge. salary of cont. (IMSS, nominal pesos per day, avge.)	158.0	168.4	178.6	188.9	198.5	209.2	220.3	229.6	**236.7**	
Annual % changel	2.9	1.9	1.3	1.7	1.4	1.4	0.2	-1.0	**-1.5**	
Real total wages (IMSS, annual % change)	2.1	2.6	2.5	4.8	6.1	5.6	2.2	-4.0	**2.1**	
Minimum general salary (daily, nominal pesos)	39.74	41.53	43.30	45.24	47.05	48.88	50.84	53.20	**55.77**	
% real annual change	0.7	0.0	-0.4	0.5	0.4	-0.1	-1.1	-0.6	**0.2**	
Consumer prices (end of period, annual % change)	5.0	4.5	4.7	4.0	3.6	4.0	5.1	5.3	**4.2**	**3.7**
TIIE 28 average (%)	8.2	6.8	7.1	9.2	7.1	7.3	7.9	5.1	**4.5**	**4.5**
10 year interest rate, 10 year Govt bond (M10)	10.1	9.0	9.5	9.7	9.8	9.9	10.0	8.0	**6.8**	**6.3**

f Forecast from the date indicated. Componentes del PIB, consumer princes and interest rates under review.
[1] INEGI modified its registry methodology base 2003=100. Previous data are being revised by INEGI, that is why data is in 1993=100 base. Seasonally adjusted series.
[2] Thousands promethium. Seasonally adjusted series.
Source: BBVA Research with Banco de Mexico, Conasami, INEGI and IMSS data

Chart 14
Annual construction and housing indicators

	2002	2003	2004	2005	2006	2007	2008	2009	2010f	2011
Real GDP[1] (annual % change)	2.0	3.3	5.2	3.8	7.8	4.3	3.1	-6.4	**-0.2**	**4.6**
Building	2.6	3.3	3.5	0.6	9.5	3.5	0.0	-13.1	**-0.4**	**4.2**
Civil engineering and major works	1.0	3.3	7.7	12.2	5.5	6.1	10.3	7.0	**0.5**	**5.2**
Specialist construction work	0.7	3.3	10.4	-0.6	2.6	4.1	-0.5	-10.5	**4.3**	**5.2**
Construc. employment (IMSS, thousands of people, avge.)	937.5	945.5	969.4	1,020.1	1,133.1	1,203.8	1,209.5	1,103.6	**1,145.5**	**1,210.7**
Annual % change	0.4	0.8	2.5	5.2	11.1	6.2	0.5	-8.8	**3.8**	**5.7**
Hydraulic cement production (tons, annual % change)	2.4	0.8	4.0	11.1	7.7	2.0	-3.1	-3.8		
Domestic cement consumption (tons, annual % change)	1.2	-0.3	2.9	10.1	6.7	1.1	-4.0	1.4		
Construc. companies[2] (real prod. value, annual % change)			1.7	4.2	7.5	2.8	-0.8	-10.1		
Building			16.2	9.0	9.5	9.2	-0.9	-20.2		
Public works			-6.0	0.2	8.7	-3.2	-0.2	8.7		
Water, irrigation and sanitation			31.2	-1.3	-18.5	-22.0	4.9	-1.3		
Electricity & communications			-15.3	-28.4	12.5	-15.2	19.6	32.4		
Transportation			-16.8	6.9	6.9	7.8	13.7	9.4		
Oil and petrochemicals			-0.2	5.7	26.3	-5.6	-26.3	1.4		
Other			-16.4	-0.8	-6.9	-5.8	-3.3	-36.4		
Residential construc. prices, general (annual % change)	3.5	6.9	14.5	0.6	11.8	2.9	13.1	-1.0		
Construction materials (annual % change)	2.7	7.2	17.7	-0.2	14.1	2.6	15.5	-1.8		
Labor (annual % change)	7.6	5.4	4.5	3.8	3.8	4.4	3.5	3.1		
Mortganges granted (thousands)[3]	295.8	381.8	472.8	529.4	597.1	646.5	643.9	586.8	**561.4**	**600.0**

f Forecast from the date indicated.
[1] Seasonally adjusted series.
[2] Considered to affiliates and nonaffiliated to the Mexican Chamber of Construction Industry.
[3] Inclues new and used home: INFONAVIT, FOVISSSTE, Banking and Sofoles (considers reduction for co-financig)
Source: BBVA Research with Banco de Mexico, Conasami, INEGI and IMSS data

Chart 15
Annual housing market indicators (a)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010*
Housing sales (thousands of units)											
Total	282.2	253.2	343.6	400.5	418.6	554.9	538.9	512.1	490.2	401.2	271.7
Segment A	93.1	63.4	75.6	83.2	94.2	105.3	137.0	120.0	193.8	153.1	104.3
Segment B	172.1	162.2	223.8	259.5	246.4	363.2	275.0	250.0	181.8	147.3	99.3
Segment C	12.0	21.3	34.3	44.2	54.8	58.8	85.0	90.0	76.4	70.3	46.5
Segment D	2.8	3.7	6.4	9.1	13.8	18.9	23.5	31.2	26.7	21.9	15.7
Segment E	2.1	2.6	3.6	4.4	9.4	8.8	18.4	20.9	11.5	8.6	5.9
Housing prices (thousands of pesos*, average)											
Total**	461.8	515.6	545.3	544.7	350.9	559.4	633.1	722.6	575.9	595.8	599.2
Segment A	292.5	300.2	286.7	266.2	249.5	252.5	245.2	250.6	233.4	242.0	243.6
Segment B	434.1	425.1	444.3	435.3	40.0	421.9	397.3	408.0	389.0	394.1	398.8
Segment C	976.7	992.6	990.9	981.8	892.6	881.7	823.6	851.3	807.0	817.3	822.4
Segment D	2,231.2	2,229.8	2,218.1	2,151.4	1,541.1	2,006.5	1,985.1	1,944.8	1,847.1	2,003.6	1953.1
Segment E	5,034.4	5,051.3	5,028.1	4,508.0	4,622.8	4,670.3	4,436.3	4,816.1	4,808.8	4,933.2	4880.8
Housing prices per M2 (pesos*, average)											
Total**	6,660	6,896	6,963	7,345	7,087	7,305	7,368	7,919	7,231	7,699	7,752
Segment A	5,673	5,940	5,566	5,770	5,548	5,939	5,816	5,978	5,738	6,104	6,142
Segment B	6,817	6,688	6,706	7,109	6,595	6,873	6,635	6,907	6,700	6,856	6,931
Segment C	8,879	9,150	9,612	9,415	8,838	8,950	8,508	8,758	8,580	9,040	9,115
Segment D	12,237	12,292	12,356	13,225	12,157	12,781	12,288	12,805	12,548	14,398	14,206
Segment E	17,702	17,059	17,354	17,980	17,818	18,806	18,314	20,269	19,465	22,435	22,075
SHF index housing prices in Mexico											
(annual % change)							6.7	7.6	5.0	3.2	5.5

* To month of September 2010, ** Price weighted by volume of sales.
(a) This data consists of only 40 seats the country
Source: BBVA Research with Banco de Mexico, Softec data

Chart 16
Annual housing finance indicators

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010*
Number of loans granted (thousands)											
Total	274.5	235.4	295.8	381.8	476.0	567.5	670.8	725.7	747.4	678.2	645.8
Infonavit	250.1	205.3	275.0	297.7	306.0	376.4	421.7	458.7	494.1	447.5	475.0
Fovissste	23.3	26.4	11.1	66.4	59.4	48.7	76.6	68.4	86.9	100.3	75.0
Banca comercial y Sofoles	1.1	3.7	9.7	17.6	110.6	142.4	172.5	198.6	166.4	130.5	95.8
Reduction***						-38.1	-73.7	-79.2	-103.5	-91.5	-84.4
Equivalent purchases	274.5	235.4	295.8	381.8	472.8	529.4	597.1	646.5	643.9	586.8	561.4
Financing flow (billions of pesos, October prices)											
Total	70.0	63.3	81.9	108.6	153.9	192.6	242.6	259.3	246.9	209.1	214.8
Infonavit	63.9	52.8	68.9	71.9	73.0	93.1	105.7	98.6	113.3	99.9	113.5
Fovissste	5.2	7.1	4.9	22.5	21.0	18.1	28.5	24.7	32.7	48.3	35.2
Commercial banks and *Sofoles*	1.0	3.4	8.1	14.3	60.0	81.3	108.5	135.9	100.9	60.9	66.1
Commercial banks current loan portfolio											
Balance end of period (billion pesos)	87.0	82.5	211.3	179.4	165.8	226.1	275.8	319.9	353.3	367.3	376.1 [1]
Past-due loans index (%)	13.7	12.6	11.2	8.4	6.1	3.2	2.7	3.1	3.6	4.6	4.6

Note: Price ranges expressed in multiples of minimum monthly wage (mmwt). Segment A (61-160 mmwt); B (161-300); C (301-750); D (751-1,670) and E (1,671 and over).
SMM=1,667 pesos in 2009 in zone "A"; * Estimated; ** Price weighted by volume of sales; *** Refers to finance (loans and subsidies) counted in two or more institutions
[1] To the third quarter.
Source: BBVA Research with Banco de Mexico, CNBV, Conavi and Asociación Hipotecaria Mexicana (AHM) data.

Chart 17
Quarterly macroeconomic indicators

	07'III	IV	08'I	II	III	IV	09'I	II	III	IV	10'I	II	III
Real GDP (annual % change)	3.5	3.7	2.3	2.8	1.7	-0.8	-7.2	-9.6	-5.5	-2.0	4.6	7.6	5.3
Private consumption, real (annual % change)	2.9	3.9	2.8	3.4	2.1	-1.2	-9.1	-11.0	-5.3	-3.0	3.9	7.8	5.0
Government consumption, real (ann. % chge.)	4.0	4.1	1.4	1.6	0.3	1.0	5.5	2.1	3.7	2.7	1.1	5.3	2.5
Const. investment, real (annual % change)	4.3	5.9	4.9	7.2	4.9	0.0	-3.3	-5.8	-5.1	-6.6	-1.7	-0.1	2.3
Residential	2.7	4.2	3.6	5.5	0.1	-6.9	-13.8	-17.9	-16.9	-15.6	-7.3	-2.7	2.0
Non-residential	5.5	7.1	5.9	8.3	8.2	4.8	3.9	2.5	2.6	-1.0	1.5	1.3	2.4

Source: BBVA Research with INEGI, and Banxico data

Chart 18
Quarterly construction and housing indicators

	07'III	IV	08'I	II	III	IV	09'I	II	III	IV	10'I	II	III
Const. GDP, real. (annual % change)	3.7	5.2	3.9	6.1	3.1	-0.8	-5.3	-7.6	-6.1	-6.7	-3.4	-1.7	0.9
Building	2.6	3.5	2.4	4.3	-0.4	-6.2	-11.6	-14.8	-13.5	-12.5	-6.1	-2.5	1.5
Const. engineering and major works	6.1	8.5	7.2	10.6	11.8	11.7	9.2	7.9	7.9	3.0	0.1	-1.4	-0.8
Specialist const. work	3.1	6.9	3.5	3.1	-2.2	-6.6	-13.3	-13.4	-8.1	-6.5	0.4	4.0	5.2
Const. companies[1] real prod. value (ann. % chge.)	2.3	2.8	0.4	1.9	-1.8	-3.2	-5.0	-6.3	-7.5	-6.5	-4.0	-2.5	0.9
Building	8.6	8.6	5.2	3.1	-4.0	-6.7	-18.6	-19.4	-13.5	-8.3	-5.5	-4.0	-5.0
Public works	-3.5	-2.8	-5.0	0.3	1.1	2.3	18.1	18.4	7.1	1.5	-1.5	-0.9	6.7
Water, irrigation and sanitation	-16.1	-16.8	5.6	28.5	3.4	-9.5	-2.6	6.0	7.3	15.2	10.6	12.1	4.6
Electricity & communications	-10.1	-12.0	3.2	31.7	8.5	32.5	58.0	34.7	26.3	19.5	4.5	0.8	10.7
Transportation	17.3	4.4	12.0	14.9	14.2	13.4	30.0	19.1	4.9	-6.9	-5.8	-0.1	5.5
Oil and petrochemicals	-20.2	-4.4	-29.2	-32.1	-22.7	-20.5	-7.4	14.7	4.3	6.0	0.1	-9.0	8.5
Other	-6.3	-3.6	-4.4	1.9	-1.7	-7.9	-21.5	-37.9	-40.3	-35.4	-12.5	-4.2	4.8

[1] Considers companies which are affiliated and not affiliated to the Mexican Chamber of Construction Industry
Source: BBVA Research with INEGI, and Banxico data

Chart 19
Quarterly housing market indicators

	07'III	IV	08'I	II	III	IV	09'I	II	III	IV	10'I	II	III
Average house price (thousands of pesos*, end of period)													
Segment A	246	250	242	233	229	229	236	240	245	245	244	243	244
Segment B	412	418	410	388	382	376	385	392	397	400	406	399	393
Segment C	866	858	849	800	793	787	808	805	825	830	821	819	830
Segment D	1,953	1,953	1,896	1,837	1,825	1,832	1,986	2,007	2,010	2,010	1,974	1,949	1,940
Segment E	4,914	5,058	4,958	4,800	4,718	4,770	4,821	4,862	5,036	5,014	4,935	4,875	4,845
Average house price per M2 (pesos*, end of period)													
Segment A	5,997	6,033	5,951	5,713	5,675	5,627	5,879	5,976	6,258	6,309	6,208	6,063	6,170
Segment B	7,064	7,133	7,034	6,696	6,637	6,464	6,769	6,836	6,847	6,970	6,941	6,930	6,939
Segment C	8,887	8,900	8,896	8,605	8,428	8,422	8,869	8,885	9,216	9,192	8,967	8,962	9,433
Segment D	13,129	13,019	12,806	12,596	12,323	12,487	14,146	14,264	14,552	14,631	14,265	14,189	14,197
Segment E	20,602	21,134	20,299	19,559	18,541	19,532	22,335	21,950	22,543	22,913	22,358	21,982	21,942
SHF index of housing prices in Mexico													
Annual % change	7.4	6.1	4.5	4.7	5.3	5.7	4.9	2.4	2.0	3.6	3.1	6.1	7.4

Source: BBVA Research with INEGI, and Banxico data

Chart 20
Quarterly housing finance indicators

	07'III	IV	08'I	II	III	IV	09'I	II	III	IV	10'I	II	III
Commercial banks current loan portfolio													
Past-due loans index (%)	3.1	3.1	2.9	3.1	3.3	3.6	3.8	4.3	4.6	4.6	4.6	4.3	4.2

1/ Consider the value of production of companies which are affiliated and not affiliated to the Mexican Chamber of Construction Industry.
Note: Price ranges expressed in multiples of minimum monthly wage (mmwt). Segment A (61-160 mmwt); B (161-300); C (301-750); D (751-1,670) and
E (1,671 and over). Min Monthly Wage (MMW) = 1,667 pesos in 2009 in zone "A", * October pesos 2010
Source: BBVA Research with INEGI, Softec and Banxico data

Chart 21
Monthly macroeconomic indicators

	J.09	A	S	O	N	D	J.10	F	M	A	M	J	J	A	S	O
IGAE (annual % change)	-6.6	-6.9	-5.2	-4.9	-2.1	0.6	3.6	4.0	6.7	6.9	9.2	6.7	5.3	6.4	5.0	
Construction vol. real (annual % change)	-4.2	-7.3	-7.6	-8.5	-5.6	-5.4	-4.8	-4.1	-0.4	-2.1	0.4	-4.6	-2.5	1.4	4.4	3.9
Building	-11.7	-14.4	-14.6	-14.9	-11.8	-10.3	-8.2	-6.8	-2.3	-3.5	-0.4	-5.1	-2.6	2.0	5.8	5.1
Civil engineering and major works	10.8	6.1	5.2	2.0	5.3	2.6	0.4	-0.5	1.2	-1.2	0.9	-4.8	-3.7	-0.4	2.0	1.4
Specialist construction work	-7.8	-10.0	-8.6	-9.9	-5.3	-3.3	-1.7	0.9	1.7	6.5	4.2	1.5	2.5	7.1	7.8	9.3
Formal private employment (IMSS, mills)[1]	13.9	13.9	14.0	14.1	14.2	14.0	14.1	14.2	14.3	14.4	14.4	14.5	14.5	14.6	14.7	14.8
Annual % change	-4.1	-3.7	-3.7	-3.4	-2.2	-1.2	0.0	1.3	2.1	3.1	4.1	4.4	4.5	4.9	5.1	5.4
Averange salary quote[2]	231.5	230.9	229.4	227.9	227.2	227.3	237.2	237.7	234.3	234.0	237.6	237.1	239.0	238.2	236.1	235.2
Real annual % change	-1.3	-1.1	-0.9	-0.8	-1.2	-1.2	-1.4	-2.2	-2.4	-1.8	-1.1	-0.9	-0.4	-0.5	-0.7	-0.8
Real wage income (IMSS, annual % change)	-5.3	-9.3	-8.5	-7.8	-6.6	-5.3	-3.3	-2.3	-0.9	0.3	1.3	1.8	2.7	8.2	8.1	8.7
Minimum general salary (daily, nom. pesos)	53.2	53.2	53.2	53.2	53.2	53.2	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8	55.8
CPI (end of period, annual % change)	5.4	5.1	4.9	4.5	3.9	3.6	4.5	4.8	5.0	4.3	3.9	3.7	3.6	3.7	3.7	4.0
TIIE 28 average (%)	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
10-year Gov. bond interest rate (M10)	8.1	8.1	8.0	8.1	8.1	7.8	7.9	7.7	7.7	7.4	7.4	6.9	6.7	6.3	6.3	6.1

[1] Million (people)
[2] Nominal Pesos per day for the number of members of the Instituto Mexicano del Seguro Social
Source: BBVA Research with Banco de México, INEGI and IMSS data

Chart 22
Monthly construction and housing indicators

	J.09	A	S	O	N	D	J.10	F	M	A	M	J	J	A	S	O
Construction emp. (IMSS, thousands)	1,120	1,121	1,110	1,119	1,120	1,043	1,062	1,085	1,102	1,128	1,141	1,158	1,157	1,178	1,189	1,207
Annual % change	-9.9	-10.1	-10.5	-9.5	-7.2	-5.2	-3.5	-0.8	0.0	2.4	3.8	4.0	3.3	5.0	7.2	7.9
Hydraulic cement prod. (tons, annual % change)	0.1	-8.4	-5.2	-9.4	-7.0	-4.3	-11.7	-6.7	-7.4	-3.0	-4.9	-7.4	-7.8	1.8	3.3	5.7
Cement consum. per inhab. (annual % change)[3]	-4.9	-13.0	-10.0	-14.0	-11.7	-8.7	-15.7	-11.1	-11.5	-7.3	-9.1	-7.4	-7.8	1.8	3.3	4.8
Contruction prices (annual % change)	-1.6	-1.4	-0.9	-1.6	-2.8	-1.0	1.3	2.3	2.7	3.1	4.1	5.3	5.2	4.5	4.0	4.7
Materials (annual % change)	-2.9	-2.7	-2.0	-2.8	-4.1	-1.8	0.8	2.0	2.5	3.1	4.3	5.7	5.6	4.8	4.2	5.1
Labor (annual % change)	3.8	3.8	3.7	3.5	3.1	3.1	3.8	4.2	3.8	3.5	3.5	3.5	3.4	3.4	3.3	3.3
Rent of machiner (annual % change)	7.0	6.7	6.5	3.5	2.4	1.8	1.5	1.0	-0.2	1.0	1.8	1.8	2.6	3.4	3.2	2.9

[3] The volume of cement production is used as a proxy for consumption
Source: BBVA Research with Banco de México, INEGI, and IMSS data

Chart 23
Monthly housing finance indicators

	J.09	A	S	O	N	D	J.10	F	M	A	M	J	J	A	S	O
Comm. banks current loan portfolio (balances, billions of pesos*)	319.7	313.8	316.5	318.4	333.3	337.9	338.6	338.7	338.7	342.1	346.7	349.7	352.6	353.2	353.7	354.3
Annual % change	4.2	3.0	3.5	2.9	7.3	10.6	9.7	9.2	8.3	9.4	9.6	10.0	10.3	12.6	11.8	11.3
Mortgage Sofoles loan portfolio (balances, billions of pesos*)	54.2	53.8	53.1	52.7	52.5	19.9	19.7	19.8	19.6	19.7	19.6	19.5	19.3	19.1	19.0	18.8
Annual % change	-34.9	-36.2	-37.1	-6.9	-6.3	-64.6	-65.1	-65.0	-65.0	-64.9	-64.5	-64.4	-64.4	-64.4	-64.3	-64.3
Total annual cost (CAT)	14.74	14.79	14.77	14.80	14.89	14.74	14.75	14.75	14.75	14.73	14.22	14.17	14.11	14.11	14.14	14.05

* October 2010 pesos
Source: BBVA Research with Banco de México, INEGI, and CNBV data

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