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MEXICO

TECHNICAL NOTE

HOUSING FINANCE

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ACRONYMS

APRC: Annual Percentage Rate of Charge

CNBV: Comisión Nacional Bancaria y de Valores

CONAVI: Comisión Nacional de Vivienda

FONHAPO: Fideicomiso del Fondo Nacional de Habitaciones Populares

Fovissste: Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado

GMMW: General Monthly Minimum Wage (30.4 times the general minimum daily wage, i.e. 2,220 Peso in 2016)

ICAAP: Internal Capital Adequacy Assessment Process

IMSS: Instituto Mexicano del Seguro Social

INEGI: Instituto Nacional de Estadística y Geografía

Infonavit: Instituto del Fondo Nacional de la Vivienda para los Trabajadores

ISSFAM: Instituto de Seguridad Social para las Fuerzas Armadas Mexicanas

ISSSTE: Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado

LTV: Loan-to-Value

MOF: Ministry of Finance

RIF: Régimen de Incorporación Fiscal

RISS: Régimen de Incorporación a la Seguridad Social

SEDATU: Secretaría de Desarrollo Agrario, Territorial y Urbano - Ministry in charge of the country geographic dimension of development, including rural and urban land

SEDESOL: Secretaría de Desarrollo Social

SHF: Sociedad Hipotecaria Federal

SOCAPS: Sociedades Cooperativas de Ahorro y Préstamo

SOFIPOS: Sociedades Financieras Populares

SOFOL: Sociedad Financiera de Objeto Limitado

SOFOM: Sociedad Financiera de Objeto Múltiple

STC: Simple, Transparent and Comparable securitization

EXECUTIVE SUMMARY

Mexico, with already 120 million inhabitants, continue to experience a dynamic demographic growth leading to high housing needs. Despite a strong housing production, which helped reduce the housing shortage thanks in particular to the credit-linked subsidy programs developed since 2007, the deficit remains significant, affecting nearly 9 million households. This reflects (i) the large number of abandoned or unused houses that were built in ill-serviced peri-urban development; (ii) the difficulty for a major part of the population to access decent housing. Both shortcomings are linked to characteristics of the housing finance system, i.e. the inducement of large scale developments ill -suited to housing needs by the subsidized lending activity of the two housing provident funds, Infonavit and Fovissste ("the Institutes"), and (iii) the lack of access to finance of households nonaffiliated to a social security system. A new housing policy has been developed in 2013 that emphasizes a new urban expansion model based on the proximity of jobs and the availability of infrastructure and services, to which the allocation of subsidies is linked. This opens new territories for the mortgage market, which in parallel must fill a large population coverage gap in a safe and sound way.

Outstanding mortgages have been steadily growing after the financial crisis of 2008-2009, to reach 12% of GDP in 2015. This growth is due to the increase of loan amounts, not their number, the result of the decline of interest rates and the increase of incomes and prices – the latter reflecting a trend towards higher quality housing and not bubble-like imbalances. There are basically two categories of primary lenders: two housing provident funds, Infonavit and Fovissste (the "Institutes"), which provide about ¾ of the new loans (2/3 for Infonavit); and commercial banks. There used to be a dynamic sector of non-deposit taking, non-regulated specialized lenders, the Sofoles/Sofomes, which nearly disappeared during the crisis, and includes now just a handful of small, independent institutions. A sectoral development bank, SHF, was created in 2002, to foster affordable housing finance, and especially to develop secondary mortgage markets by supporting lenders, such as the SOFOLES/SOFOMES, to mobilize long term funds. Since the crisis, SHF re-oriented its activities towards a countercyclical support to developers 'finance, insurance of high LTV mortgages and support to Fovissste. Efforts to promote housing credit by the "financial popular sector" (SOCAPS and Sofipos), which serve households outside the social security systems, largely failed for various reasons, in particular lack of capacity of many small institutions, regulatory restrictions and high potential funding cost – including SHF lending.

Loans have typically a 20 year maturity and fixed rates, and are now near exclusively denominated in Pesos, after a long period of indexation to the minimum wage (the Institutes) or the CPI (Sofoles/Sofomes), a feature that has been interrupted by regulation or market practices. A diversification of products has been developing, in particular with very much needed loans for renovation/ improvement of housing. "Green mortgages" and, more recently, finance for rental investment, are also offered, especially by Infonavit. Unsecured loans are expensive, in particular micro-credits for housing. The main market gap is the finance of self-construction or self-production, although it is the main source of affordable supply.

The quality of lending, one of the factors behind the fall of the specialized lenders, has noticeably improved after the last crisis thanks to prudential measures by CNBV and favorable macro-economic developments. This applies to banks as well as to the Institutes – who have an obligation to lend but adjust the amount of loans to their affiliates' ability to repay. The Institutes are still bearing the legacy of heavy delinquencies in the past, but have a policy of extremely ample credit provisioning, an indicator of their profitability. The highly

impaired portfolios of Sofoles/Sofomes are now held by SHF. Some market practices by banks – e.g. LTVs of 100% or more, high debt-servicing -to income ratios or large use of brokers for originating loans- raise stability issues.

The market is highly compartmented, with banks hardly lending to households who earn less than 6 Minimum Wage (2/3 of them), while the Institutes largely focus on these groups. A very well thought-out credit-linked subsidy program, deployed since 2013, provides assistance to lower income groups for investments in the new planned urbanization areas. However, like previous programs, it accentuates the compartmenting of the market between distribution channels. And although lower wage earners have a better access to housing finance than in many countries, there is still a large coverage gap by the housing finance market, i.e. categories that are not part of any social security system and to which banks do not lend: independent workers, salaried of small enterprises or of families, and employees of local government.

The compartmenting of the market limits competition between the two categories of lenders, which cooperate through joint lending in the middle income segments. It also contributes to some inefficiencies evidenced by high gross intermediation margins and significant ancillary charges, in the case of both banks and the Institutes, as shown by a 2014 study of the Competition Commission COFECE. The Institutes, which enjoy captive customer bases and can afford to pay generous conditions on the MBS they issue, largely contribute to this situation. The silver lining of this structure is their ability to cross-subsidize lower income borrowers – Infonavit in particular now provide cross-subsidies that reduce the borrowing cost of households earning less than 6.5 Minimum Wage to the equivalent of a 8% mortgage, against 12% for non-subsidized loans. The government took steps to enliven competition, in particular by subjecting the Institutes to general prudential rules, successfully inducing refinancing activity through new legal provisions, and limiting prepayment penalties. The key challenge in opening the mortgage market is however to manage increasing efficiency without reducing the access of lower income groups to affordable finance.

On the funding side, the relatively high contribution of the capital market (10% of mortgage lending) is of little help to the private sector since it is captured by the Institutes, especially Fovissste, and is expensive. Given liquidity constraints among all categories of lenders, further market developments are conditioned by the availability of more external resources.

The Mexican context do offer valuable opportunities for such developments: the untapped investment potential among institutional investors; the government programs aimed at integrating much more households in the formal sector; the positive impact of the new housing policy on the volume and soundness of lending for housing; the capacity of producing affordable housing; and the on-going creation of a “bad-bank” thanks to which SHF will restore its market support capacity by off-loading its large impaired portfolios.

Against this background, the policy recommendations are to:

- Develop a government-backed risk-sharing scheme for low income borrowers, and especially households who are not part of a social security system. Such an instrument, which has not been tested in Mexico yet, is better suited for deepening the market than high LTV insurance, and could be a game changer in attracting banks and social financial institutions into the very large underserved market segments. It could be potentially funded by phasing out some old and little efficient housing subsidy programs. Great caution would however be required in designing a guarantee mechanism, given the risks it can generate.

- Use credit to support inclusive urban and housing developments. There is room to improve the linkage of credit with the affordable housing goals, in particular through new business models involving partnerships between banks and developers or financial cooperatives and social builders, and by promoting formal, large scale self-production developments.
- Re-orient SHF's activity towards its mandate of developing affordable housing finance provided by the private sector, a goal that needs to be adjusted to a context that deeply evolved, and to which a support to Fovissste is not clearly related. A new strategy could include financial support to land-development, a gap in the supply chain today; support to new institutions and innovations targeting the mortgage market gaps, in cooperation with other agencies familiar with these segments; more attractive financing conditions by lowering margin requirements; and management of the proposed guarantee fund(s). This reorientation may require some institutional adjustments in the way SHF's strategy is determined, as well as the building of new capacities.
- Develop new market funding instruments for mortgage lending that can break the current cost threshold. Two instruments, which are, or have been, considered, should be assessed: a simplified and standardized MBS; and covered bonds. For the latter, international experience shows that the issue of depositors 'subordination can be addressed and should not constitute an insurmountable obstacle to the creation of a secured debt instrument. In parallel to such a reform, new prudential regulation should be passed, and the potential of the under-used Hito platform better employed.

INTRODUCTION[1]

1. **Housing needs are high in Mexico despite quantitative progress in the last 10 years.** Mexico, which now is home to 120 million people, continues to enjoy a fairly dynamic demographics (+1.1% growth p.a. globally), especially in urban areas where 76% of the population live. Housing needs are therefore high. The production of new homes has been strong in the last 10 years, fostered in particular by a new subsidy policy since 2007 and supported by the existence of very large developers: around a million units are built each year, when the number of new households formed each year is slightly around 800,000. Therefore, the overall housing deficit decreased, but it still remains high –the last survey by the Statistic Institute INEGI[2] estimated that, in 2014, out of 31.7 million households, 8.9 million suffers from a quantitative or qualitative housing deficiency (against 9.7 million in 2012).

2. **Global data hide mismatches between housing demand and supply.** First, urban growth relied for a long time on a pattern of urban sprawl, with mass-scale developments of individual units were built outside cities where land is affordable, but far from jobs and services and with related high transportation cost. As a result, there are reports that a considerable portion of these units, often bought by low and low/middle income groups, were left unused and are vacant or even abandoned[3]. Since 2013, a new urban and housing policy has been designed and implemented that aims not only at reducing the housing shortage, but at ensuring that urban development takes place in a better planned approach, in areas where jobs, infrastructure and services are available and with higher density standards. Second, the housing shortage affects some household categories more than others**.** The two main inequalities are between urban and rural or semi –urban areas (over 60% of the deficit), and between households who are affiliated to one of the social security systems and those who are not: the proportions of households living in poor housing conditions are 25% and 75% in these two categories respectively[4].

3. **The housing finance system has been contributing to these mismatches.** The way the two housing provident funds that dominate the mortgage market used to function was an inducement to the urban sprawl pattern. On the supply side, they were acting as demand aggregators for developers, warrantying that projects would meet the effective demand of purchasers qualified to borrow mortgage loans, and would thus avoid market risk largely irrespective of the location of the projects. On the demand side, households were incentivized to take out loans at below market conditions to which they were entitled once in their lifetime. The old subsidy policies rather amplified the imbalances than corrected them. These policies also did little to induce an expansion of the housing finance system towards underserved categories.

4. **A new housing policy has been developed since 2013.** The new policy was outlined in February 2013, and two national 2014-2018 Programs for Urban development and Housing were approved in 2014. They rely on a new urban development model, aimed at preventing, or "containing" the disorderly growth of city fringes. Key orientations are to promote an urban expansion that (i) is more compact through higher density standards (more "vertical " development with multi-story buildings), and (ii) takes place in locations close to economic activities and jobs opportunities, with access to infrastructure and

[1] This Technical Note was written by Olivier Hassler, WB external consultant.
[2] Within the "Enquesta Nacional de Ingresos y Gastos de loa Hogares 2014".
[3] Some sources estimate the number of vacant or abandoned houses to 5 million.
[4] Source: CIDOC /SHF Estado Actual de la Vivienda in Mexico, based on SHF calculation.

services. To this end, controlled expansion areas, the “Perimetros de Contencion Urbana “(PCUs), have been designated in numerous cities as the focus of an integrated development approach. PCUs are classified in 3 categories depending on their location (PCU 1 = urban areas, PCU 2 and 3 = urban periphery and transitional areas) and land use planning. The housing subsidy policy has been revised in 2014 to align the allocation of subsidies with urban policy objectives. Fiscal incentives were moreover given to developers in 2015 in the form of VAT exemption for residential developments and the spreading the income tax over the years in case of installment sales.

5. **Housing finance has a critical role to play to support a more balanced urban development and to help improve living conditions.** The shortcomings of housing finance for housing system have been recognized by the Mexican government and the public Authorities responsible of the housing sector. Finance - in particular the access to it of the large excluded population - has been made a key component of the integrated housing policy. It is also an opportunity for the financial sector to expand in huge, and critical, market segment. But it is also a challenge, all the more so that these potential developments must be achieved in compliance with soundness and financial stability conditions.

HOUSING FINANCE MARKET OVERVIEW

6. **The overall supply of finance for housing has recovered from the 2008-2009 financial crisis and resumed a significant progression** since then, despite the quasi-disappearance of non-deposit taking specialized lenders, the mortgage Sofoles/Sofomes, which had played a significant role in maintaining a private sector activity after the crisis of the second half of the 1990s. Total outstanding residential mortgage loans increased by 37% from 2011 to 2015, an average of 8% p.a., and reached 12% of GDP in 2015, as against 11% in 2011. Table 1 shows the growth of the supply (outstanding loans), most of which is now provided by the two housing funds, Infonavit and Fovissste, to which salaried employees who are part of the social security systems – for private sector and public sector respectively-, and by commercial banks. A second tier institution, Sociedad Hipotecaria Federal (SHF), a MOF agency created to support the market development and especially help fund Sofoles/Sofomes, owns mortgage portfolios as a result of this latter activity:

Table 1: Size and structure of the Mexican mortgage market[5] (amounts in thousands Peso at year end)

	2011	2012	2013	2014	2015
Infonavit	795,404	875,418	937,541	1,011,836	1,098,168
Fovissste	138,999	142,992	139,379	140,013	154,283
Public Institutes	934,403	1,018,410	1,076,920	1,151,849	1,252,451
Commercial banks	412,206	452,860	512,865	562,608	623,205
Sofoles / Sofomes (non- consolidated)	21,527	20,043	5,130	4,670	4,604
Primary lenders	**1,368,137**	**1,491,312**	**1,594,915**	**1,719,127**	**1,880,260**
SHF and other development banks (in particular Banjercito)	30,239	34,641	34,824	31,057	30,844
Securitized loans	191,020	202,326	207,041	211,385	259,952
Total	**1,589,395**	**1,728,279**	**1,836,780**	**1,961,569**	**2,171,056**

Sources: CNBV (Boletines Estadisticos), Banxico. For RMBS: Moody's, Standard & Poor's

Methodology notes: 1) Sofoles /Sofomes: it is assumed that housing loans data only include retail lending (official data do not specify this, but it is implicit in annual reports); non-regulated lenders after 2013 (Sofomes - non ERs), for which there is no public data, are not included – their lending can be deemed to be of marginal size; also, the 2013 CNBV figure for non-consolidated Sofom -ERs, which is 0, has been replaced by Metrofinanciera's portfolio value from its annual report, the only significant entity that is not consolidated with a bank.

2) SHF and other development banks: data for direct holding of loans only, excluding refinancing loans and MBS. SHF's portfolio holding of acquired mortgages amounted to 22.3 at the end of 2015.

3) securitized loans: the value of underlying portfolios is only known for 2015; for the preceding years, data reflect the amount of RMBS outstanding, which underestimates the loan portfolios due to overcollateralization.

7. **The number of new loans originated each year has been however fairly stable or slightly diminished over the last 10 years.** Table 2 shows the number of mortgage loans originated each year, without loans for housing improvements, large in numbers (e.g. 294,000 extended in 2015 by Infonavit) but not in value[6] :

Table 2: Number of mortgage loans to households (in thousands)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Infonavit	421.7	458.7	494.1	447.5	475.0	445.5	421.9	380.6	387.0	396.0
Fovissste	76.6	68.4	90.1	100.1	87.8	75.2	64.3	65.9	63.1	64.4
Banks and Sofoles/Sofomes	172.6	198.6	162.3	85.2	76.9	78.6	84.8	91.3	95.4	141.8
Adjustment*	73.7	79.2	80.8	39.4	30.7	23.4	16.7	25.3	32.6	19.5
Total	597.1	646.5	665.6	593.4	609.0	575.9	554.3	512.5	512.9	582.7

*double accounting (some loans in partnership between banks and the Institutes)

Source: Banxico and BBVA research Situacion Inmobiliaria 1st semester 2016

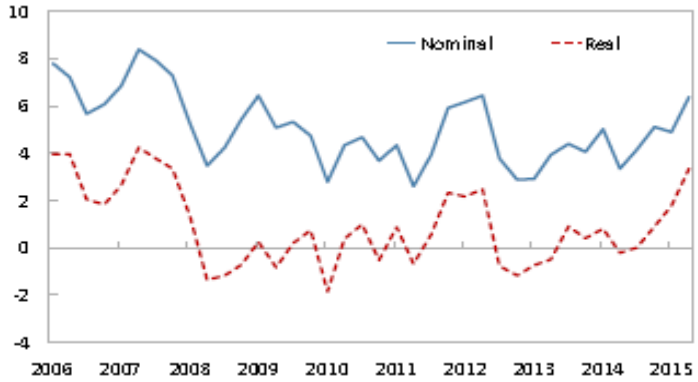
8. **The growth of the market size despite the stability of the number of loans suggests that better, higher priced housing has become affordable to more households.**

[5] Outstanding balances. Home improvement loans, which are mostly unsecured, are not part of these data.

[6] Official data equate mortgages with loans for acquisition or construction of houses.

It is likely that the combination of fairly stable housing prices in real terms nationwide[7]– their increase per year has remained between 0% and 2% -, income progress and decrease of unemployment, as well probably as the resumption, since the crisis, of the growth of remittances that are often used in connection with housing loans, have enabled households to relatively go up market and buy larger, better quality homes.

Figure 1: Housing Price index



Source: SHF reproduced from IMF Article IV report November 2015.

9. **The improvement of lending conditions also increased the affordability of finance.** The main development has been the decline of interest rates. Paralleling the trend of 10 years treasury bonds yields, conditions of housing loans by banks (in Peso) decreased from 11% /12 % in early 2011 to 8% -10% mid-2016. Maturities were moreover lengthened: their average was 21 years in 2015, and even 23 years for mortgages to the lower income segment[8].

The government's role in the supply of housing finance in Mexico

a) Lending: 2 provident funds, Infonavit and Fovissste lend to salaried employees affiliated to the social security systems, IMSS for the private sector and ISSTE for federal public servants respectively. Employers must contribute 5% of wages to individual "housing sub-accounts" managed by the two entities. These sums can be used by the beneficiaries as downpayment, then repayment of mortgages extended by the Funds, a form of significant subsidization, which motivates to the loanable amounts. In the case the sub-accounts are not used for this purpose, they become a source of pension upon retirement. Infonavit is run by a tripartite body– government, employers and trade unions

b) Subsidies: the government has a long-standing policy of allocating direct demand housing subsidies to lower income households

c) Funding: A housing Development Bank, Sociedad Hipotecaria Federal, was created in 2001 to promote the development of the private sector mortgage market, and the access of lower income groups to this financial service. Beside working on the improvement of the lending environment (e.g. creation of a price index, organization of the appraisal industry), SHF focused on the mobilization of long term funding for mortgage lenders, and more specifically to the non-deposit taking specialized institutions, the Sofoles and Sofomes. This has been done through direct lending or credit enhancement on MBS. SHF was also entrusted in the management of a hedging instrument covering lenders against the basis risk between the indexes used for loans (minimum wage) and for capital market investors (CPI)

d) Guarantees: SHF developed two kinds of guarantee products: mortgage insurance for high LTV loans (partially re-insured by private insurance companies); and portfolio guarantees for securitization purposes. The federal government explicitly guarantees the debt issued by SHF

[7] The actual appreciation can considerably vary between regions and urban areas.
[8] Banxico" Indicadores Basicos de Creditos a la Vivienda" December2015.

10. **The macro-economic context allowed the desindexation of housing finance, a major change relatively to the 20-year period delimited by two financial crises**. On the same backdrop, the delinking of loan balances from the minimum wage to which a majority of them was indexed, was finally generalized, a project that had been contemplated and prepared for several years. It required a constitutional amendment to discontinue the use of the minimum wage as a unit of account in the Mexican legal system. The amendment was adopted in January 2016 through the "Decreto por el que se declara reformadas y adicionadas diversas disposiciones de la Constitución Política de los Estados Unidos Mexicanos, en materia de desindexación del salario mínimo". The explicit target of the change was the lending activity of the public sector housing lenders, Infonavit, Fovisssste and SHF. Infonavit and Fovissste ("the Institutes") had anticipated the move – an amendment to the Infonavit law opened the Peso option in 2012. Fovissste launched a new Peso product financed by SHF in 2014, while since 2015 Infonavit only lends in Pesos. A new CPI-linked index, the UMA (Unidad de Medida y Actualización , applies to the existing stock of indexed loans, which must be adjusted by the lesser variation of the minimum wage or the UMA - mostly impacting the Institutes. Virtually all lending for housing by commercial banks is done in Peso[9]. The remaining CPI indexed (UDI) housing loans are in the legacy portfolios of Sofoles/Sofomes.

11. **Infonavit and Fovissste continue to be the major mortgage lenders.** The Institutes have maintained their dominant share of the market throughout its transformation. In 2015, Infonavit's share of new mortgages for acquisition or construction was 68% in number of loans and 42% in terms of amounts,[10] while Fovissste's share was 11% and 14% respectively. Mortgage lending by the two provident funds involves, for borrowers: a right to borrow and a subsidy from their employers amounting to 5% of their wages; and, for lenders, repayments through payroll deduction as well as special collection powers.

12. **The conditions of Institutes' activities have evolved in the last 10 years, in particular through cooperation agreements with the private sector, and the "desindexation" of their loans.** Housing loans in co-participation or co-financing with private lenders -50,000 to 70,000 transactions a year, or 10%-15% of originations overall- have allowed the Institutes to enter higher-income segments, and alleviate some of their liquidity constraints. For banks, the benefit of these partnerships is to access a very large population -often below their main income targets- with secured underwriting and servicing procedures. Although about 10 private lenders are participating in these partnership, 4 banks[11] represent 95% of the corresponding lending activity. Beside this cooperation, Institutes are active in the middle-income segment with their own products. For 2016 the maximum lending amounts were MXN 981,000 for Fovissste and MXN 921,000 for Infonavit – who lifted up considerably this ceiling in 2015 from the previous MXN 483,000. Infonavit's law was amended three times recently. In 2012, the main innovation was to allow affiliates to borrow twice in their life time. In 2014, housing sub-accounts were made portable towards other social security systems. Early 2016, following the pesofication of lending, the remuneration paid on housing sub-accounts[12] was changed from an "inflation plus" rule to a remuneration based on the returns of the Institute's assets, to ensure its

[9] The only bank loans indexed to the minimum wage were those done in partnership with the Institutes.
[10] Excluding home improvement loans.
[11] Banamex, Santander, Mifel and Scotiabank.
[12] Individual savings accounts dedicated to housing investment in the Social Security systems, to which the employers' contributions are paid – and can be complemented by voluntary savings. If not used for housing purposes, the accumulated balance in these accounts is used serve additional pension to retirees who receive a pension under the 1997 law.

financial balance. Fovissste developed in 2014 a new, Peso denominated loan, co-financed by SHF[13] (or, theoretically, other financial institutions)[14]. The affiliates housing sub-account can be used for the downpayment (5% minimum). Fovissste lends the equivalent of the housing sub-account, and the partnering institution (SHF) the bulk of the loan. Credit risk is borne by the partner. Interest rates are fixed, and currently run at 9%, having been adjusted from the initial 10.25%. Fovissste added the second loan option to its range of products in 2016.

13. **The mortgage Sofoles /Sofomes sector largely disappeared following the 2008-2009 financial crisis.** The crisis evidenced the vulnerability of non-deposit taking, non-regulated specialized institutions. On the assets side, (i) the lack of customer bases obliged these entities to rely on a on intermediaries to sell mortgages – largely developers, for whom selling units was a more important criteria than the creditworthiness of their customers; (ii) they were often active on market segments between banks and the Institutes, i.e. moderate income groups (5 -7 MW typically), as well as UDI denominated loans—a feature linked to their reliance on the capital market as a funding source that however turned out to be another factor of credit risk. On the liability side, although Sofoles/Sofomes were SHF's major sector of intervention through funding and credit enhancement, the goal was to drive specialized lenders to capital market funding – mainly through securitization, but in fact also by issuing significant volumes of cheaper, short term debt. This implied that investors 'confidence in the quality of their portfolios was critical, and when it appeared that these portfolios were growingly impaired, with NPL rates often nearing 30%, the liquidity taps were turned off for these institutions. The mistrust towards securitization following the sub-prime crisis, then the global financial crisis in 2008-2009 of course did not help. Several institutions, including the largest ones, fell between 2010 and 2013; others were bought by banks or partially by SHF.

14. **An amendment to the General Law of Credit and Auxiliary Organizations and Activities removed the category of Sofol**. After July 2013, Sofoles that decided to continue their activity had to convert themselves in banks, Sofipos or Sofomes –a majority of surviving mortgage Sofoles chose the latter option. Since 2014, Sofomes must be regulated by CNBV ("Sofomes ER" if they issue debt securities, or are linked to banks, Sofipos, Socaps, Sofincos or credit unions. They also can voluntarily elect to be regulated in other cases. The conditions of the regulations are set out by the General law of credit and auxiliary organizations and activities (Ley general de Organizaciones y Actividades Auxiliares del Credito). Regulation varies according to the entities 'activities, and can include requirements about credit provisioning, capital adequacy, risk diversification, governance rules, and financial information. Non-regulated Sofomes are subject to obligations regarding consumer protection (CONDUSEF rules), reporting to credit bureaus, anti-money laundering – a relevant concern in the case of real estate transaction- and anti-terrorism-funding.

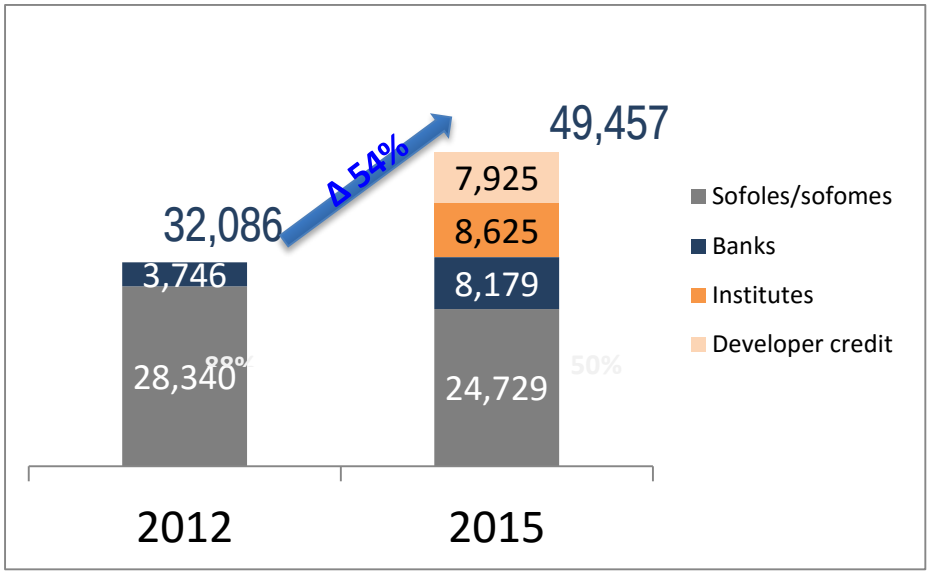
15. **Surviving Sofomes focus on "niche" activities.** There is only half a dozen regulated Sofomes with a retail lending for housing activity. Three are independent – the main one, Metrofinanciera, being partially owned by SHF and only lending to developers now-. Two new entities started lending in 2015-, and two others are part of one banking group, Santander. Retail lending activity is mostly done in partnership with the Institutes. More important business lines are developer credit and loan servicing, especially to manage loan administration services, including the Hito platform, which might be too many for the size of the MBS market.

[13] To stay formally compliant with its second-tier financier mandate, SHF provides this funding through trustees.
[14] Board decision of June 27, 2014.

16. **SHF reoriented its activities following the demise of the Sofoles/Sofomes, without a totally clear systemic justification in some cases.** SHF was created in 2001 as government-owned second tier institution and development bank to provide long term funding to mortgage lenders through refinancing loans and securitization, and to promote risk management tools (mortgage insurance and portfolio guarantees) as well as market infrastructure components (e.g. price index, data base, appraisers' industry). It became an investor holding the majority of Sofoles/Sofomes mortgage portfolios since 2010, as a result of repayment in kind of loans extended to the specialized lenders that SHF was supporting[15], as well as (i) an earlier commitment to buy a significant share of sectoral MBS (Borhis) on the primary market, (ii) an attempt to become a market maker for Borhis, making SHF in fact the sole buyer of these securities[16], especially during the financial crisis.

17. **On the primary market, since the disappearance of most of the sector, SHF only refinanced new mortgages** for only MXN 5.3 billion in 2015 (out of about MXN 300 billion total originations). The agency re-directed its activity on 3 areas: (i) the revival of developer credit (see below) through direct lending and the provision of guarantees for loans to developers, a countercyclical intervention that is progressively being replaced by the resumption of bank lending; (ii) mortgage insurance supporting high LTV retail loans by banks; and (iii) support to Fovissste in several ways: refinancing of the new peso denominated mortgages, warehouse line as bridge finance anticipating securitization – SHF provided a third more liquidity to Fovissste than to banks in 2015- , and credit enhancement to Fovissste's RMBS. Opting for the latter business line may have been motivated by profitability objectives: SHF had to provide for the high NPL rate of the portfolios it now holds, its net result has been negative since 2013. From a systemic and development point of view however, the rationale for a public development bank to support a public provident fund serving public sector employees can be questioned.

Figure 2: SHF operational assets (amounts outstanding at year end in million Peso)



Source: SHF
Data include developer credits.

[15] "Dacion en pago, about MWN 22.5 billion at the end of 2015. The credit risk in these portfolios was already assumed for a part by SHF through its mortgage insurance activity.
[16] SHF's holding of RMBS was about MWN 25 billion at the end of 2015.

18. **Lending for housing is a growing activity in the commercial banking sector.** The extension of housing loans by banks had been drastically affected by the tequila crisis at the end of the nineties, with the halving of the portfolios between 1994 and 2000, and again, but to a lesser extent, by the 2008-2009 financial crisis. Home loans outstanding had fallen to 13% and 14% of their overall credit to the non-financial private sector in 2000 and 2008 respectively. Since the last crisis, this portfolio has been growing again at a hefty 14% per year and its share of the credit to the non-financial private sector has stabilized at 19%-20% (non-performing loans excluded), and around 16% of banks' total credit.

19. **This growth has been partially driven by changes in the market structure**. Two factors have played a special role in this growth: (i) the demise of Sofoles/Sofomes, since several of them were bought by banks and are now consolidated with them; (ii) the success of the lending in partnership with the Institutes. In addition, several new comers entered the mortgage market in the last 10 years, including Inmobiliaro Mexicano or ABC Capital[17]. Still, the overall market development is largely due to the growth strategy of three lenders[18].

20. **The extension of housing loans by the "popular financial sector" has not taken off as expected.** This sector, which reaches out to populations and areas that mainstream banks do not serve, is growing. The number of cooperatives went from 56 in December 2010 to 144 in June 2015[19]. It has been a long endeavor by SHF –starting with a pilot program in 2005- to support the development of housing loans by these financial institutions. This development has been however limited:

Table 3: Housing loans by SOCAPS and Sofipos – amounts outstanding at year end (million Peso)

	2011	2012	2013	2014	2015
SOCAPs	2,263	2,320	2,672	3,039	3,317
Sofipos	328	359	467	663	532
Total	4,602	4,691	5,152	5,716	5,864

Source: CNBV

These entities face several obstacles: (i) gaps that still exist in the property rights (persisting ejido land tenure for instance) and registration systems in the geographic areas – small cities, rural areas- where these institutions are active, which prevent them from securing loans as would be required by long term credit; (ii) regulatory maturity restrictions: up to 5 and 8 years for SOCAPS and Sofipos of categories I and II respectively. These limits are however lifted if housing loans are funded by SHF, the case for only a minority of institutions; (iv) insufficient operational capacities to lend medium or long term loans for housing; and (v) long term funding. Liquidity is not scarce for the largest institutions, but they do not have easy or cheap access to long maturity resources. SHF does have refinancing agreements with 11 Sofipos and Socaps, but this resource, which is considered as expensive, is little used – less than half of the agreements are actually activated.

PRODUCTS AND LENDING CONDITIONS

21. **Mortgage loans by regulated lenders (banks and Sofom-ERs) are basically all done at fixed rate,** with maturities typically of 20 years in the case of acquisition or construction of new units. The main range of interest rates goes from 8% to 10.5%, with a

[17] Also, some Sofomes and Credit Unions converted themselves in "Bancos de nicho", but probably with little impact on the size of the market.
[18] BBVA Bancomer, Banorte, Banamex.
[19] Source : Politica Nacional de Inclusion Financiera June 2016.

pricing adjusted to borrowers' risk profiles. Improvement/renovation loans are considerably more expensive – 17% on average in 2015[20].

22. **A diversification of mortgage products both to meet specific needs and to increase the affordability of finance has taken place.** A significant share of housing loans are financing home improvement in Mexico, in aggregate, 40% in number (but less than 5% in Peso values[21]), a considerable increase since 2012. The Institutes put a special emphasis on this area. In the case of Infonavit, who is very pro-active in diversifying its products range, and emphasizes on housing quality much more than before, 43% of the number of loans originated in 2015 are for housing improvement or renovation, against 11% in 2011. In the banking sector, loans for housing improvement largely outnumber traditional mortgages according to a recent Banxico's study[22] - see Annex. Given the size of this production, it is possible that some housing improvement loans are in fact just consumer credit[23].

23. **Products with affordability enhancement features have started being offered**. Some banks have been offering initial adjustable rate phase or gradually increasing repayment schedules, beside straightforward fixed rate mortgages, not only Fovissste. Environment friendly housing is a goal of the national housing policy, also Infonavit's products are available for this purpose (hipotecas verdes). Infonavit for instance provides additional loan amounts to finance the extra-cost of energy savings investments. Home equity loans are available, while reverse mortgages, which provide income streams to older peoples who are "asset rich" but cash poor, are being prepared. .

24. **Rental housing has been receiving a new attention by the public sector institutions**. Infonavit recently developed a product -mostly as a pilot program at this stage- for the upgrading of units to be rented out, an attempt to address the issue of vacant or abandoned houses. SHF started offering a direct financing for rental investment.

25. **Small, unsecured housing loans are available outside mainstream banks, but are expensive**. Home extension or improvement is the most common purpose of housing loans extended by the Sofipos and Socaps. Their typical profile includes amounts around MXN 50,000, 1 to 3 year maturities and fixed interest rates on declining loan balance that often reach or exceed 35%. Few institutions offer microcredit specifically for housing. This is the case however of the large and successful micro-finance bank –previously a Sofol- Compartamos, which lends to existing customers housing loans from 6 to 24 months, MXN 8,000 to 30,000 (US$ 450 to 1,650) with a 82% flat interest rate.

26. **Developer finance, which had stalled, resumed thanks to SHF countercyclical action.** This critical contribution of the financial system to housing production was deeply affected by two factors[24]: the demise of Sofoles/Sofomes, which were particularly active in this area given the fact that developers were a major distribution channel for their mortgages; and the failure of the 3 biggest Mexican developers early 2013. This failure was due to a large extent to the vulnerability of their business model in a changing environment: big developers in Mexico used to conduct mass- scale projects, especially targeting Infonavit and Fovissste's affiliates; in this perspective, they used to build up large land banks, which tax

[20] Banxico: Indicadores Basicos de Crédito a la Vivienda December 2015.
[21] Source: INEGI.
[22] See Annex I.
[23] However, improvement loans that benefit from housing subsidies –also a significant number of the latter - can be considered as really been taken out for their stated purpose.
[24] Also, some securitization of developers' loans took place before the crisis, an option that came to a halt with the private label securitization activity.

and accounting regimes encouraged[25], and borrowed for this purpose. Excessive anticipation of demand led developers to incur high carrying costs, and exposed them to a change of land use and the decline of land values. This is what happened with the new urbanization model. The change of zoning rules and subsidy policy triggered the depreciation of land banks outside PCUs and was one of the main factors that precipitated the large developers into bankruptcy.

27. **SHF stepped in to ensure the continuity of financial flows to support the housing supply**. This occurred mostly in two ways: lending directly to developers, and guaranteeing developer loans extended by banks. The production of these two products in 2015 reached MXN 15.7 billion and 22.7 billion respectively, and SHF became the first player in this market with a 16% share. This intervention should be progressively phased out in parallel with the recovery of the developers' sector and the resumption of bank lending.

28. **Finance for owner-driven construction remains largely insufficient.** Self-construction (by the households themselves) and self-production (by builders or artisans, directly working for households) represent about half of new construction per year. However, they benefit from a very small share support by the banking sector:

Table 4: Bank lending to self-construction/ production in 2015 (sample of around 2/3 of the market)

	Number of loans	Total amount (MXN million)	Average amount (MXN)	Average maturity (years)	Average interest rate
New lending	3,195	3,687	1,563,404	16	9.8%
Loans outstanding at year end	11,050	11,887	1,339,036	16	10.2%

Source: Banxico Indicadores Básicos de Créditos a la Vivienda December 2015.

Based on this sample, this important source of supply was supported by less than 3% of the total number of housing loans for acquisition and construction extended by banks in 2015, and hardly more than 2% of the number of their stock at year end.

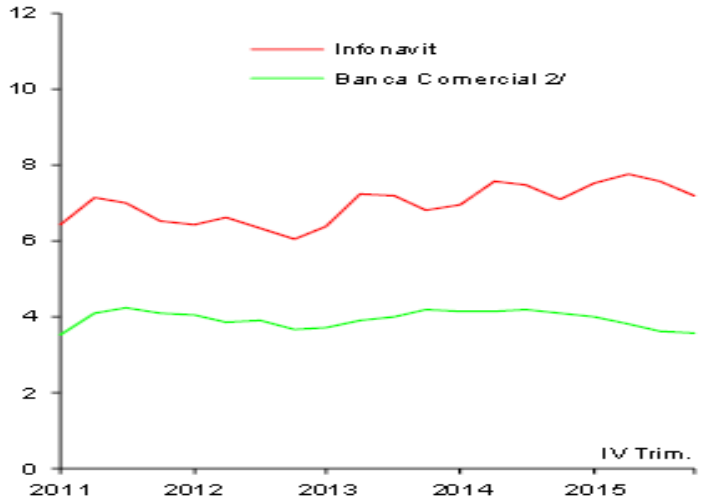
Infonavit developed a product for self- production and for the construction of basic, extendable houses - with quality insurance requirements-, still in a pilot stage.

CREDIT RISK MANAGEMENT

29. **The quality of assets in the mortgage sector has improved after the 2008-2009 crisis, and stabilized since, as the result of financial policy measures and of the improvement of the macro-economic context:**

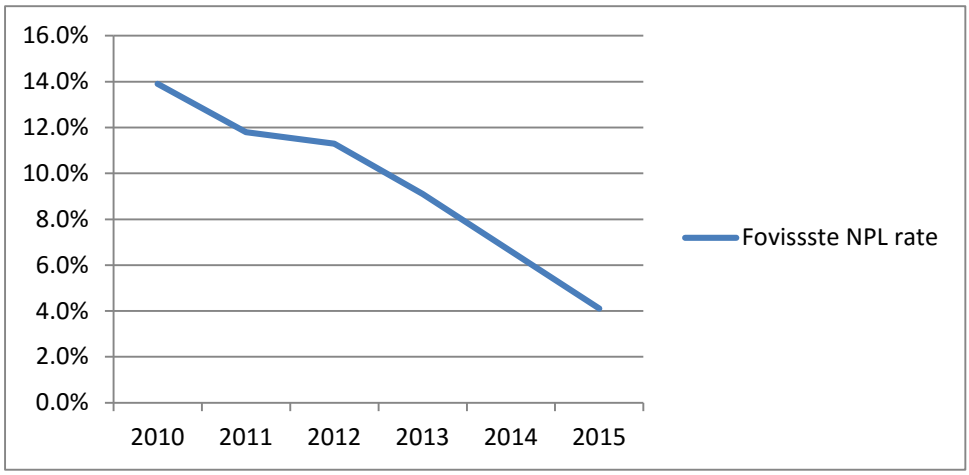
[25] Tax deductibility of investments in land, and , until 2010, accounting treatment of construction-in-progress as done sales.

Figure 3: Infonavit and Commercial Banks NPL rate



Source: Banxico Informe Trimestral Oct-Dec2015.

Figure 4: Fovissste NPL rate



Source: Fovissste

30. **The market infrastructure has still some weaknesses, which are however being addressed.** Exhaustive and reliable property registration systems are not necessarily available in every part of the 32 Mexican States. The strengthening of these systems have been on-going for a few years, now under SEDATU's leadership and financial support. Mainstream lenders do not see this as a major obstacle, probably because institutional gaps often affect areas where they are little active. Transaction cost for registering properties or mortgages are high in some states.

The 2014 financial reform improved the legal framework for secured lending by strengthening creditors' rights (see Mexico 2016 FSAP: TN on SME Finance), however foreclosure remains a slow process– with however regional variations. The amendments to the law also extended the obligation to contribute to the credit information platform to the Institutes and other financial institutions, and all lenders now participate to the credit bureaus.

31. **Lending prudential rules and practices are conducive to sound credit risk management.** CNBV requires banks to meet certain minimum underwriting criteria for mortgage lending by banks. Among these are:

- Verification of the borrowers' income
- Obligation of a recent appraisal of the property
- Obligation to check the borrower's credit history and outstanding credit.

Failure to comply with this requirement results in a 100% provisioning of the loan.

Moreover, capital adequacy requirements are linked to the level of LTVs: 4% for LTV < 65%, 6% for 65% <LTV <75% or 8% for LTV > 75%.

The institutes are in a different position, with scoring systems that reflect social goals rather than risk consideration for lending decisions. However, they determine loanable amounts based of the incomes of the affiliates and their ability to repay, a major feature to prevent reckless lending. The typical mortgage servicing-to income ratio is a prudent 25% to 30%. In addition, they both use credit bureaus reports[26], although only recently (2011 in the case of Infonavit). Employers' contributions to savings accounts are then used for the repayment of mortgages. Recovery is done through direct payroll deduction.

32. **The Institutes' NPL rates, although on a declining trend, but are still affected by legacy issues.** Infonavit's NPL has been hovering around 7% in the last few years – this rate stood at 13% in 2003. For Fovissste, whose policy is to abstain from foreclosing properties, the rate was above 10% until recently (figure 4). A common legacy factor is the difficulty of pursuing payment recovery in the mass developments that were Infonavit's signature, in particular in the case of households who abandoned their houses in ill-located projects, or who were delivered poor quality units (especially the case of some Infonavit funded projects) and demanded the suspension of payroll deduction. Note that in such situations, not only the frequency of default increases, but the loss-given-default does as well because of lower real estate values. This is why Infonavit now measure the improvement of the quality of housing and its environment through a specific assessment tool. An additional risk factor in the case of Fovissste has been the deficient transfer of due loan repayments by some public employers.

It must be stressed that the Institutes' data do not include "Prorogas" – loans to borrowers who have lost their job, for which a repayment forbearance of up to 12 months is provided by law[27]- despite the fact that arrears are said to be frequent in their case. They do not include either the population of borrowers facing hardships, to whom Infonavit grants an extension of the maturity of their loans[28].

Both Institutes have a generous provision policy. The extent of provisioning is striking especially in the case of Infonavit – 250% of impaired assets, around 60% of the gross interest margin[29]-, even taking into account the provisions for extension risk and life insurance that are included. This level of provisioning is an indicator of the Institutes' real profitability.

[26] However, borrowers may refuse the access to their credit reports (except for loans in co-participation with banks, for which the reports are required).
[27] A provision that is significant for Infonavit, not for Fovissste (5% and 0.3% of the portfolios end 2015 respectively).
[28] Infonavit sets aside sums to provide for the extension risk.
[29] 212% and 44% respectively in the case of Fovissste (2015).

33. **Fovissste enjoys now the benefits to have payments collected through SHCP for, at least, part of loan repayments.** [30]The legacy portfolio is still affecting Fovissste's overall performance, but to a decreasing extent. The Institute strengthened its recovery policy and, mostly, SHCP centralizes loan repayments collected by public entities and transfers to Fovissste amounts due, including those in arrears.

34. **In the banking sector, credit risk has been decreasing since the last crisis, and kept at a satisfactory level, including in the lower income segments.** The rate of NPL of mortgage portfolios has been fairly stable in the last few years, between around 3% and 4 % in terms of Peso amount, a reasonable level evidencing a significant decrease since the financial crisis –5% in 2009). The general appreciation of real estate values, strong enough to build equity in houses funded by Peso-denominated loans without leading to the build-up of a price of a bubble, can be considered as having played a role in this regard. Interestingly, studies show that the impairment rate in the lower income segment is the same as in the other segments[31].

35. **Sofoles/Sofomes legacy portfolios evidence the low performance of their business model.** The NPL rate on outstanding MBS was 27 % at the end of 2015[32]. The overall rate in SHF's assets was 24%, but is much higher – 66% - in the portfolios transferred from Sofoles/Sofomes as payment in kind.

36. **In the social financial sector, NPL rates of the largest institutions have been decreasing.** The industry average NPL ratio of SOCAPs decreased regularly between 2001 and 2015, from 4.6% to 2.7%. By contrast, this ratio is high and increasing among SOFIPOS (16% at the end of 2015 as against 8.7% in 2011), but on much smaller volumes. Also, the lack of write-offs may distort the visibility of Sofipos' actual performance.

37. **Some recent banks' practices on new loan origination raise concerns.** Maybe as a consequence of the steady appreciation of prices, which lenders may be tempted to project in the future, there is a trend among banks to accept increasingly high LTVs. Loans with 100% LTVs, or more with the inclusion of transaction costs, are offered now. In 2015, LTVs of one third of new loans (for acquisition) were above 80%[33]. Mortgage insurance services that SHF has been promoting for high LTV loans probably is contributing to this trend – it covers about 20% of new originations. However, this is about transferring risks, not mitigating them, and such an option should be restricted to cases where borrowers' ability to repay is well established[34]. Furthermore, banks can accept overall debt-servicing-to income ratios that seem excessive – up to 60% in some cases, depending on the borrowers' income levels. The banking supervision must ensure that the push for greater competition, although very much justified, does not lead to a relaxation of credit standards. Finally, there is a fairly large usage of brokers' intermediation by banks – about one third of mortgage originations. This unregulated channel has proven to be a source of higher risk in many countries and its performance should be monitored –and included in the modeling of risk factors that underlies the ex-ante provisioning system.

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[30] ISSTE Law

[31] Estado Actual de la Vivienda en México 2015, p 119 (NPL rates NPL in housing portfolios of commercial Banks June 215: 3.15% for loans of "social interest", 3.32% for middle and "residential" segments); and Banorte research "Mexico: an outstanding emerging market" (April 2016: 2.7% and 2.9% respectively).

[32] Source: Standard and Poor's.

[33] Banxico Indicadores Basicos de Créditos a la Vivienda December 2015.

[34] This concern can be somewhat mitigated by the fact that regulation requires to take the lower of price and property valuation to calculate LTVs.

MARKET DEPTH

38. **The Mortgage market is divided in price segments, in particular for subsidization purposes.** Although there is not a unique segmentation (e.g. there are 6 segments for subsidies, with lower limits for the definition of affordable housing[35]), the table below is a commonly used stratification defined by SHF:

Table 5: Mortgage market segmentation by prices and implicit incomes

	Upper price limit in GMMW	Upper price limit in Pesos (2016)	Income needed to afford the mid-range price (without subsidies)
Housing of "Social Interest"	200	444,000	3 MW
"Economic" housing	350	777,000	6 MW
Middle-price housing	750	1,665,000	12MW
"Residencial" and above	>750	> 1,665,000	

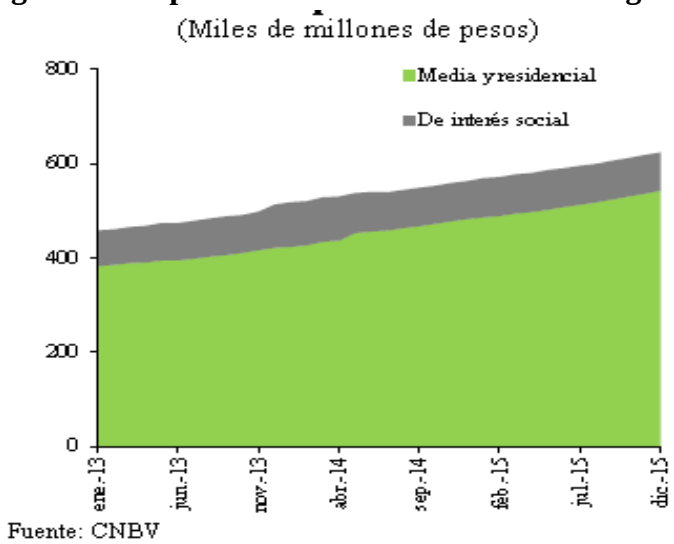
Source: Banxico, CONAVI

Based on the 2014 INEGI income survey, 30% of households earn 3 minimum wage or less, and nearly 35% between 3 and 6 minimum wage. This gives an indication on the depth of the demand in affordable segments, but only a very rough one since this is a nationwide income distribution that does not reflect the real purchasing powers in very different locations such as large cities, other cities, and rural areas.

39. **The market positioning of each category of lenders can first be approximated by the average loan amount of their production.** For mortgages originated in 2015, this average was MXN 307,000 for Infonavit, MXN 622,000 for Fovissste and MXN 1,102 for banks[36].

40. **The banking system mostly lends to middle income segments and up.** Banks lend very little to households earning less than 6/7 minimum wage – only 4 % of the mortgages extended in 2015 were to borrowers below 6 MW[37], i.e. for the social or economic housing segments. The volume of lending for housing acquisition in the affordable segment has remained fairly stable, and hence decreased in relative terms:

Figure 5: Simplified breakdown of bank lending since 2012

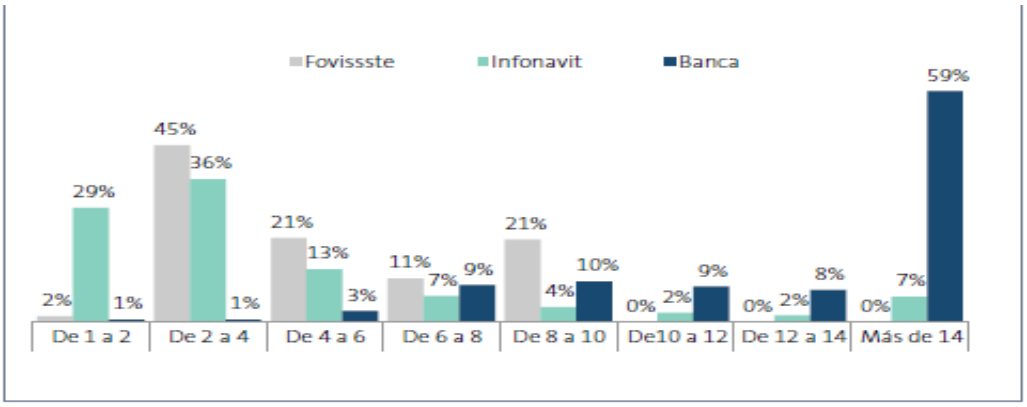


[35] For the allocation of subsidies, lower thresholds are 128 and 158 GMMW.
[36] Source: BBVA Situacion Inmobiliaria first semester 2016
[37] Source: Infonavit

41. **The Institutes cover a larger range of incomes, but are the only entities catering to low/ low-middle income earners.** While expanding its market upwards, Infonavit is still catering to lower income categories – below 2.6 General Monthly Minimum Wage (MXN 5,800 / month). Its portfolio of 6 million loans includes 45% of households earning less than 2.6 GMMW and 2/3 below 4 GMMW[38]. The minimum income required to be eligible to an Infonavit loan is as low as 1MW – allowing very small investments of MXN 100 to 125,000 at the most. The Institutes' loan ceilings –as revised in the case of Infonavit- allow them to lend up to the beginning of the residential segment. The Institutes can serve households earning up to 13 times the general minimum wage - assuming a 20% downpayment- without complementing their loans by bank credits.

42. **Overall, the mortgage market remains highly compartmented based on income levels.** The distribution of housing loans for the various income strata clearly shows the market focus of the main types of lenders:

Figure 6: Distribution of the Number of loans between Income Brackets in GMMW in 2013



Source: COFECE 2014 Trabajo de investigación y recommendaciones sobre las condiciones de competencia en el sector financiereo y sus mercados

Although this structure is a source of inefficiencies and high intermediation costs (see below "Competition"), this is the way low-income salaried people have access to credit. Fostering a higher market integration and more level- playing field without affecting the market outreach is a key challenge that a structural reform should meet.

43. **A broad demand-side subsidy program that judiciously leverages credit has been in place since 2007.** The main subsidy program by the federal government is the provision by CONAVI of up-front grants linked to a mortgage credit[39] to householders earning no more than 5 minimum wage –before 2015, the limit was lower in the case the Institutes' borrowers: 2.6 GMMW -, i.e. in 2016 MXN 11,000 (US$ 600) per month. Eligible investments include acquisition of new or existing houses, purchase of individual plots, self-construction or production – a new objective that needs to be scaled up-, and home improvement. This assistance opportunity has been widely used, supporting nearly 25% of mortgage origination.

[38] Globally however, IMSS members earn on average 4.2 Minimum Wage (source: BBVA research).
[39] CONAVI has in addition specific housing subsidy programs, in particular for women heads of family, rural housing, youth or military forces. Separately, there are housing subsidies programs independent from credit, extended by the agencies SEDESOL and FONHAPO.

44. **The program is well designed and targeted, but amplifies the discrepancies between distribution channels.** The main parameters of the credit-linked subsidies scheme are as follows:

- Maximum eligible income (5 GMMW) covering about 55% of the nationwide income distribution, but probably significantly a lower percentage in urban areas.
- Required location: housing subsidies are used to support the new urban development strategy. They are allocated to construction in PCUs, or in registered land reserves, and their amounts are linked to the scores that measure the quality of the location, the availability of services and infrastructure, project densities and the quality of new units (including the "green mortgages" scheme).
- Price range: from 60 to 200 GMMW (MXN 133,000 to 440,000 (US$ 7,500 to 24,000).
- Down-payment requirement: the balance of the housing sub- account for the Institutes' affiliates, 5% for banks' borrowers who do not use these accounts.
- Subsidy amounts: from 29 up to 33 or 37 GMMW, i.e. MXN 73,000 to 82,000 in 2016 (US$ 4,000 to 4,500)[40], which represents a significant affordability support, especially for lower income households. The subsidization rate can represent up to 45% of the smallest investments, a percentage which, because of the near fixed amount, decreases with higher prices, which is equitable.
- Distribution channels: Institutes (including ISSFAM), regulated credit institutions - including in principle Sofipos and SOCAPs that meet solvency and organization requirements-, social builders, ONAVIs.

Despite this diversity, the vast majority of subsidies – estimated at 80%- have been benefitting Institutes' borrowers since the creation of a direct demand-side subsidy scheme. This share is decreasing now.

45. **Infonavit recently overhauled the way it subsidizes low income borrowers.** Since 2015**,** all Infonavit loans are made on the basis of a12% interest rate (in Peso). But the Institute contributes to lower income borrowers' repayments through a buy-down subsidy ("complemento de pago"). Those who earn 6.5 GMMW or less pay the equivalent of a 8% mortgage, and earners of between 5 and 7 GMMW the equivalent 10.9%. In addition, registration charges are lifted for these categories, and Infonavit assumes the premiums of life insurance associated to loans. This mechanism relies on a cross-subsidization principle, the source of the subsidy being the 12% loans and Infonavit's intermediation margin between the loan portfolios and the housing sub-accounts. This seems creating a risk for the sustainability of the scheme, since higher-end affiliates – provided they are creditworthy- could prefer to borrow from banks given Infonavit's conditions. Infonavit sets aside provisions for the "complementos de pago" that will be paid in the future.

46. **Despite steps taken to make finance more affordable, a large coverage gap continues unreduced: it affects the population who is not affiliated to a Social Security system.** According to INEGI 2014 Employment Survey (ENOE), out of the 49.5 million working people, over 29 million were working in informal conditions – based on the International Labor Organization definition: independent workers and salaried workers who are not affiliated to a social security system. The formal sector includes 18 million IMSS/Infonavit affiliates and 2.3 million ISSSTE/Fovissste affiliates[41]. Formal employment has been increasing: the number of Infonavit affiliates grew by 4 million since 2010. Still,

[40] The subsidy amounts may be scaled down in 2016 to allow to serve the same number of households with a smaller budget appropriation.
[41] The military has its own social security system, ISSFAM.

"informal" households represent 46% of the work force in urban areas where most of the quantitative needs for new housing are:

Table 6: Informality by working status in urban Mexico 2014

	Informality rate	Formality rate	Total
Wage earners (68% of all workers)	37.4%	62.6%	100%
Self-employed workers or employers (26% of all workers)	81.1%	18.9%	100%
Total	45.8%	54.2%	100%

Source: ENOE, INEGI, fourth quarter of 2014. The sample is restricted to urban workers who live in localities with 15,000 or more inhabitants and declare receiving a monetary payment for their job. See Section 3 for the definition of informality.

Source: "Informality and Segmentation in the Mexican Labor Market" Banxico Working Paper No 2015-25

Note that a program initiated by Infonavit in the late 2000s to attract informal employers – in particular of domestic workers- and local government employees failed and was interrupted.

47. **Moreover, low income level and informality are correlated, which aggravates the coverage gap in the segments where the housing shortage is the most acute.** The 2014 ENOE survey estimates that 73% of the persons earning 2 Minimum Wage at the most, and 55% of those who earn 5 Minimum Wage at the most, are informal. Even if subsidies make theoretically social or economic housing affordable to these categories, the lack of available credit to which subsidies are linked deprives them from accessing decent housing. Sofoles/Sofomes used to cater to these segments, although to a limited extent – maybe 20% at best of the industry portfolio, itself relatively small. The disappearance of this type of lenders aggravated the coverage gap.

COMPETITION

48. **The market structure has been characterized for a long time by distortions and oligopolies.** The Institutes built up their dominating share thanks to the access to a captive customer base and a privileged recovery system. They are not subject to income tax and do not have to pay out dividends. In the banking sector, the supply is very concentrated with the 4 main banks holding an aggregate 75% market share, and the "G 7" 94% (2015).

49. **This structure led to high gross interest margins in both categories of lenders**. Margins in recent years have been steadily between 5% and 6% in real terms for the Institutes[42]. In the case of commercial banks, this margin has been estimated to be close to 5.5% in 2012 and 2013 by COFECE[43], a level that underestimates the actual figure since it assumes that funding only comes from the capital market and not from deposits. This level follows moreover an increasing trend. In addition, origination fees and other ancillary charges are very significant in Mexico. The resulting additional cost for borrowers is estimated to be around 2.5% on average above the nominal interest rates charged by banks, and in fact has increased since 2015, mitigating the impact of the decline of rates[44]. Infonavit charges significant "opening fees" (5%) according to COFECE[45] , as well as a servicing fee of 2% the

[42] Source: 2015 Financial statements of the Institutes, COFECE 2014.
[43] Source: COFECE Condiciones de competencia en el Sector Financier 2014, p.573.
[44] Source: Estado actual de la Vivienda in Mexico 2015 Fundacion CIDOC /SHF.
[45] Source: COFECE Condiciones de competencia en el Sector Financiero 2014, p.570.

loan balance (capped at 2% of 128 MMW), resulting in an APR of nearly 2% above the nominal interest rate[46].

50. **A COFECE 2014 report highlighted that the strong compartmenting of the mortgage market, linked to the provident funds 'role, pushes all lending conditions upwards**. The main obstacles to a more integrated and competitive market according to the Commission lie with (i) the restrictions limiting the use of the savings accumulated in housing sub-accounts with other institutions (only allowed as downpayment for co-financed loans or guarantee in case of job loss for Infonavit affiliates)[47]. These restrictions turn the group of affiliates who could entirely finance their investments through bank credit into a captive customer base who in fact pay more than banks charge on average; (ii) the overly generous conditions paid on the mortgage backed securities issued by the Institutes relatively to their high degree of security (see "funding "section below), which crowds out private sector issuers. The implication of this analysis is that the Institutes in fact contribute to keep interest rates at unduly high level in the whole mortgage market. The Competition Commission's key recommendations were to make housing sub-accounts entirely portable to any mortgage lender, and convert the Institutes into mere originators and servicers of mortgage portfolios, which would be sold through competitive bidding process to banks and Sofomes. The Institutes should furthermore be subject to the same regulation applicable to financial institutions for their remaining credit activity. In addition, COFECE recommended a revision of the civil code to lower transaction ("notarial") costs.Some significant, although less drastic, policy measures have been taken in this direction.

51. **The Institutes are now subject, as private lenders are, to a Basel II type of framework following a December 2014 regulation by CNBV[48], which is in fact not a major constraint for them**. This framework, fully implemented since January 2016, includes in particular: (i) standard requirements for the risk management function (decision process, scope – credit, market, operational risks- reporting, independent internal control); (ii) the internal rating of loans; (iii) risk weights of mortgages based on their LTVs; (iv) the definition of delinquencies, aligned with banking rules, with some exceptions[49], as well as the methodology of provisioning; (v) the setting aside of provisions for "unexpected losses", i.e. the equivalent of a capital requirement, using a standardized approach based on risk-weighted assets or a methodology approved by CNBV. Infonavit's ICAAP, another Basel concept, is12,4% at the end of 2016. The Basel III liquidity metrics are being monitored by the Institutes. This important change largely removed the regulation-based sources of market distortions between the Institutes and the banks - some remain however, but at a much lesser degree, in the provisioning rules (e.g. the possibility for Fovissste to postpone up to 120 day arrears the classification trigger in some cases, or the non-provisioning of "prorrogas"[50]). But the new regime does not address the critical distortion factors which are the absence of corporate income tax as well as of any obligation to remunerate equity.

52. **New elements in the market framework and practices contribute to enliven competition, starting with the facilitation of the refinancing of mortgages within the**

[46] The level of ancillary charges varies in fact with borrowers' income levels.
[47] In the case of loans by the Institutes, sub-accounts balances are used as down payment and the contributions as sources of loan repayment, a significant alleviation of mortgage servicing burdens.
[48] December 1, 2014 Disposiciones de carácter general aplicables a los organismos de fomento y entidades de fomento.
[49] in some cases only more than 120 days. "Prorogas" – loans to borrowers who change job, for which a repayment forbearance of up to 12 months is provided by law- are not considered as delinquent, a provision that is significant for Infonavit, not for Fovissste (5% and 0.3% of the portfolios end 2015 respectively).
[50] It must be noted however that

banking sector. An important amendment to the" law for the transparency and the promotion of competition in mortgage lending" (Ley de Transparencia y de Fomento a la Competencia en el Crédito Garantizado) was passed in January 2014 to make the refinancing of existing loans a simple and cheap process using the subrogation legal concept[51]. Refinancing transactions surged from 2,000 in 2013 to 16,000 in 2015, and although the decline of interest rates was a triggering factor, it is very likely that their downward trend was amplified by the new provision - lenders being induced to offer better conditions to keep their customers. Nevertheless, two mitigating remarks must be made regarding the impact of the change. First, the subrogation mechanism does not apply to loans by the Institutes. Second, an agreement was then passed between banks, officially to standardize the transfer process and designate responsibilities to manage it in each institution. In most country, such a move at the industry level would also be a gentlemen agreement setting some form of limitations on the refinancing activity by one institution at the expense of another one.

53. **In addition, Banxico[52] restricted the application of prepayment penalties on residential mortgages and enhanced the comparability of actual lending costs**. Starting in October 2016, banks and regulated Sofomes that issue loans with prepayment penalties have to offer in parallel an alternative product free of such penalties. Another potentially significant step was to change the way all-in actuarial cost of loans (Annual Percentage Rate of Charge– APRC – or CAT in Spanish) is measured[53], to make it more transparent and improve comparability.

54. **Overall, the recent reforms should have a positive impact on the market**. They should induce a lowering of interest margins, beside the decrease of interest rates, as well as a reduction of the level of fees and expenses charged by lenders. Increased competition will also support the trend of product diversification mentioned above. But the inefficiencies linked to the market compartmenting remain.

[51] the provider of a refinancing loan is subrogated in the rights of the initial lender, which avoids to create and register a new mortgage.
[52] circular 8/2016 published on April 11, 2016.
[53] Banxico decisión of October 2015.

FUNDING

55. **Table 7 shows that there is a global funding deficit of mortgages, which is unequally distributed.** At times, Infonavit and Fovissste have been facing liquidity shortages –one of the motivations to establish partnerships with banks— although this constraint has become les acute for Infonavit with the growth of employment in the private sector and the expansion of its affiliated population. In the banking sector, more than the availability of immediate liquidity, the main issue is the mismatch of maturities.

Table 7: Mortgage lending system "balance sheet "Amounts outstanding end 2015 (MXN Billion)

LOANS		FUNDING SOURCES	
Infonavit	1,098,168	Infonavit – Housing sub-accounts	845,924
Fovissste	154,283	Fovissste - Housing sub-accounts	158,564
SHF portfolio & other development banks	30,844	SHF resources	81,971
		• *bonds*	*6,211*
Non-consolidated Sofomes	4,604	• *long term loans*	*53,683*
Securitized portfolios*	259,952	• *term deposits*	*22,077*
		RMBS*	219,554
Banks	623,205	Implicit balancing resources**	865,043
Total	2,171,056	**Total**	2,171,056

Sources: CNBV, Infonavit, Fovissste

* The total funding through securitization is less than the value of underling loans due to overcollateralization.

**Bank deposits, capital and financial provisions.

56. **Although the capital market is a relatively significant source of funding for the mortgage sector, its expected role has not been fulfilled.** The bond market supports 10% **of** the stock of mortgages, which is a fairly high contribution in a middle-income country[54]. This reflects a policy orientation in the private sector with the creation of SHF whose initial mandate was to foster the securitization market, in particular through credit enhancement, and provide long term resources to mortgage lenders, primarily Sofoles and Sofomes. Thanks to SHF and to the development of a well-designed legal framework, including transparency requirements ("Anexo T "of the General Issuers' Regulation), mortgage securitization took off as soon as 2000 in Mexico. Its potential remains large given the investment rules for institutional investors, particularly pension funds, which can hold up to 40% of their assets in ABS /MBS if rated at least "A". However, after the demise of the Sofoles/Sofomes sector, hardly any private label RMBS were issued and the Institutes became the near exclusive users of this funding instrument (see analysis below). SHF's support as a refinancing agency, which was supposed to stop in 2009 but was extended due to the liquidity crisis, involves very little resource mobilization from the bond market[55].

57. **The private securitization market has been progressively crowded out by the Institutes**. The table 8 and figure 6 show that, after the financial crisis, the Institutes became

[54] One Real Estate Investment Trust (Fibra) started buying mortgages from the Institutes. This development is too recent to be seen as a new trend.

[55] This activity was largely funded by loans from DFIS.

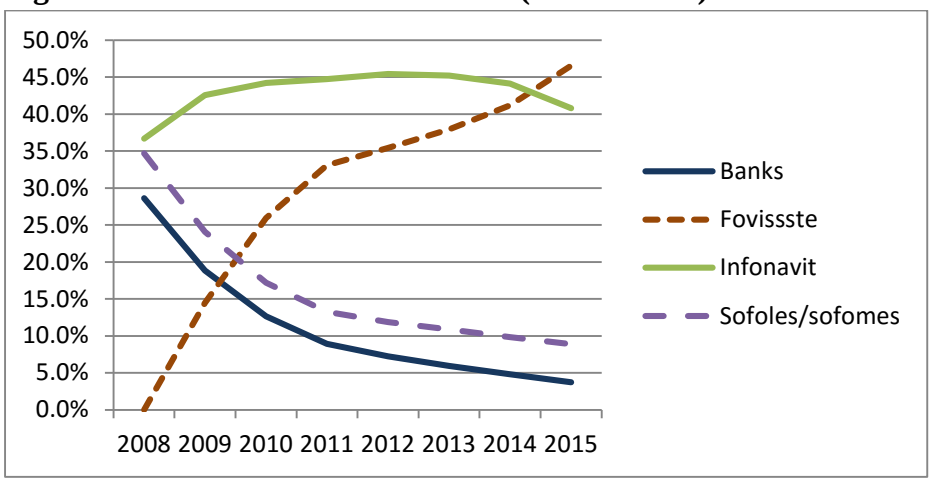
increasingly active, while banks' market share dwindled quickly in the quasi absence of new issues. Fovissste in particular became the major market player due to its liquidity constraints.

Table 8: RMBS Market Structure and Development (volume outstanding in million Pesos)

	Banks	Fovissste	Infonavit	Sofol/Sofom UDI	Sofol/Sofome MXN	Total
2008	24,235	-	31,056	26,804	2,585	84,680
2009	21,763	16,674	49,120	25,474	2,298	115,328
2010	19,506	40,021	68,205	24,498	2,015	154,245
2011	17,049	63,224	85,445	23,549	1,752	191,020
2012	14,669	71,708	91,950	22,477	1,522	202,326
2013	12,274	78,548	93,655	21,255	1,308	207,041
2014	10,161	87,094	93,284	19,730	1,116	211,385
2015	8,246	102,191	89,612	18,551	953	219,554

Source: Moody's

Figure 6: Share of the RMBS market (from table 8)



58. **A major factor behind this growing imbalance is the high returns that the Institutes accept to pay despite the extreme degree of security of their RMBS.** This security stems from the addition of several layers: loan repayment through pay-roll deduction, reinforced now for Fovissste by the above mentioned collection facility through SHCP, high overcollateralization – typically close to 30% even recently[56], sometimes higher— implicit government guarantee given the critical role of the Institutes in the pension system. For a long time, spreads over the (UDI) yield curve were around 300 basis points. They decreased progressively, due in particular to the lack of paper supply. Also, in the case of Fovissste, SHF's credit enhancement for RMBS not only allowed a reduction of overcollateralization- 14% in the last issues-, but contributed to a decline of the spread , which is now (mid 2016) in a 80-150 basis points range – a reduction partially offset for the issuer by the cost of the guarantee. This level, a reference for the whole market, still makes the instrument expensive for banks, which would have to offer a higher return to investors, probably at least 8% on senior tranches in the current market conditions.

[56] 32% for the MBS issued by Fovissste in 2014 -2015.

59. **Other elements impeded the issuance of RMBS by the private sector.** They include (i) multiplicity of MBS structures; (ii) valuation difficulties for investors; (iii) a lack of confidence due to the poor quality of portfolios sold by Sofoles/Sofomes in the past and to a few cases of quasi fraudulent practices – for instance commingling of cash flows-; and (iv) the illiquidity of the instrument[57].

60. **The Hito platform could not really help develop the securitization market and is under-used.** Hito was an initiative – in particular by SHF, which owns 25% of its capital- to promote private label MBS, especially for Sofoles/Sofomes. Its functions are to act as a multi issuer conduit, a standard setter and compliance monitor, and a driver of innovation - one of the original plan was to replicate the Danish model of mortgage-backed securities with loan-by-loan issuances, an attempt that was interrupted. Hito now helps arrange issues, including for the Institutes, and administers portfolios, in particular as a master servicer. The volume of its activities is small, and its financial and technical capacities appear to be under-used.

61. **The maturity mismatches and long term liquidity shortage are a concern.** Banks, and especially large ones, argue that the development of long term lending for housing has paralleled the growth of core deposit bases – i.e. 3% to 8% per year in real terms since 2012. However, the average loans-to-deposits ratio in the banking sector is close to 100%, which clearly evidences a liquidity constraint for further development. Recent regulatory reforms should oblige banks to address this issue more actively. First, a Liquidity Regulation Committee has been established in principle by the 2014 financial reform to set liquidity requirements. Second, the Basel III framework that is progressively developed like in other G 20 countries includes a "Net Stable Funding Ratio" (NSFR) to ensure that financial institutions have enough stable resources to fund immobilized assets even in the case of a market disruption of up to one year. Although deposits by retail customers are largely considered as stable for the calculation of the NSFR, it should induce commercial banks to raise more long term resources from the capital market.

62. **Mortgage lending also generates interest rate risk.** Hedging instruments in the form of interest rate swaps are available in Mexico, and used by banks. Moreover, this one of the rare countries where the bank regulator imposes capital cushion to cover market risks in the banking books. Overall, the Mexican Authorities monitoring financial stability do not consider interest rate risk as major issue in the banking sector. Still, fixed rate mortgages do generate such a risk, which is compounded by the very long maturity of these loans. This would become an issue if mortgage lending were to take a share of credit portfolio noticeably higher than the current 18%-20%, and could impede further developments, unless funding from the capital market develops in parallel. The same concern applies to the Institutes given the new profile of their lending in Peso fixed rate.

OPPORTUNITIES

63. **The federal government has launched programs to encourage the integration of non-affiliated workers in the formal economy.** This is a policy goal set out in the national Development Plan 2013-2018, which is pursued through two incentive programs. First, the 2013 budget law created the "Regimen de Incorporación Fiscal" (RIF) that provides various tax benefits for up to 10 years to small entrepreneurs and independent workers who shift to a formalize their operation by meeting accounting and tax requirements. Second, the

[57] One condition of market liquidity is the capacity to achieve fairly homogeneous valuations, which is itself related to the quality of information provided by issuers. The best practice example in this respect is said to given by Infonavit.

government decided to subsidize the contributions to Infonavit paid by employers who join the IMSS in a program called the Regimen de Incorporación a la Seguridad Social (RISS) established in April 2014. Third, housing subsidies are increased for borrowers participating in these programs[58]. Although these programs are too recent to allow a clear view of their impact – Infonavit recorded less than 600 adhesions until May 2016- , they could result in a significant increase in the population of formal workers over time, opening a large new territory to housing finance activities.

64. **The new housing policy should have a positive impact on the housing finance system.** As could be expected, high land and property values limit the number of subsidies that can be allocated in the urban expansion areas closest to city centers (PCU1). But PCUs 2 and 3, and registered land reserves should largely benefit from the re-designed subsidy scheme. The resulting improvement of affordability should open new market segments to mortgage lenders in a context that is more conducive than before to repayment discipline, and to positive trends of housing prices.

65. **The housing and urban information systems developed in parallel to this policy will have multiple benefits, in particular for the financial system.** In addition to the registration system on construction, sales and stock of housing RUV, new information systems include (i) a national registry of land available for urban expansion (RENARET); and (ii) a national information and housing indicators system (SNIIV) that monitors the overall equilibrium of the housing market, including new construction, location, quality levels and prices. These sets of data will be valuable to monitor the balance between demand and supply, to mitigate market risks faced by developers, and to help the targeting of subsidies. But it will also be very useful to financial institutions by helping them to assess the economics of new developments, property values and possible early signs of price bubbles. Banxico in particular could benefit from this information in its financial stability assessments.

66. **The structure of the construction industry has been reinforced.** The activity and capacity of mid-sized developers were enhanced following the crisis and by the new urban policy. At least one of the large developers is now coming out of bankruptcy. Moreover, Mexico has an active sector of "social builders" that complements the value chain by focusing on the construction of low-cost individual houses. 27 of them are now registered with SHF, which delivers some sort of construction quality label.

67. **The production of affordable houses is significant, higher than in many countries of similar income level.** The data base RUV[59] shows that the stock of new units on sale in April 2016 was composed of 30% of social housing, 47.5% of economic housing and 22.5% of middle –price housing. In the owner-driven (self-production) channel, social builders can build small, basic (extendable) houses for MXN 130,000 (US$7,000) - without the land- , a level affordable for households earning 1.5 GMMW. This production remains however at a small scale in a one-by-one unit approach, and this small scale pushes construction costs up in practice.

68. **The on-going project of creating a "bad bank" for public development banks should especially be a positive development for SHF by allowing it to reallocate resources immobilized in impaired portfolios.** SHF is by far the development bank that is the most affected by NPLs: MXN 17.3 billion in December 2015, or 76% of the total impaired portfolio of these public entities. In the last 3 fiscal years, the Return on Assets has

[58] Increase of the up-front grants (including matching of voluntary savings) in the case of Infonavit borrowers, reimbursement of one mortgage installment per year for banks borrowers.
[59] From SHF «Offerta de Vivienda Nueva, abril 2016».

become negative – between - 0.8% and - 2.6% - due to the correlative provisioning. Offsetting the burden of non-performing assets was probably one of the factors that induced the development bank to lend to the Institutes, a safe activity. Removing these assets will create space for SHF to go back to its development mandate.

RECOMMENDATIONS

Rec. 1: Develop socially targeted guarantee schemes

69. **Mortgage guarantees should be directed primarily to underserved populations to attract lenders in these segments.** Mortgage insurance in Mexico today is focused on high LTV loans. This is not necessarily a lending practice to encourage – the risk linked to high LTVs does not disappear because it is partially assumed by an outside insurer; and this feature does not coincide with clear social objectives. This is shown when considering the mortgage loans extended by banks in 2015 for the purchase of houses: the shares of high LTV loans in the 3 main market segments indicates that LTV is not a discriminating factor:

Table 9: LTVs by market segments

Number of loans by segments 2015	Loans with LTVs > 80%
Vivienda Social (26,148)	30.9%
Vivienda media (43,687)	34.1%
Vivienda residencial (30,478)	30.7%
Total (100,313)	32.2%

Source; Banxico Indicadores basicos de Créditos a la Vivienda December 2015

70. **A socially targeted, state-backed guarantee scheme could be a powerful tool to induce some lenders to be active in the excluded population, in particular to non-affiliated households.** Perceived credit risk is one of the major obstacles that hinder financial institutions to cater to lower-income groups, but in Mexico, even more so to those who are not part of the social security systems. The primary objective of a risk-sharing scheme would be to address this main exclusion factor. It should however target low-income categories as a whole, for horizontal equity reasons. It should also be neutral with regard to the distribution channel, and be an option available to banks, the Institutes and the popular financial sector. Experience shows that such schemes can be very efficient in leveraging credit and expanding the access to it. There are successful examples in European countries and others – notably in Morocco with the Fogarim guarantee fund. Fogarim covers part of the risk of mortgages to non-salaried, moderate income borrowers; it is used by 7 banks and was instrumental in triggering a deepening of the mortgage market towards more vulnerable categories of borrowers.

71. **A guarantee scheme could in addition complement the range of instruments used to promote two important policies: the formalization of employment and the balanced urban growth.** The eligibility criteria to the scheme could include, in the case of borrowing independent workers, the participation to the Regimen de Incorporación Fiscal, and, in general, housing in the PCUs. Note that even if RIF participants will provide some form of income documentation to lenders, the irregularity of their incomes will still be a roadblock for most of them, and a credit support will be needed to finance households in this category.

72. **Such schemes require caution when developed.** Major conditions for the success of state-backed guarantees to housing – a delicate area when homes of low-income households are involved- are to avoid moral hazards, ensure credit discipline, and be financially viable in the long run. This implies well-designed operational and risk sharing arrangements, as well as

sound financial provisions – initial capitalization, actuarially-based premiums. If these conditions are met, the backing of the schemes can be taken into account in the prudential rules applicable to lenders, in particular through reduced risk weights of loans, thus providing an additional incentive for lending institutions to develop their activity in the targeted segments.

73. **Some form of public-backed guarantee should also be considered for low income tenants.** Renting is the only option for many low income urban households. The level of their income is however a frequent obstacle, as in the case of mortgage borrowers. Moreover, tenants have to pay upfront deposits and advance rents at the beginning of a lease, which low income households may not be able to afford. A means-tested mechanism providing guarantees for these two purposes could unlock the access to decent housing of many households. It could also be used as an instrument to promote formalization in an area where many transactions are informal, often to the detriment of unprotected tenants. As for loan guarantees, such products must be developed with great caution against moral hazard phenomenon in particular. It would need to be developed in parallel with a strengthening of the rental environment and of the tenants-landlords legal framework.

74. **Funding for guarantee schemes could come from the phasing out of little efficient subsidy programs.** There are in particular 3 old public housing subsidy programs that provides near free housing: two by FONHAPO ("Vivienda Rural" and "Vivienda Digna"), one by SEDESOL (PDZP). The goals of these programs are valuable, but their efficiency is low. They do not contribute to develop a system nor sustainable solutions, benefit to a happy few, and are costly for public budgets – in the case of the FONHAPO programs, between MXN 2.5 and 3 billion a year in 2010-2014. Government support to the targeted populations would have a much broader impact by leveraging credit through guarantees.

75. **A guarantee scheme should be part of a broader overhaul of housing finance mechanisms for low income groups, including a revision of the Institutes 'role.** Removing the Institutes' lending function as proposed by COFECE – a model that exists in other countries[60]- would definitely put an end to the current market partitioning and the related inefficiencies. However, such a drastic reform could be politically difficult, and raises important issues: what if private lenders are not keen to buy the Institutes' portfolios? Is there enough market funding available to support them? How would the housing sub-accounts be managed? The portability of the sub-accounts, which would also lower the "silo" walls and increase competition, hence lending conditions, seems to be an easier first step. To succeed without reducing the availability of housing finance for lower wage earners, such a move should be accompanied by complementary steps, in particular:

- The availability of the proposed credit enhancement tool for private lenders venturing into new territories

- A sharing of the Institutes 'subsidization capacity, to maintain the same level of affordability of credit as today for lower income earners. This condition would require an in-depth assessment – portfolio sales at discounted prices could, in this respect, be useful. The subsidization capacity would have to be measured - it may be reduced if higher income borrowers migrate towards the private sector, and the impact of the new provisioning rules needs to be seen. But the current financial strength of the

[60] A successful example of a non-lending housing provident fund exists in Singapore.

Institutes is a source of wealth that could be put to use for the benefit of low income affiliates even if they borrow from private sector institutions, and continue to fund subsidies in addition to the 5% employers' contribution and the government assistance programs.

Loans remaining in Fovissste's balance sheet justify a reform of the rule for remunerating hosing sub-accounts similar to the one that was passed for Infonavit, i.e. a desindexation.

Rec. 2: Use credit to support inclusive urban and housing developments

76. **More could be done to mobilize resources from the financial sector to support the social goals of the new urban and housing policy.** A more inclusive dimension could be given to this policy, for instance by (i) setting new affordable housing minimum requirements in PCUs where achievable; (ii) including more self-production housing, despite the relatively lower density involved than vertical developments, which would meet a large demand and promote some social diversity. Financial solutions are critical to implement such goals, and could be arranged as part of an integrated package beyond the sole provision of subsidies. In particular, in the case of self-production, partnerships could be developed between the land development entities (see below SHF as a possible source of funding), low-cost builders for which it would be the opportunities to bring up the construction of individual houses to scale, and financial institutions providing housing loans, especially with the benefit of the new guarantee scheme. Capable Socaps and Sofipos would have a more solid ground of operation in this context and would allow non-affiliated households to be part of the new, quality-based urban expansion context.

77. **Make the strategy of developing housing finance solutions by the popular financial sector more systematic.** Lending for housing is a financial service that should go along with the growth of this sector, and with its integration in CNBV's prudential framework. In addition, stimulating the supply of finance for housing in this sector would likely induce a reduction of the very high cost of micro-credit. The fact that Socaps and Sofipos take deposits is a favorable feature to lend to non-salaried households since it allows monitoring cash-flows and measuring savings capacity. Expanding the offer of longer term, and larger amount, hence cheaper, housing loans will only be feasible by a few number of these "grass-root" institutions, but the concentration of both sectors (6 Sofipos for instance hold nearly 80% of the industry loan portfolios) should help in this respect. Drivers for such a development could be: the largest share of assisted self-production in PCUs, the access to the risk-sharing scheme, reinforced technical assistance, and cheaper cost of funds provided by SHF.

Rec. 3: Re-focus SHF's strategy on market development

78. **SHF should re-focus its activities on its mandate of development bank for the private sector mortgage market.** Since the quasi disappearance of mortgage Sofoles/Sofomes, SHF experienced some difficulty to adjust its role as a market developer. The bank has played a countercyclical role for developers' finance- a useful, but temporary, intervention-, supported the second largest mortgage lender financing civil servants, and continued to provide insurance on high LTV loans that are not necessarily the most adequate products to make the market sounder and more inclusive. Its development mandate needs to be re-defined. Among functions that could be created or increased, the following ones should be envisaged:

- Replace the support to developer credit, now back to a more normal level, by a **support to land development** - a key function in the value chain leading to affordable housing, especially for low-cost builders who do not buy land tracks, but build on home owners' plots. This function often stalled, or remained under-developed lack of financial resources beside government budgets. SHF could be a financier, or a guarantor of debt incurred by land development entities[61], especially in the PCUs. This would of course involve to build required capacities within the bank.

- **Act as an incubator** of new institutions or innovations to the market. In India, the second tier housing development bank, NHB, started from the late 2000s to support new housing finance companies focusing on underserved market segments – low income and informal sector households-, which resulted in the successful creation of about 10 such lenders in a few years. For illustration purposes, examples of innovative interventions with potential impact on the market deepening could be: to provide specific support to lenders aiming at filling market gaps[62]; facilitate partnerships between banks and Socaps or Sofipos, the latter being agents of the former to penetrate the unaffiliated population; or to establish an equity fund for low-cost builders or small builders to help them scale up their activities, especially as providers of assisted self-production

- **Develop cooperation with other agencies that are familiar with the non-affiliated population to channel fund for housing in this compartment.** The assistance of organizations such as FIRA that know well this sector and the market players would help improve risk assessment and allocation decisions for the channeling of SHF funds

- **Make refinancing loans more attractive.** The creation of a "bad bank" will alleviate the constraints that led SHF to look for opportunities to enhance the profitability of its operation. Return on Equity should not be a pricing component for a public development bank[63] that needs to develop the market, and should not be a profit center. If SHF margin were calibrated to cover only operational expenses and the cost of risk, it would become a more attractive funding option and would better fulfill its development mandate.

- **Manage new guarantee products.** SHF could be the managing entity of the proposed guarantee scheme. It should also consider extending the credit enhancement to the issuance of debt or MBS to private sector players, including eligible institutions of the popular financial sector.

The need of some new institutional or governance arrangements could be explored to define SHF's strategic reorientation, for instance the instauration of a steering unit within the MOF coordinating SHF's interventions with SEDATU. The capital adequacy of the development

[61] These entities vary depending on local conditions. There may be a need to foster the creation of specialized land developers in Mexico.
[62] The example of Ion Financiera, a recently established Sofom that lends to independent workers and small entrepreneurs and has access to SHF funding, could be an inspiration for the creation of new lenders aware of the potential of huge underserved segments.
[63] Opposite to the Institutes, who are primary level lenders.

bank should of course be assessed, after the defeasance of impaired portfolios, in the light of the proposed strategy[64].

Rec. 4: Develop new long term funding instruments

79. **Institutional investors have a large space to invest in mortgage–related securities but need to adjust their policy to a low inflation economic context.** An assessment of institutional investors' portfolios in 2010 showed the low percentage of MBS held -4%-, which can only have further decreased given the little number of issues since then. Investors do not mention any saturation effect even regarding the largest issuer, Fovissste. Inflows into the pension funds are expected to keep growing at a hefty pace in the coming years, increasing the need for investment instruments. On the other hand, the desindexation of mortgages can be an obstacle initially, but investors -even those who have long term liabilities to match, such as life insurance companies- need to recognize the stabilization of the macro-financial environment. They already started to progressively integrate this new context in their strategies, although sometimes with a shorter investment horizon.

80. **Securitization is a well-established instrument that is clearly needed by originators, but is too expensive for the private sector.** Beside the Institutes, it fits the situation of banks that need to untie capital to continue expanding, but is too expensive for banks today**.** A reform is needed to provide cheaper options to lenders through a new type of instrument clearly distinct from the existing MBS**.** It could also become eventually a tool for Sofipos and Socaps[65], which cannot easily issue debt in the market. An interesting pioneering experience for such a development will be the securitization of a diversified portfolio achieved by that one of the main Sofipos in 2016.

81. **One way to make securitization a more attractive option could be to develop a new framework for RMBS susceptible to result in lower funding cost.** Conditions to this end would be to be structure the new instrument in a way that clearly distinguishes it from the current Institutes' RMBS, while offering an equivalent degree of security, and include features to minimize spreads such as fostering higher market liquidity. Needless to say, a more economic type of RMBS could also benefit the Institutes.

82. **This is one of the routes chosen internationally to revive securitization, a tool that was largely rejected after the last global financial crisis.** The Basel Committee supported the development of the concept of Simple, Transparent Comparable Securitization (STC), to help investors more easily evaluate risks and returns. Simplicity involves the homogeneity of underlying assets and non-complex deal structures; transparency involves clear and exhaustive disclosure of information. The concept is designed to enhance investors' confidence in the instrument, and, where possible, support market liquidity. In addition, The Basel Committee defined quality standards, which resulted in July 2016 in allowing lower minimum risk weighting for securities held by banks (10% instead of 15% for senior tranches). Such a move will contribute to reduce their spreads. A similar concept has been designed in the European Union under the label "Simple Standardized Transparent "(SST) securitization.

[64] At December 31, 2015, SHF had a capital of MXN 18.2 billion, too which accumulated net profits of about MXN 4 billion could be added.

[65] Socaps are not allowed to issue debt. Before anything, it should be assessed whether securitizing portfolios creates liabilities for them.

The components of a Simple, Transparent and Comparable MBS framework
• Quality of underlying portfolios: homogeneity of loans, underwriting standards, exclusion of NPLs • Market information: loan by loan characteristics, underwriting criteria, verifiable loss performance, servicer's performance, projected cash flows under different scenarios • Structural characteristics: no more than 3 tranches, simple water fall, limited credit events, clear allocation of cash flows • Proper certification system (in the EU project, self-certification would be allowed) • Public register of conforming securities • Sanction regime for non-compliance by sponsors or servicers

83. **Mortgage covered bonds would be another, not exclusive, option to enable private sector lenders to obtain sufficiently attractive funding cost.** Covered bonds are straightforward funding instruments aimed to mobilize long term funding on the capital market thanks to their two basic structural characteristics: (i) enhanced security – they are first secured by the issuer's capital and standing as general debt obligation, and second by ring-fenced, collateralized pools of loans that cover the service of the bonds even in the case of the issuer's bankruptcy; and (ii) the high quality of assets they finance (lending criteria set by law, dynamic cover pool from which NPLs are regularly withdrawn and replaced, specific monitoring mechanism). This combination, to which must be added simple bond profiles conducive to better market liquidity than RMBS, results in funding conditions much more attractive than the unsecured debt issued by financial institutions – and also more attractive than securitization. Covered bonds are in addition less sensitive to confidence crises, and hence more stable as a funding tool, than securitization.

84. **The project of a covered bond law has been stalled in Mexico due to the concerns raised by asset encumbrance.** A legal framework for covered bonds was prepared in 2010 – 2012 ("bonos cubiertos"). However, it would have required a change in the banking law which prohibits pledging assets for the security of some creditors, unless there is a specific ruling by Banxico. It is of the essence of covered bonds to be issued by regulated credit institutions, i.e. only commercial banks and Sofomers now in Mexico. The concern was the impact covered bonds could have on depositors and the deposit insurer, who would rank behind secured debt instruments in an insolvency situation[66].

85. **International experience shows however that this issue should not be a roadblock to the development of covered bonds.** Quite a few countries used to have the same limitation or concern than the Mexican Authorities, and yet developed covered bonds. In Australia or New Zealand for instance, the banking laws expressly forbad secured debt by deposit taking institutions, but were amended. The same development is currently being prepared in South Africa. UK or Canada also introduced a covered bond framework after having held up the reform due to the depositors' subordination issue.

[66] Note that securitization has economically the same impact: assets are put out of the reach of creditors through bankruptcy remote structures. One difference is that covered bonds holders would still have a right on general assets pari passu with unsecured creditors if, in a n insolvency situation, the cover pool were insufficient. This hypothesis is very unlikely given the regular monitoring of the cover pool and overcollateralization – a feature common to both instruments.

86. **There are several ways to strike a balance between the special security granted to covered bond holders and unsecured creditors' protection.** Various options exist to address the issue of depositor's structural subordination[67]. The main approaches include:

- Setting a simple cap on the volume of covered bonds as a percentage of the assets of the issuing bank – caps vary from 4% to 20% (e.g. Australia, Canada, New-Zealand, Morocco draft legislation).
- Linking the issuance of covered bonds to specific capital requirements to ensure enough unsecured creditors' protection. The Italian framework sets different limits on the amount of assets included in the cover pool (25 % to 100 %) for different solvency ratios (from below 9 %, to over 11 %). A more targeted approach is to link capital requirements to the overcollateralization level of covered bonds, the one feature that actually reduces the volume of assets available to unsecured creditors in a bankruptcy situation. This linkage is achieved by the Danish system of capital centers, as well as by the special issuance vehicles used in France and Norway, which are credit institutions with their own capital adequacy requirements.
- Combining the two previous approaches. A best practice example is the Netherlands "healthy ratio" between covered bonds outstanding and the issuer's own funds (tier I). The ratio compares the capital base with the sum of (i) initial overcollateralization and (ii) assets that in the future could have to be transferred to the cover pool in a stressed scenario to maintain the bonds 'rating. The ratio is determined by the banking supervisor case by case for each institution. The UK also applies now individual issuance limits customized to each bank's financial strength.
- Setting disclosure requirements that enable supervisors and markets to assess the precise situation of unsecured creditors. A critical question in this respect is the volume and quality of assets available to them beside the assets used as collateral for covered bonds. Such a reporting has been defined by the European Banking Authority[68].

87. **New fiduciary duties would have to be established for both new instruments, for which the Hito platform could be responsible.** Both contemplated instruments would require specific monitoring, and possibly certification, by an independent entity that would ensure the compliance with standards and due diligence obligations. This entity could not be a regular auditor – whose activity would be itself subject to its oversight. An organization already exists in the Mexican market that has the required expertise, and the position in market, to play such a role, which would include a more general master servicer function: Hito, with SHF support. This new mandate would however be incompatible with the activity of transaction arranger.

88. **Investment rules and guidelines would have to be adjusted to recognize the safety, and potentially liquidity, of the new instruments.** These adjustments would include in particular, (i) for banks lower risk weights, LCR-eligibility at a high level, and the repo-ability of these securities, and (ii) for institutional investors, lower capital requirement when applicable (new prudential rules for insurance companies), new investment buckets and higher concentration risk limits.

[67] The issue is not considered as a major one in countries with an old covered bond tradition such as Chile or continental Europe.
[68] See EBA draft Implementing Technical Standards on Asset Encumbrance reporting.

Appendix I: Banxico: Indicadores Básicos de Crédito a la Vivienda

December 2015

Housing loans by banks and regulated Sofomes

(Sample covering about 2/3 of the market)

Créditos a la vivienda vigentes a diciembre de 2015 por destino[1/]

(Denominados en M.N. y a tasa fija)

Destino de crédito	Número de créditos	Saldo de crédito otorgado (millones de pesos)	Monto promedio a la originación del crédito (pesos)	Plazo promedio del crédito (años)	Tasa promedio ponderada por saldo (%)	Tasa mediana de la distribución del saldo (%)
Otorgados durante 2015	**405,368**	**122,859**	**311,937**	**8**	**10.2**	**9.6**
Adquisición de vivienda	100,313	99,041	998,797	21	9.6	9.5
Autoconstrucción	3,195	3,687	1,563,404	16	9.8	9.5
Mejoras a la vivienda	286,805	8,866	33,782	3	17.0	18.5
Pago de pasivos hipotecarios	10,180	7,577	761,085	15	9.1	9.0
Liquidez	4,875	3,689	784,640	15	12.3	12.6
Total de créditos a diciembre 2015	**929,909**	**396,419**	**491,856**	**12**	**10.4**	**10.3**
Adquisición de vivienda	475,432	346,035	835,949	20	10.2	10.3
Autoconstrucción	11,050	11,887	1,339,036	16	10.2	9.8
Mejoras a la vivienda	400,431	13,450	40,939	3	15.7	18.5
Pago de pasivos hipotecarios	20,622	14,351	747,891	15	9.3	9.0
Liquidez	22,374	10,696	595,860	15	12.9	13.7

1/ Se excluyen los créditos otorgados a empleados y ex empleados de instituciones financieras, créditos reestructurados y vencidos o con días de atraso, entre otros. Los créditos otorgados durante 2015 son los vigentes a diciembre. La suma de las partes puede no coincidir con el total debido al redondeo.

Fuente: elaboración propia con datos de CNBV.