BBVA Research

Creating Opportunities

Mexico Real Estate Outlook

First half 2020

Contents

Closing date: March 25, 2020

1. Summary

This edition of ***Mexico Real Estate Outlook*** is unique, as this is the first time we are able to anticipate the start of an economic crisis, rather than describing a crisis that has already happened. While the analysis presented in this edition primarily focuses on the close of 2019, by the end of this period there were already leading indicators for the start of this year. In the construction sector, housing market and mortgage activity, we already had information that pointed to a contraction even before there were signs of the approaching health crisis. The looming economic crisis in the face of decreased activity resulting from isolation measures was relatively clear, and the negative trend will continue to deepen for the sectors under review. There is no merit in predicting a decline in the economy under these circumstances; however, these studies will be relevant in narrowing down the negative impacts and envisioning the period of recovery. It is particularly difficult to make accurate predictions given the uncertainty surrounding the behavior of the pandemic. However, we have presented scenarios that we see as being the most likely outcomes for the different markets that we analyze.

When the 2020 crisis began, the construction sector had already experienced a year of contraction, thus the crisis period for this sector is likely to be at least as long as the period that was observed in 2009. The sector's GDP had fallen by 5% the year before, a figure that had not been seen for several years. This is due to a downturn in both of its two main subsectors: building and civil works. The latter had demonstrated negative performance for several quarters due to lower public investment, while building saw a decrease in terms of GDP in 2019. This is because demand for housing is not recovering, while productive building is currently in a low point that may extend as long as the economy continues to stagnate. Infrastructure could be expected to recover due to the insistence of the federal government on continuing flagship projects despite the outlook, but the figures show that this is not enough to reverse the negative trend. This sector may show the first positive growth rates by the end of 2021, but this will be a base effect in the face of the sector's steady decline and not a recovery to optimal levels.

The mortgage activity ended 2019 without significant variation. The total market grew by only 0.2% in real terms, and if we take the number of loans into account, it contracted by more than 6%. Banking grew by 3% in that period through the recovery of its share in the residential segment; however, this could be its last boost due to the incoming fall in job creation rates. With families not actively searching for housing and the approaching decline in employment, the market for new housing will be reduced even further and there will therefore be less room for residential building. Lower financing costs and the availability of credit lines will not be sufficient for the market to recover in these times of uncertainty and high unemployment. The mortgage market has regularly faced economic crises in terms of supply or demand, but we are now facing a crisis on both sides of the market for the first time, which will make this crisis more long-lasting. However, we estimate that while the credit portfolio will deteriorate in supply and demand, it will not reach levels of concern due to the quality of banking origination, the fixed rates on mortgage loans, and the generally low mortgage burdens assumed by Mexican families.

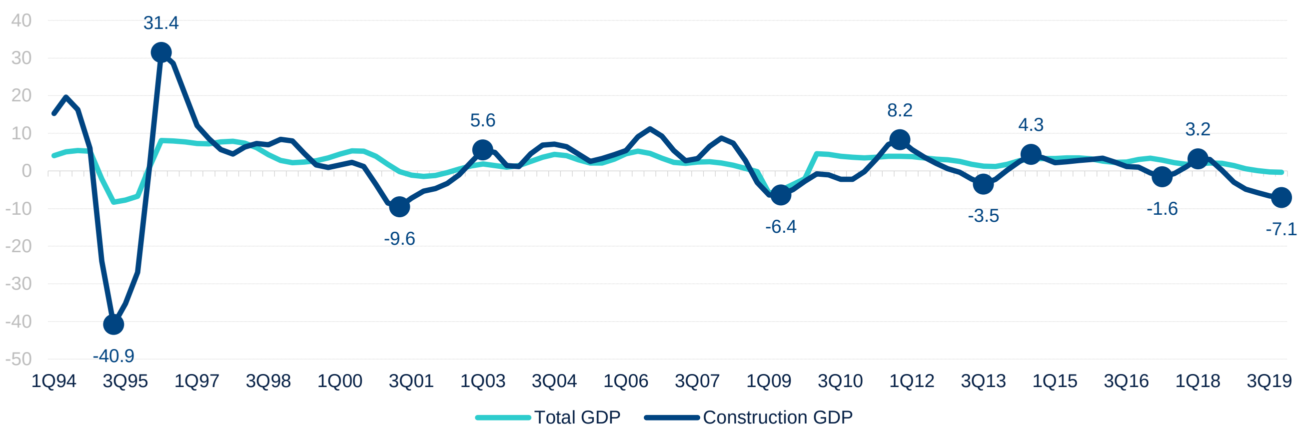
Finally, we will review the behavior of real estate investment trusts (FIBRAs) and their relationship with other sectors outside of the financial system and real estate services. The performance of these financial instruments is rarely linked to the performance of other sectors and their positive effects. Wholesale and retail trade are among the main beneficiaries, as are the industrial and tourism sectors. There is still room for further investment in the latter two sectors. With such uncertainty on the horizon, it may seem that opportunities are scarce; however, it is likely the best time to invest.

2. Market Conditions

2a. Construction turns the page from one rocky year to a worse one

The outlook for Construction at the end of 2019 was grim, but 2020 is off to an even more difficult start. Not since 2001 and 2002 have we seen a period of economic depression in this sector that spans two consecutive years. However, 2020 could turn out to be worse than the year prior, in contrast to 2002, where the downturn was less steep than in 2001. Construction GDP fell 5% in 2019 and we estimate that in 2020 it will further decrease beyond 10%, also in annual terms. Since the 1995 crisis, the Construction sector has reported a negative performance in seven different years. The most serious of these was that same year, with a contraction of 32.3%. Following this contraction, the international crises in 2001 and 2009 were the most difficult for the sector, which fell by 7.7% and 6.1% in annual terms, respectively. Neither case saw a rapid recovery. If this sector continues to fall in 2020, it will be in its worst five-year period within the last 30 years.

Figure 2a.1 **TOTAL GDP AND CONSTRUCTION GDP, CYCLICAL TREND** (YoY % CHANGE)

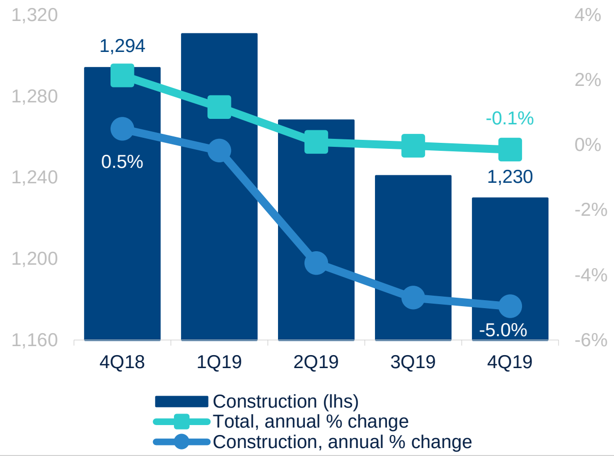


Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

The negative result is due to the poor performance of its three subsectors. Previously, only Civil Works was making a negative contribution to the sector, but now Building, which remains the largest subsector, is also performing poorly. The latest official data shows that Civil Works has been falling for 15 quarters, while Building has only been in decline from Q2 to Q4 2019. The contraction in Building is due to the sharp drop in demand for housing and productive building, while Civil Works continues to be affected by the decline in public investment in infrastructure.

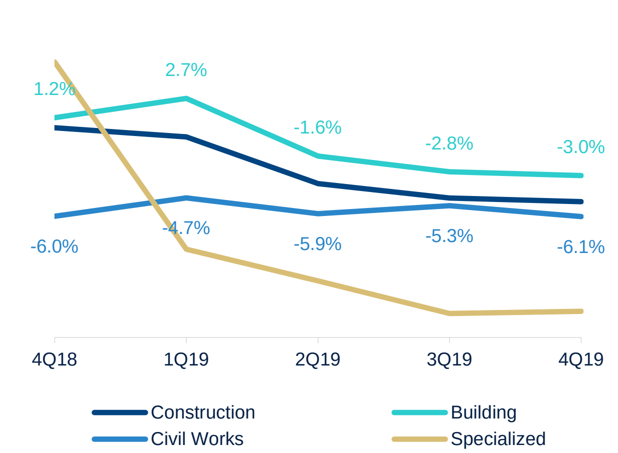
The outlook for 2020 is even worse. At the start of this year, lower activity levels were reported for all types of works, even before the cessation of activities due to the health crisis. This was to be expected against a backdrop of low demand for housing, a halt in the construction of industrial buildings and shopping malls, and an ever-decreasing investment in infrastructure. The most devastating blow has come from the pandemic, which led to the cessation of all non-essential activities. As a result, construction will see an even greater slowdown because only the flagship projects of the current administration are permitted to continue, in addition to the lower inputs due to the fact that these activities are considered non-essential.

Figure 2a.2 **CUMULATIVE CONSTRUCTION GDP (BILLIONS OF PESOS AND ANNUAL % CHANGE)**



Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

Figure 2a.3 **CUMULATIVE CONSTRUCTION GDP (YoY % CHANGE)**



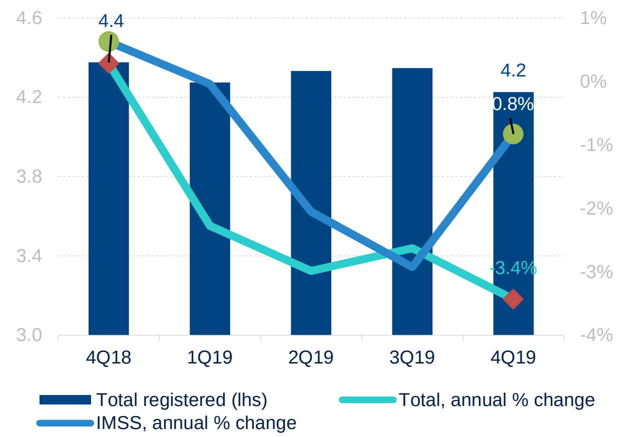
Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

Construction GDP showed negative annual rates in all four quarters of 2019. This effect accelerated from Q2 2019 onward, when Building stopped growing and began to fall for the first time since 2017; this figure was an outlier, however, given that there had been no sustained contraction of this subsector since Q1 2014, which was a result of the 2013 crisis caused by the main homebuilders leaving the market. Civil Works consolidates this negative result with its sustained fall, averaging below rates of -5%. Building has therefore stopped bolstering the sector and Construction GDP has collapsed as a result.

Construction falls in the face of an uncertain investment outlook

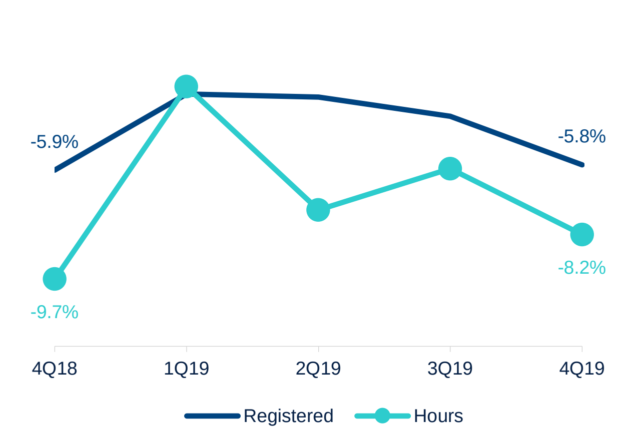
The main component of the aggregate demand for construction works is gross fixed capital formation, measured by the investments made by families in their homes, companies in productive building, or the different levels of government in infrastructure, generally speaking. With declining rates on all sides, lower output factors have been needed on the supply side. For example, the number of workers in the sector has fallen in both total jobs and formal jobs throughout 2019. This also serves as a warning of low short-term recovery prospects.

Figure 2a.4 **CONSTRUCTION EMPLOYEES (MILLIONS OF WORKERS)**



Source: BBVA Research based on data from ENOE (National Employment and Occupation Survey), INEGI (National Statistics and Geographical Institute) and IMSS (Mexican Social Security Institute)

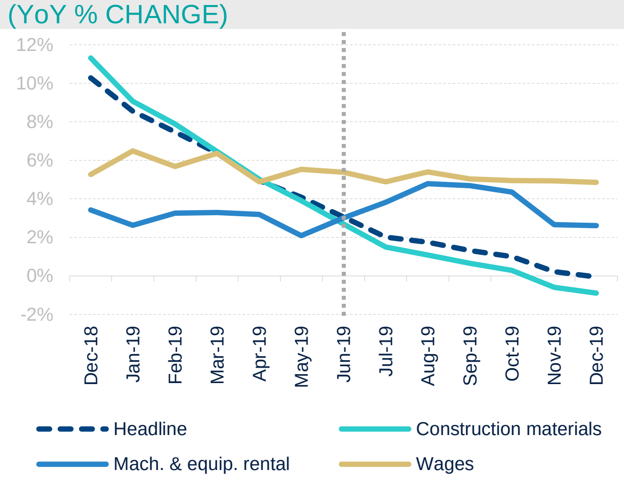
Figure 2a.5 **LABOR PRODUCTIVITY (YoY % CHANGE)**



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

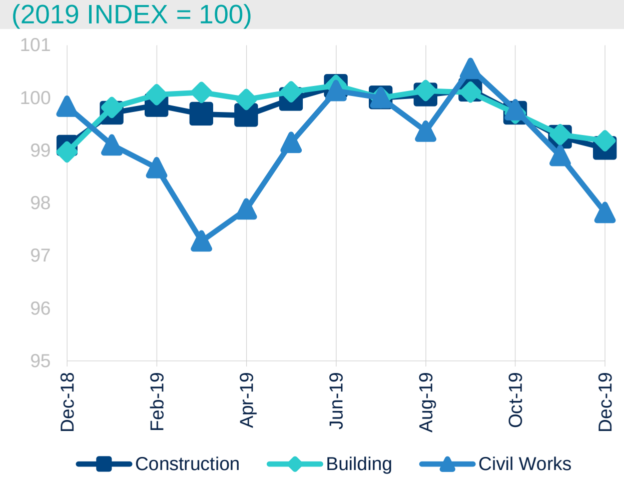
The slower increase in construction input prices has not been sufficient to increase output. As we had previously estimated, during 2019 we saw that the upward trend in costs faced by builders halted due to decreased demand for these inputs as a result of lower activity. It could have been expected that once the price increase had been moderated, supply would increase and there would be more construction in general, but it is clear that this will not be the case due to reduced demand and the cessation of activities as a result of the health crisis (we now have bricks, but no mortar).

Figure 2a.6 **NPPI CONSTRUCTION INPUTS (YoY % CHANGE)**



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

Figure 2a.7 **CONSTRUCTION NPPI (2019 INDEX = 100)**

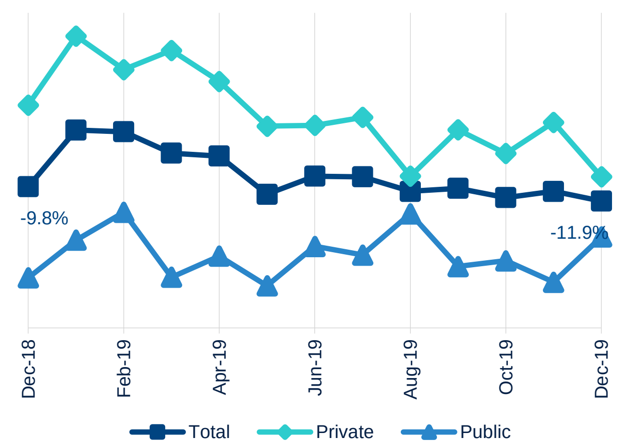


Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

On the other hand, it could be assumed that while output will not increase, the fall in the input price index could lead to broader margins for construction companies; however, this would also not be the case if activities are halted due to being considered non-essential. Moving forward, even these costs could increase as the exchange rate continues to depreciate, first being reflected in the renting of machinery and then in some imported materials.

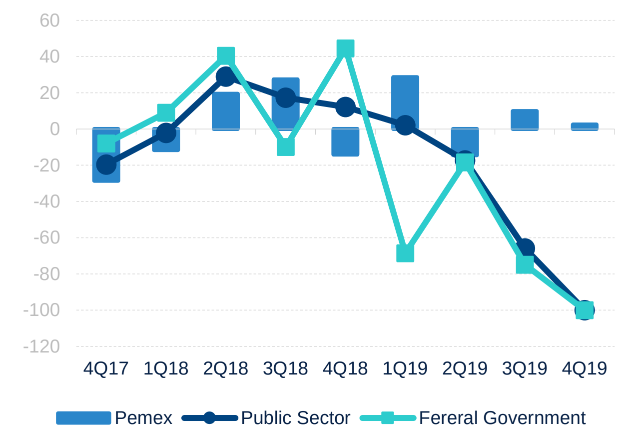
Construction input costs began to decline at the start of 2019, while the gross value of construction works, particularly private works, also fell. This seems contrary to economic logic, as lower costs should encourage supply, thus the answer to this dilemma must be related to decreased demand. One possible cause is the fall in public investment in infrastructure, which is confirmed by the sharp fall in public expenditure on physical capital. An inverse relationship is expected between the cost dynamics for input and output, while a direct relationship is expected with the amount of capital investment. According to 2019 figures, the fall in the gross value of construction is explained by the lower public budget in physical capital and not by input price levels.

Figure 2a.8 **GROSS VALUE OF CONSTRUCTION** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

Figure 2a.9 **PUBLIC EXPENDITURE ON PHYSICAL CAPITAL** (YoY % CHANGE)

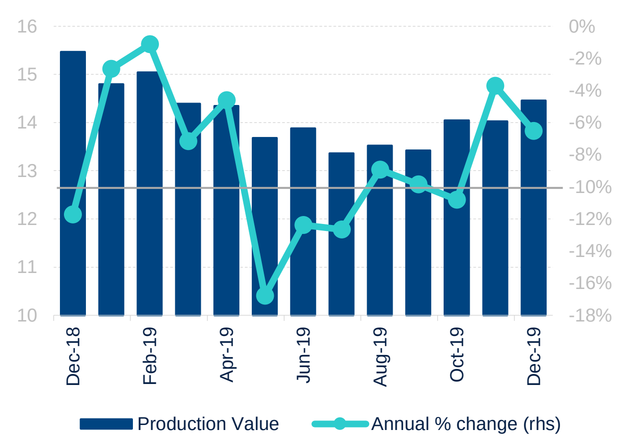


Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

This lower output value in the Construction sector can be seen in both Building and in Civil Works or Infrastructure. While it is more pronounced in Infrastructure, the output value for Building also declined in 2019. During 2018, Building added 184 billion pesos of gross value to its output, while in 2019, this fell to 169 billion pesos,[1] the lowest value since this survey began.[2] In the case of Infrastructure, the impact is over 9 billion pesos, with falls of more than 5% on average. This is also its lowest level ever recorded in real terms.

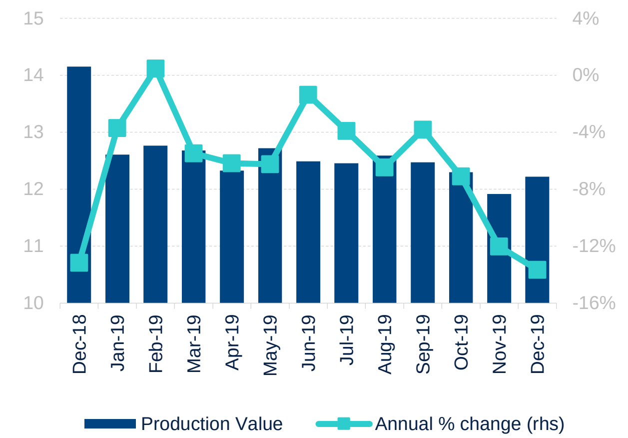
1: Constant pesos from 2013
2: The construction output value is obtained from the National Survey of Construction Companies (ENEC) carried out by INEGI.

Figure 2a.10 **BUILDING GROSS VALUE** (BILLIONS OF PESOS AND YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

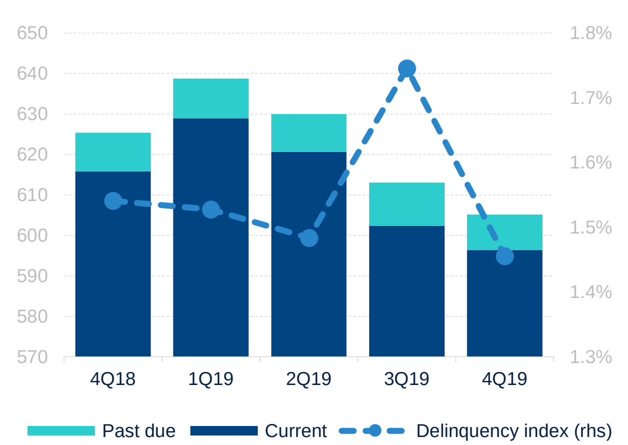
Figure 2a.11 **INFRASTRUCTURE GROSS VALUE** (BILLIONS OF PESOS AND YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

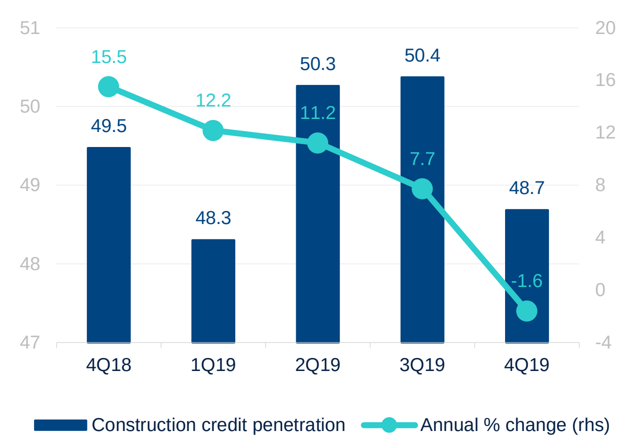
As activity in the sector has decreased, the bank credit balance has declined. Following a similar trajectory, the portfolio declined throughout the rest of the year after peaking in Q1 2019; however, it still remains above 600 billion pesos with a delinquency rate of less than 2%. It is also evident that investment is what drives the sector, because despite the lower cost of financing and the strong competition between financial intermediaries to serve this sector, no further financing is required no further construction is carried out. Given that the Bank of Mexico has relaxed its monetary policy, the TIIE (Mexican Equilibrium Interbank Interest Rate), which is the benchmark for most bank credit in this sector, has been following the same trajectory. This has led to the cost of financing falling significantly in 2019, but even so, more capital is not required if sufficient construction plans do not exist.

Figure 2a.12 **CONSTRUCTION CREDIT BALANCE** (BILLIONS OF PESOS AND %)



Source: BBVA Research based on data from the Bank of Mexico

Figure 2a.13 **BANK CREDIT PENETRATION** (% SHARE AND YoY % CHANGE)

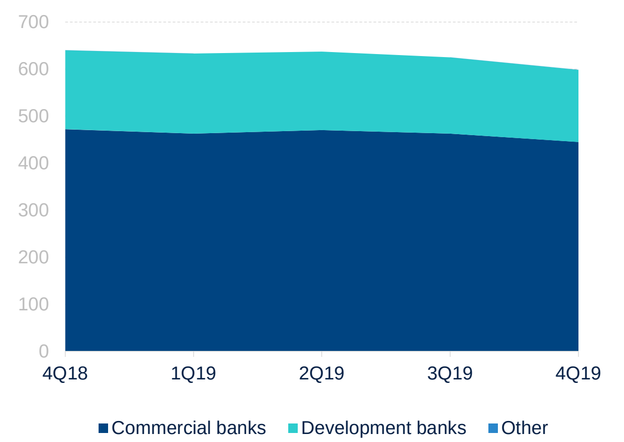


Source: BBVA Research based on data from the Bank of Mexico

Despite the foregoing, the level of credit penetration in relation to sectoral GDP remained stable at between 48% and 50% during the year. It therefore remains the business activity with the highest level of financing; although this is a structural feature, as this sector has more assets that serve as collateral. In any event, even with the contraction of the GDP, a large proportion of the market remains in need of financing. In 2020, we expect that the Central Bank will continue to lower its benchmark rate, and we will thus see a lower TIIE and, consequently, a lower cost of financing for the sector. This will provide an incentive for builders, but it will have no effect if demand for their works is not renewed.

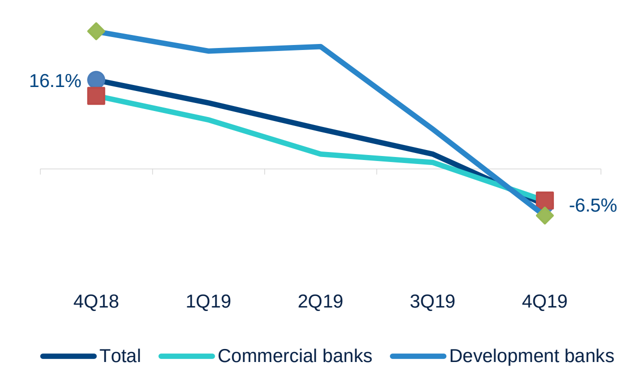
The construction credit portfolio has been smaller for both commercial and development banking. In the second half of 2019, development banking saw the largest fall in its portfolio, while the fall for commercial banking was more gradual. In total, the portfolio fell by 6.5% in real terms, a higher figure than the contraction of the real activity. Financial markets usually report variations, whether positive or negative, which are higher than their actual activity. This balance will not recover soon; we estimate that it will remain stagnant throughout 2020 before likely recovering in 2021. As development banking remains second-tier banking, commercial banking will regain lost ground first.

Figure 2a.14 **CONSTRUCTION CREDIT BALANCE (BILLIONS OF PESOS)**



Source: BBVA Research based on data from the Bank of Mexico

Figure 2a.15 **CONSTRUCTION CREDIT BALANCE (YoY % CHANGE)**



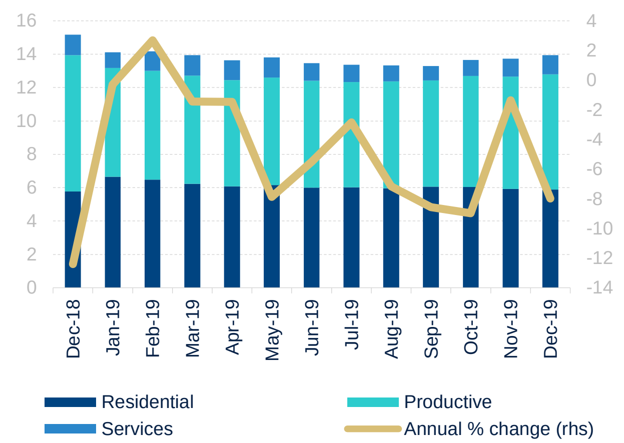
Source: BBVA Research based on data from the Bank of Mexico

Building, the backbone of the sector, is suffering in all of its activities

Building has always been the backbone of the Construction sector, and in previous years it had compensated for the continued fall in Civil Works. However, in 2019, it saw a sharp slowdown when faced with the combination of less residential, industrial and commercial building works. Building housing has been steadily contracting following the decreased in subsidies for purchasing new homes. Housing subsidies have been the major driver of building demand, specifically in the social housing segment, which accounts for more than 70% of the country's total housing market.[3] There was a slight recovery in the gross value of housing construction at the end of the year, but this was mostly due to a base effect than to an actual recovery. This is demonstrated by the fact that the number of construction projects recorded in the National Housing Register was below 250,000 at the end of the year, after being above 300,000 units

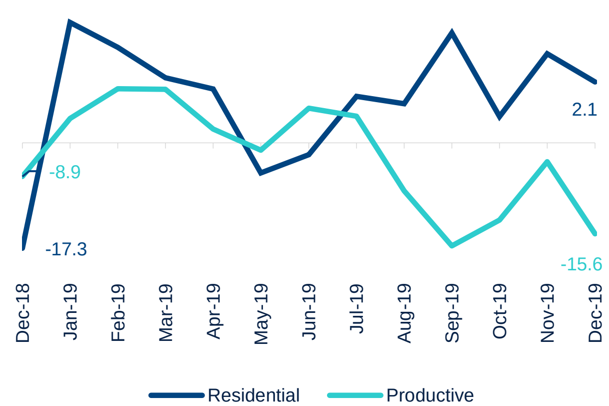
3: According to data from the National Housing Register at the end of previous years and even reaching over 700,000 during the housing boom. We estimate that in 2020, the number of housing units built will be under 200,000. In terms of productive building, the decrease is more pronounced due to fewer industrial buildings and shopping malls being built. The lower number of industrial buildings is linked to lower manufacturing activity and contraction of the industrial sector in Mexico, while shopping malls may already be showing saturation, especially since private consumption is slowing due to the deterioration of job creation and consumers' highly negative expectations for the economy.

Figure 2a.16 **BUILDING GROSS VALUE (BILLIONS OF PESOS AND YOY % CHANGE)**



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

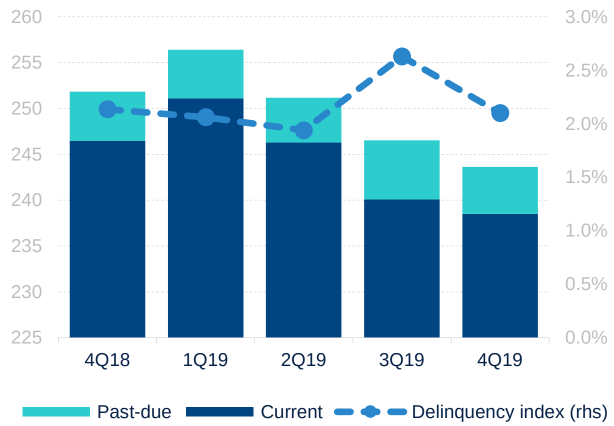
Figure 2a.17 **BUILDING GROSS VALUE (YoY % CHANGE)**



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

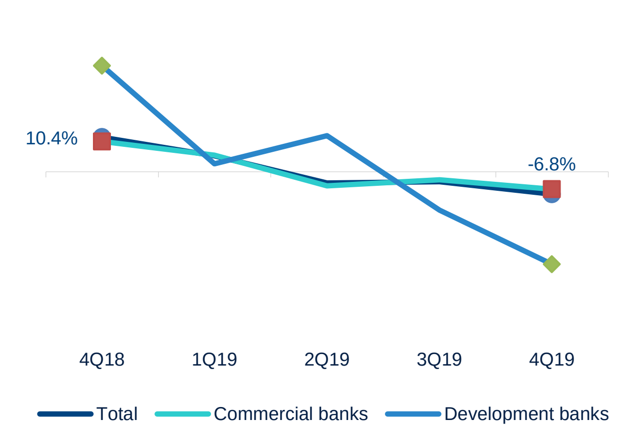
In terms of credit, it is a similar story as with the rest of the sector, given that building is mostly financed through the banking system and the highest share is in real activity and financial activity. This portfolio just reached 240 billion pesos with a delinquency of 2% after previously exceeding 250 billion pesos. This subsector is typically financed primarily by commercial banking, although development banking also has a share. In any event, development banking has lost most of its portfolio, while the commercial banking portfolio has barely decreased. However, this negative variation is significant when we consider the fact that it was growing at a double-digit rate in real terms just one year ago. As mentioned above, the lower cost of financing has also not encouraged companies to take out more loans to carry out this type of work. This trend will not change at all this year, and, in the best case scenario, we can only hope for a recovery by the second half of 2021.

Figure 2a.18 **BUILDING CREDIT BALANCE**
(BILLIONS OF PESOS AND %)



Source: BBVA Research based on data from the Bank of Mexico

Figure 2a.19 **BUILDING CREDIT BALANCE**
(YoY % CHANGE)



Source: BBVA Research based on data from the Bank of Mexico

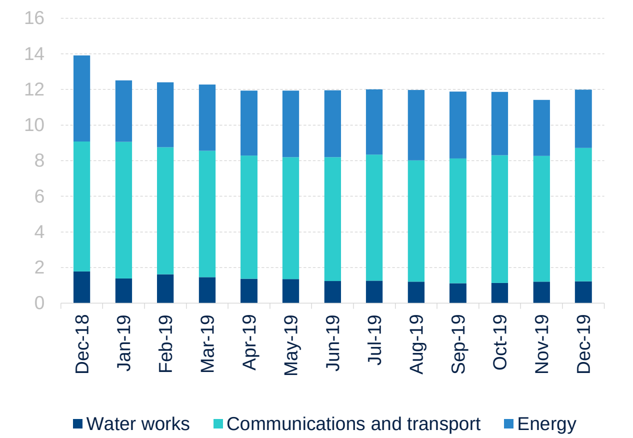
The entry into force of the USMCA will boost investment in the industrial sector, which should lead to increased construction of industrial buildings. This would lead to a slight uptick for this subsector, both in terms of real activity and in financial activity, but it would not be enough to recover lost ground before a period of 12 to 18 months.

Infrastructure doing well, everything else still in decline

Civil Works is following an even more pronounced negative trend than Building. Despite an increase of more than 10% in real terms in the public works budget for 2019, this subsector is not improving. This is partly due to expenditure reallocations, but also to the delayed start of this administration's flagship projects, as well as the fact that there is still no National Infrastructure Program over one year after the new government came to power.

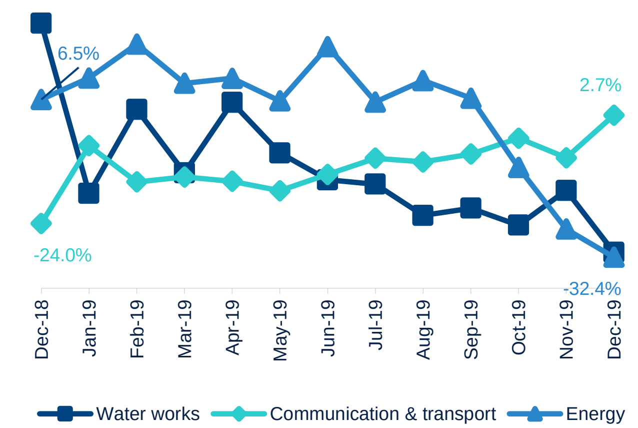
For the first time, the value of this subsector's output is under than 150 billion pesos in one year. This represented an annual decline of 5.9% compared to 2018, during which it had a value of 159 billion pesos. The public sector continues to hold the largest share in these kinds of works (65.6% in 2019, although it is shrinking year on year). This negative result is primarily from the public sector, which saw 14.2% less output in 2019 compared to the previous year. In contrast, the private sector grew 16.5% over the same period. We could have expected this to happen again in 2020 based on the National Infrastructure Agreement signed by the private sector, however, the outlook is uncertain due to the fact that only the federal government's energy and transport projects are permitted during the current health crisis.

Figure 2a.20 **INFRASTRUCTURE GROSS VALUE** (BILLIONS OF PESOS)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

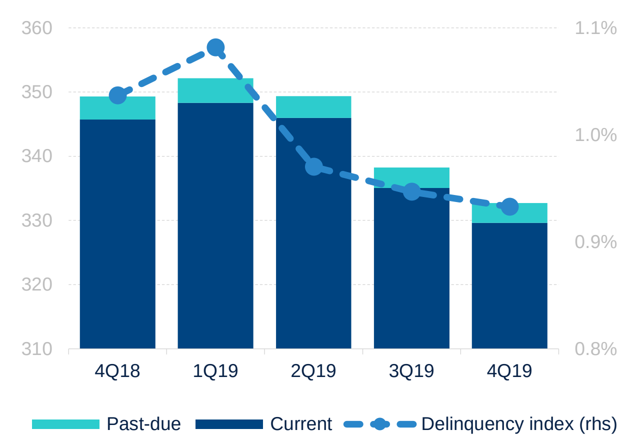
Figure 2a.21 **INFRASTRUCTURE GROSS VALUE** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

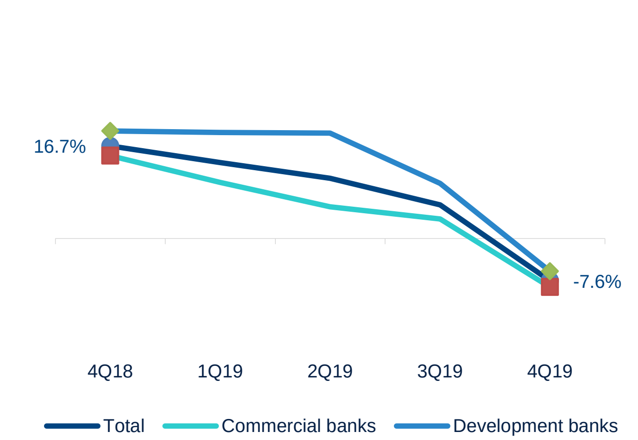
By type of project, energy infrastructure remains unchanged in real terms, which stands as progress compared to recent years. The value of electrical infrastructure projects fell, but this is offset by hydrocarbon projects due to the current federal administration's large investment in the oil sector. Electricity works could improve in 2020 as the Federal Electricity Commission (CFE) has been granted permits for power plants. This, together with the oil sector projects, could yield growth for 2020 after more than five years of decline. On the other hand, transport and communications infrastructure has declined by 8.9% in real terms.

Figure 2a.22 **INFRASTRUCTURE CREDIT BALANCE** (BILLIONS OF PESOS AND %)



Source: BBVA Research based on data from the Bank of Mexico

Figure 2a.23 **INFRASTRUCTURE CREDIT BALANCE** (YoY % CHANGE)



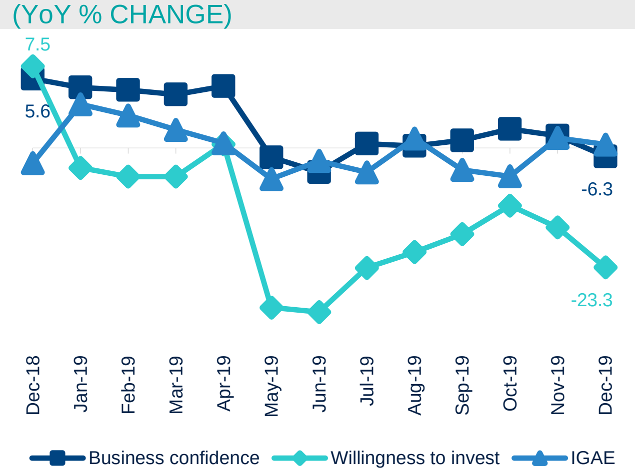
Source: BBVA Research based on data from the Bank of Mexico

Bank credit to infrastructure follows the same dynamic as its real activity, reflecting Building. The balance of this portfolio is now below 340 billion pesos after previously exceeding 350 billion pesos. The good news is that delinquency remains low. As in the rest of the sector, low interest rates will not lead to an increase in the portfolio unless activity also increases.

Construction will continue to fall in 2020, even more steeply than in 2019

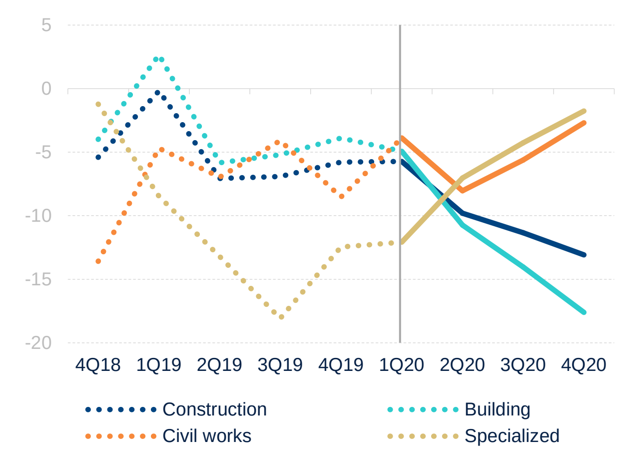
Last year we had an optimistic view of the Construction sector, which has now gone out due to the current reality. Public investment in Infrastructure was not what was expected and Building works for housing and commercial began to contract sooner than expected, steepening the sector's decline. Our must now inevitably change to a negative outlook based on the figures from the end of 2019, leading indicators from the start of 2020, and the inactivity in the sector as a result of the health crisis. There are no signs of recovery for Building works, without which the sector will not be able to resume growth. If the USMCA enters into operation quickly in 2020 and global value chains in our region are reactivated, the construction of industrial buildings will increase in line with investment, mainly foreign direct investment (FDI) that could occur to meet regional content requirements. However, we are unlikely to see progress in housing and shopping malls. In terms of Civil Works, only major Federal Government energy and transportation infrastructure projects seem likely to improve the subsector, while communications, transportation and hydraulic projects are showing no signs of improvement.

Figure 2a.24 **LEADING INDICATORS (YoY % CHANGE)**



Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

Figure 2a.25 **CONSTRUCTION GDP (YoY % CHANGE)**



Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

The negative result is largely due to inactivity caused by the current situation, but it should be emphasized that there were already indicators that pointed to a contraction in this sector prior to the onset of this health crisis, such as the value of output reported by construction companies, industrial activity in construction, housing records and the lack of a National Infrastructure Program. Monetary policy aimed at lowering credit will not have a significant effect if there is no activity. Even if interest rates fall, credit will not be able to grow if these companies are not allowed to resume their activities and investment is increased.

We estimate that Construction GDP will fall 13% in annual terms if the current conditions are maintained. This time Building works will decline the most, while Civil Works will follow a negative trend, but to a lesser extent thanks to energy and transportation projects. The sector may begin to grow again toward the end of 2021, first as a base effect and then as a result of the return to normal activities. Without high investment, however, there will be no recovery to the levels of five years ago. It is time to assess a change in public policy strategy to redirect the resources allocated for flagship projects, which will be profitable only in the long term at best, and to focus these resources on the health sector to bring an end to the crisis as soon as possible, recover lost jobs, stimulate housing demand, increase productive investment, and allow private investment in the energy sector.

2b. Banking recovers high-value segments

Introduction

In the last edition of ***Mexico Real Estate Outlook***, we emphasized that a contraction in mortgage lending by Public Housing Institutes could open the way for increased commercial banking activity, mainly in residential segments. Furthermore, the sliding exchange rate, which had begun in the second half of 2018 and continued during the first months of 2019, also constituted an incentive. Expectations for a higher exchange rate motivated residential market conditions at the time, albeit in a non-structural way, and this was reflected in more banking-led mortgage origination for much of 2019.

Meanwhile, the recovery of real wages and the remaining effects of the high rates of new IMSS (Mexican Social Security Institute) enrollees in recent years were reflected in what we think will be the last boost in demand for the current cycle. This factor, which, as mentioned before, is the main determinant of mortgage loan demand, grew by less than 2% in 2019, while by 2020, growth will undoubtedly be negative due to the COVID-19 pandemic. Even the expectation of lower financing costs resulting from the cycle of decline in interest rate markets may not incentivize demand, given that we are facing a global recession and high uncertainty caused by the COVID-19 pandemic.

Mortgage banking grew 3% in real terms in 2019

In 2019, the mortgage market registered virtually zero growth, just 0.2% in real terms in the financed amount. Public Housing institutes maintained the same trend as the previous year; Infonavit (Institute of the national housing fund for workers) registered a 2% contraction, while FOVISSSTE (Housing fund of the institute of social security and social services for state employees) fell by 4.8%, both in real terms at the end of December.

Commercial banking achieved a 3% growth in the amount of mortgage financing in real terms in 2019. This progress was surprising in a context of uncertainty and widespread economic slowdown. However, it should be noted that the rate of mortgage origination was more robust during the first half of the year. Between January and June, banking achieved 6% growth in the amount of financing in real terms, but this growth rate increasingly slowed from July onward. We must also acknowledge that a base effect occurred with regard to a slow start in 2018 prior to the election period. Moreover, the increase reflects strong formal job creation between 2016 and 2018, the effects of which are often reflected in the mortgage market with some delay.

While the average amount of bank credit remains at levels close to 1.5 million pesos, a 4.2% decrease in real terms was recorded in December 2019 compared to the same month in 2018. This is due to the change in the Federal Mortgage Company housing price index, which updated its 2012 base using weightings from 2017. Given that the adjustment factor used to obtain the constant values of the financing amount is based on this indicator, annual inflation has registered a certain slowdown, and therefore, as the number of mortgages placed is higher than the previous year, this has resulted in a slightly lower average amount in real terms.

Table 2b.1 **MORTGAGE ACTIVITY: CREDITS AND FINANCING AMOUNTS AWARDED PER ENTITY**
(THOUSANDS OF CREDITS AND BILLIONS OF PESOS AT 2019 PRICES; CUMULATIVE FIGURES)

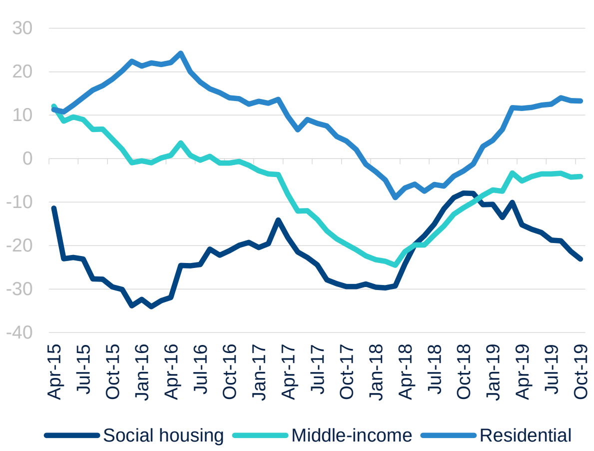
Mortgage Origination	Number of credits (thousands)			Credit amount (billions of pesos)			Average amount (thousands of pesos)		
	Dec-18	Dec-19	YoY % change	Dec-18	Dec-19	Real YoY % change	Dec-18	Dec-19	Real YoY % change
Public Institutions	**419.5**	**384.0**	**-8.5**	**199.4**	**194.3**	**-2.5**	**475**	**506**	**6.5**
Infonavit	370.8	335.1	-9.6	161.7	158.4	-2.0	436	473	8.4
FOVISSSTE	48.7	48.9	0.5	37.7	35.9	-4.8	774	734	-5.2
Private Sector*	**126.0**	**135.5**	**7.5**	**192.7**	**198.5**	**3.0**	**1,529**	**1,465**	**-4.2**
Banks[1]	126.0	135.5	7.5	192.7	198.5	3.0	1,529	1,465	-4.2
Other									
Subtotal	**545.5**	**519.5**	**-4.8**	**392.0**	**392.8**	**0.2**	**719**	**756**	**5.2**
Co-financing[2] (-)	29.4	35.8	21.8						
Total	**516.0**	**483.6**	**-6.3**	**392.0**	**392.8**	**0.2**	**760**	**812**	**6.9**

*Although there are other private credit institutions (such as non-regulated agents), these are excluded due to a lack of reliable public information.
1: Includes loans for self-construction, restructuring, acquisition, loans to former employees of financial institutions, and loans for payment of liabilities and liquidity.
2: Loans granted in conjunction with Infonavit and FOVISSSTE.
Note: the adjustment factor is based on the Federal Mortgage Company (SHF) housing price index; 2017 Base = 100
Source: BBVA Research based on data from Infonavit, FOVISSSTE, the National Banking and Securities Commission (CNBV), and SHF

The residential segment took the lead in banking growth

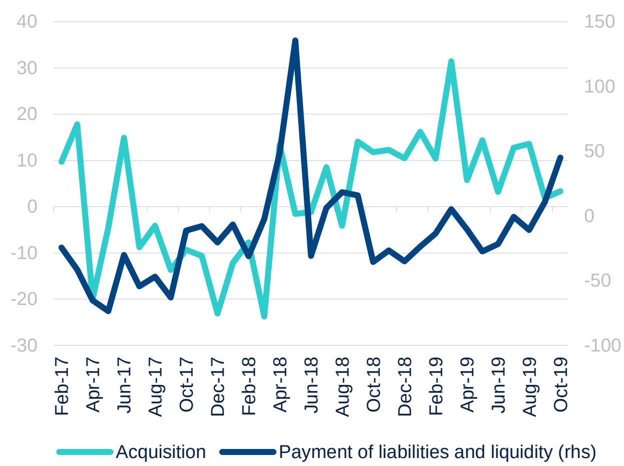
While the performance of the banking system in 2019 during a context of high uncertainty and little room for expansion must be recognized, it should also be noted that the social and middle-income segments, which are mostly served by public institutes, did not have the same success.

Figure 2b.1 **BANK MORTGAGE LOANS**
(YoY % CHANGE)



Source: BBVA Research based on data from CNBV

Figure 2b.2 **BANK MORTGAGE LOANS**
(YoY % CHANGE)



Source: BBVA Research based on data from CNBV

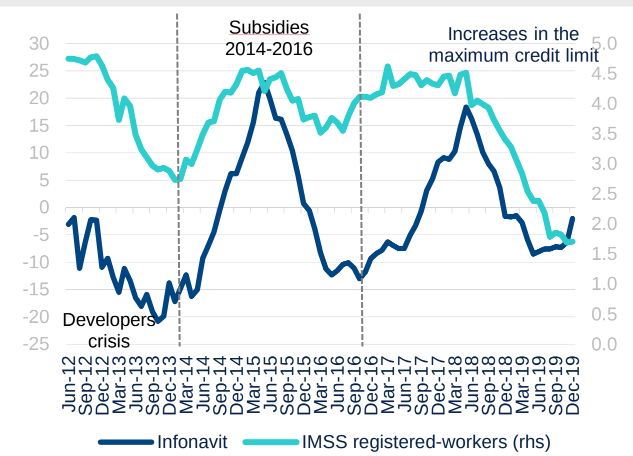
While the residential segment closed 2019 with a real-term cumulative growth of 13.3% in the amount placed, the middle-income housing segment fell short, closing out the year with a 4.1% decrease.[4] Social housing continues to lose market share, with banking representing less than 3% of the total amount placed and negative growth rates over the past 5 years.

Products other than for home purchases, such as re-financing and liquidity mortgage loans, represented only 6.7% of the total generated by banking in 2019. Despite this, these banking products tend to pick up when a cycle of low interest rates begins, as is currently the case. As a point of reference, we should recall that between 2012 and 2015, a period in which mortgage interest rates fell significantly, competition among banks greatly boosted these alternatives and together came to account for more than 10% of the total financing granted.

Employment continues to influence the real estate cycle

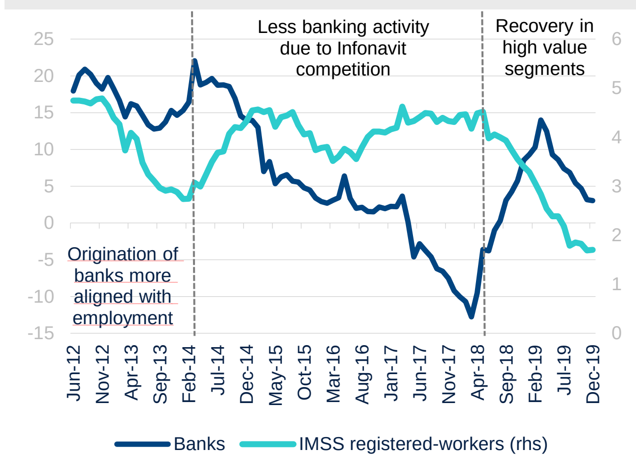
Low housing institute activity made room in banking segments in which Infonavit had competed fiercely in recent years. In fact, when considered from a long-term perspective, it is understandable that less institute origination is occurring after having grown at high rates in recent years, during which subsidies and credit ceiling increases came at a time when growth rates in the number of IMSS enrollees stood around 5%.

Figure 2b.3 **INFONAVIT CREDIT ORIGINATION AND IMSS ENROLLEES** (YoY % CHANGE)



Source: BBVA Research based on data from Infonavit and IMSS

Figure 2b.4 **BANK CREDIT ORIGINATION AND IMSS ENROLLEES** (YoY % CHANGE)



Source: BBVA Research based on data from CNBV and IMSS

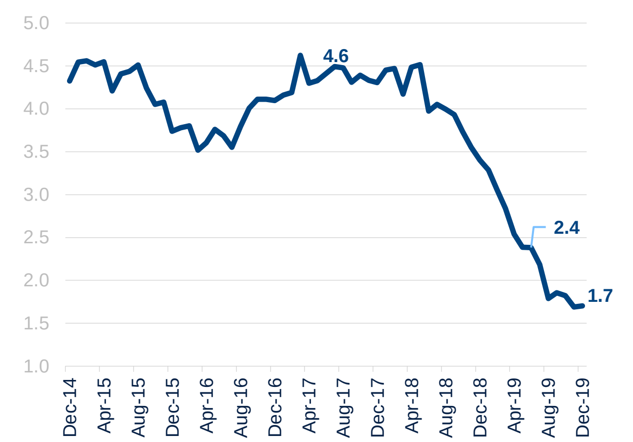
We believe that the decision by Infonavit to withdraw from the residential market is a very wise policy decision, since entering this segment only resulted in a displacement in commercial banking and not a greater provision of credit. It would be better for the institute to focus on underserved segments.

Commercial banking, on the other hand, which had been less active due to fierce competition from Infonavit, recorded significant growth during 2019. This is especially positive given the context of uncertainty and reduced economic activity. However, we must also take into account that this is due to a base effect from poor performance in 2018 and

4: Real growth rates updated using constant prices in accordance with the Mexican Consumer Price Index.

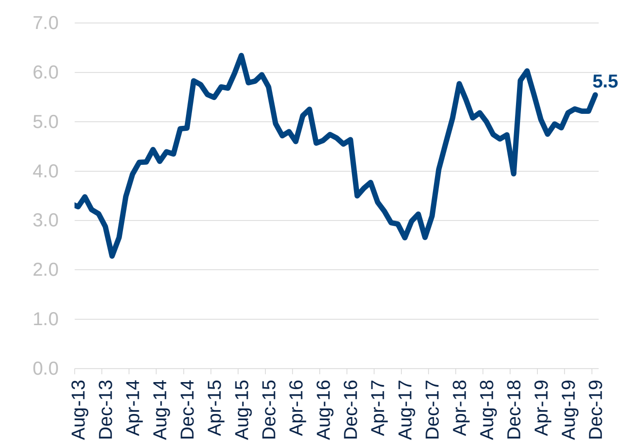
that the boost is a result of the growth in mortgages only in the most expensive segments, which involve higher credit amounts. It also reflects an increase in real wages, which is in turn explained by the decrease in inflation.

Figure 2b.5 **IMSS ENROLLEES (YoY % CHANGE)**



Source: BBVA Research based on IMSS data

Figure 2b.6 **ACTUAL TOTAL WAGE BILL (YoY % CHANGE)**



Source: BBVA Research based on data from IMSS and Banxico

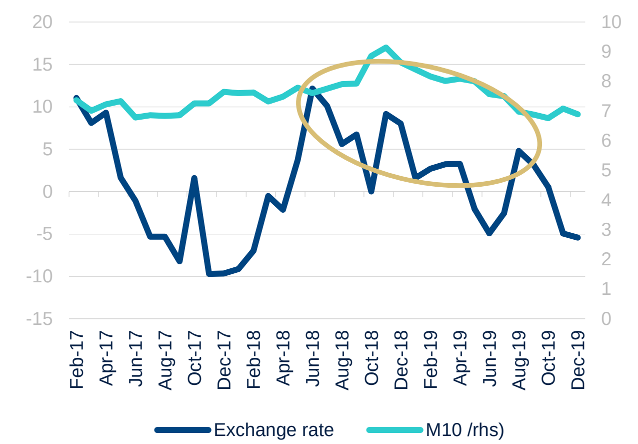
This is why demand for bank mortgage loans in the high-value segment is recovering at the same time as employment is growing at rates below 2%. The reason for this is due to the combination of two factors. First, while the slowdown in employment became evident during the second half of 2018 and throughout 2019, it had been growing at rates close to 5% the previous two years. In this regard, we know that demand for mortgage loans is determined by formal IMSS employment, but with an average delay of between 18 and 24 months. In other words, once an IMSS enrollee is entered into the system, and when said enrollee wishes to buy a house, it takes this amount of time to complete the purchase once they have found permanent employment. These time periods are usually required by any bank as part of their criteria to qualify for a mortgage loan.

We could therefore say that, considering the significant contraction in formal employment that will be seen as a result of the COVID-19 pandemic, the growth in banking in 2019 will turn out to be the last boost that IMSS employment can provide, in addition to the formalization programs of previous years, a phenomenon which has now ended. While it is true that real wages have also recovered due to the regulatory increase and low inflation, the recovery in purchasing power is not an encouraging sign because lower consumer prices are the result of lower economic activity. This factor will be more than offset by the loss of over one million formal jobs that we estimate will be seen this year.

Another short-term factor that was also able to promote mortgage financing demand toward commercial banking was the slide in the exchange rate that took place during part of 2018 and the first quarter of 2019. While in April 2018 the exchange rate stood at 18.40 pesos to the dollar, in November it stood at 20.30 pesos, representing a depreciation of 10.32% in just seven months. The exchange rate then stabilized over the following months and closed that year at 19.10 pesos to the dollar.

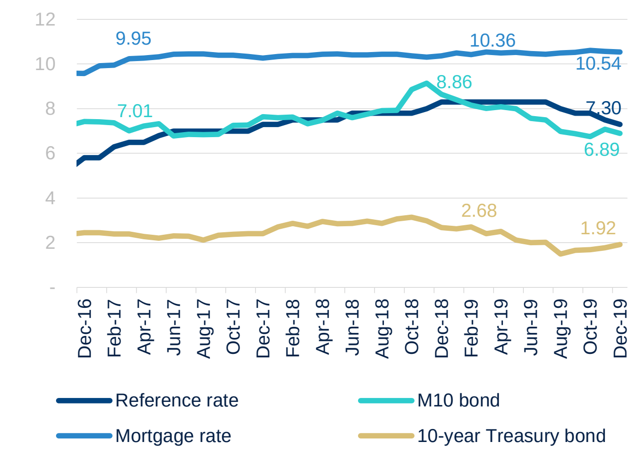
It is important to mention that this should be considered to be temporary, because in view of the uncertainty that was carried over from the elections, the pending signature of the USMCA, and the drop in PEMEX's rating that occurred at the time, there was a brief moment when it was expected that the exchange rate would continue to increase. This made the purchase of homes for retirement housing and for rental platforms in high-value tourist areas particularly attractive.

Figure 2b.7 **EXCHANGE RATE AND TEN-YEAR BOND** (YoY % CHANGE AND % NOMINAL RATE)



Source: BBVA Research based on data from Banxico

Figure 2b.8 **INTEREST RATES** (% NOMINAL ANNUAL RATE)



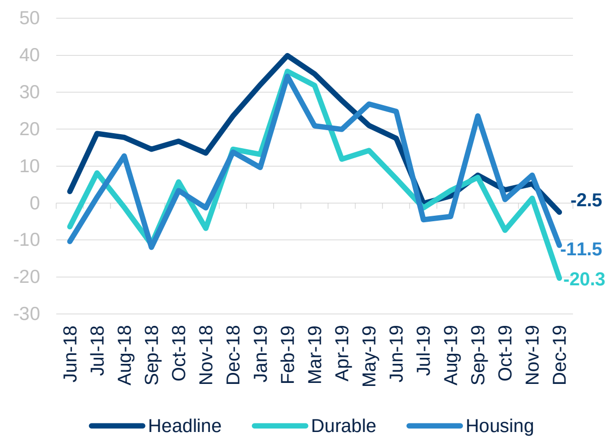
Source: BBVA Research based on data from Banxico and CNBV

This was reinforced by expectations for an increase in mortgage interest rates. As explained in previous editions, the cost of financing in the housing market responds to changes in long-term rates. The ten-year bond in particular, known as M10, had seen gains throughout 2018, especially following the announcement of the cancelation of the new Mexico City International Airport and the consequent increase in the perception of country risk. Given the delay effect between M10 and mortgage rates, which is around 6 or 8 months, this fostered expectations for the increase that eventually occurred. The bank's average mortgage rate was 10.41% in June 2018, reaching 10.61% in October 2019.

However, it should also be emphasized that although the monetary transmission of the M10 to the mortgage market is proven, around one third of this is due to the fierce competition between banks. This is why this increase was limited and also reflected the end of the cycle of increasing long-term interest rates, as well as the FED ten-year treasury bond once the perception of country risk began to decline due to expectations that new presidential administration would be fiscally responsible and that the new trade agreement with the United States and Canada would be approved,

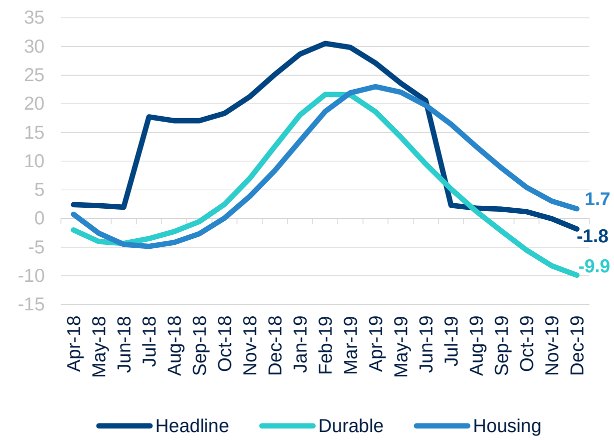
Consumer confidence also reflected this behavior during 2019. While the index registered a strong uptick overall following the 2018 presidential election, this growth slowed down throughout 2019, and is now growing at much more moderate rates as of December. The index for durable goods also registered a contraction in December of 7.4% compared to the previous year, while housing confidence closed the year with a growth of 3.6%. This difference is due to the fact that while housing is considered a durable good, its fixed-rate financing model is different from most of the durable goods that make up the index, which are granted loans indexed to the TIIE and respond to changes in short-term rates.

Figure 2b.9 **CONSUMER CONFIDENCE** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

Figure 2b.10 **CONSUMER CONFIDENCE, EXCHANGE RATE** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute)

Prices growth continues despite lower output rates

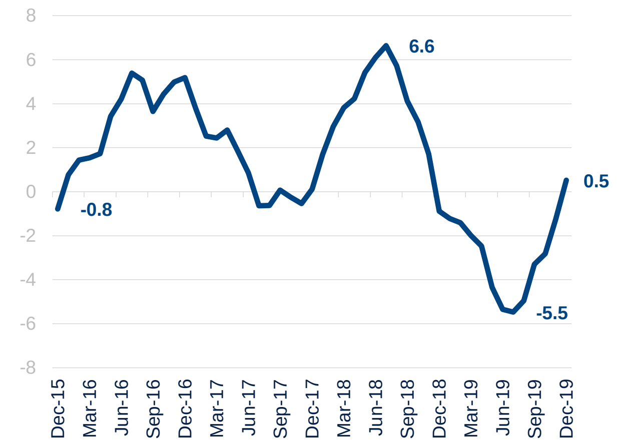
The downward trend in home building continued throughout 2019. The data from INEGI's National Survey of Construction Companies (ENEC) and data from the National Housing Register (RUV) both tell the same story.

In the case of the ENEC, the average value of housing output by companies fell by 2.8% in real terms during 2019. This was in spite of the trend that reversed after July, when there was a noticeable turning point that made it appear to be on the road to recovery. However, this was mostly due to an increase in margins and higher sales in residential segments, so by the end of December it was barely noticeable, with an increase of 0.5% in annualized figures.

In fact, if we look at how housing prices behaved during 2019, we can see that they gradually began to slow down. However, they were still influenced by the transmission of high prices for materials such as cement and steel during the previous two years. This is explained by the delayed effect of new housing projects, as construction on many of the building projects that were completed and/or placed in 2019 began 12 months in advance and were also possibly the remains of projects from 2018.

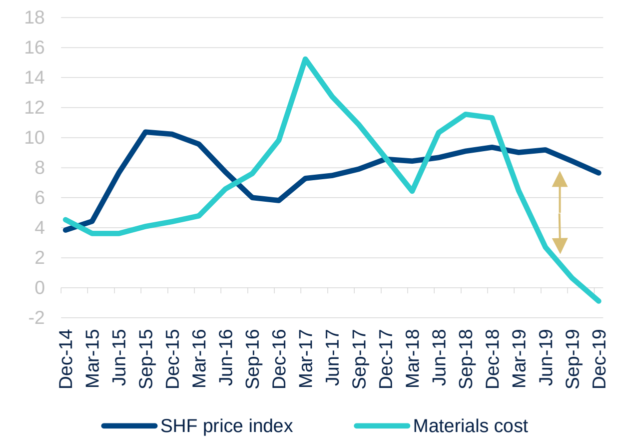
Once these projects were completed, the halt on construction in 2019 observed during the first year of the new federal administration was reflected in a depressed demand for inputs, resulting in a dramatic fall in prices. As of December, the national producer price index for materials in the construction sector shrank by 0.9% compared to the previous year, keeping housing construction margins high during 2019.

Figure 2b.11 **HOUSING OUTPUT** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENEC (National Survey of Construction Companies)

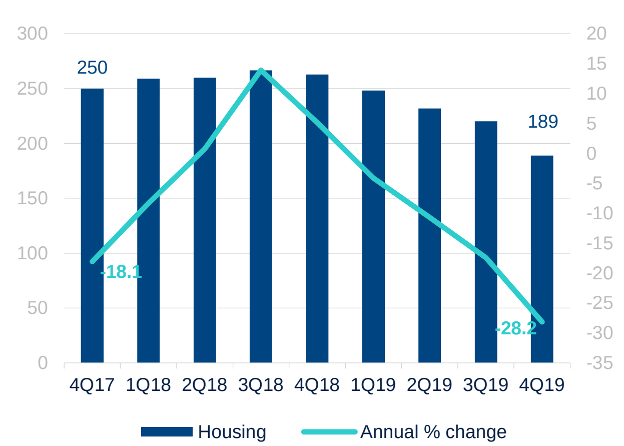
Figures 2b.12 **HOUSE PRICES AND CONSTRUCTION COSTS** (YoY % CHANGE)



Source: BBVA Research based on data from INEGI and SHF

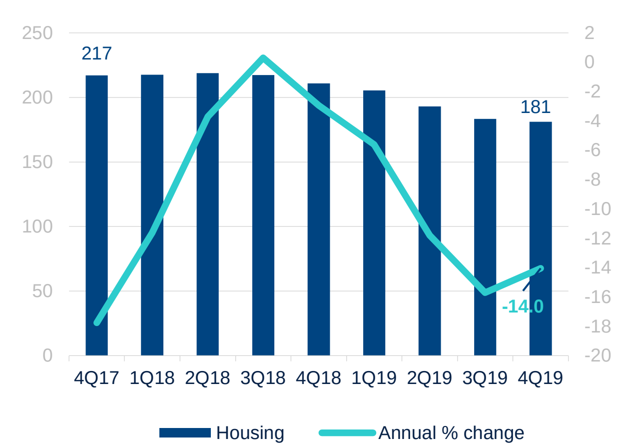
However, this effect is no longer sustainable given that prices will continue to slow down, because, as we have already seen, lower job creation will mean decreased demand for mortgage loans. Even during 2019, according to RUV data, the number of home building projects fell by almost 30% in annualized figures as of December. We attribute this fall to the uncertainty associated with decisions made by the new federal administration. This figure includes all works between 1% and 89% construction completed.

Figure 2b.13 **HOUSING BUILDING PROJECTS, RUV** (THOUSANDS OF RECORDS AND YoY % CHANGE)



Source: BBVA Research based on RUV data

Figure 2b.14 **INVENTORY OF NEW HOUSES IN THE RUV** (THOUSANDS OF RECORDS AND YoY % CHANGE)

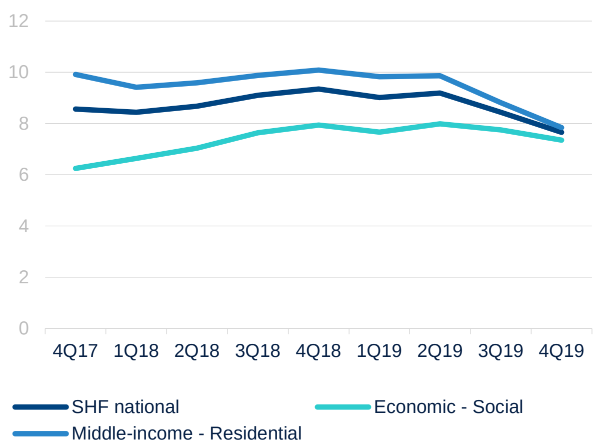


Source: BBVA Research based on RUV data

Inventory of new houses, that is, those with basic services (water, light and drainage) and for which at least 90% of the construction is completed, decreased 14% in the same period.

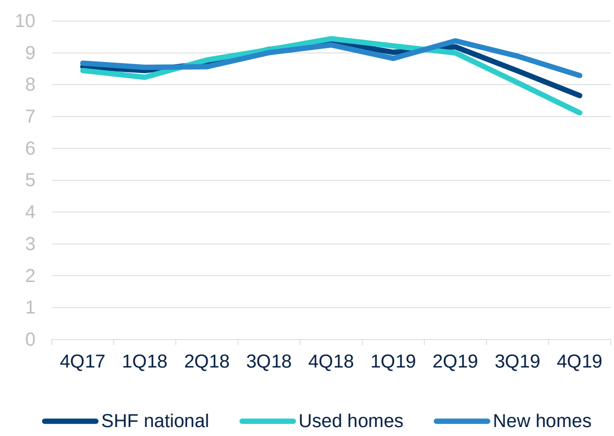
This reflects the fact that supply is decreasing, but this is mostly the result of decreased demand, which, in addition to economic uncertainty, keeps builders cautious. As on other occasions when justified by the economic cycle, we consider this to be a good thing, as it prevents the market from becoming saturated with new houses that could not be put on the market, a situation which would jeopardize the value of real estate guarantees, which are continuing to grow in value, although at slower rates. Due to the effect that the COVID-19 pandemic will have on formal employment, we anticipate more significant declines in project volume going forward.

Figure 2b.15 **HOUSING PRICE INDEX (YoY % CHANGE)**



Source: BBVA Research based on data from SHF

Figure 2b.16 **HOUSING PRICE INDEX (YoY % CHANGE)**



Source: BBVA Research based on data from SHF

According to the SHF (Federal Mortgage Company) price index, house prices had increased nominally by 7.7% at the end of 2019, a comparatively low appreciation when contrasted with the 9.4% increase in December 2018. The rate of appreciation slowed throughout almost all of 2019. The middle-income residential segments closed the year with an annual gain of 7.8% compared to the 10.1% recorded in December of the previous year. The price of social housing also recorded a slowdown, although this was less noticeable because the rates of appreciation had already remained stable since the fourth quarter of 2018, ranging from 7.6% to 7.4%.

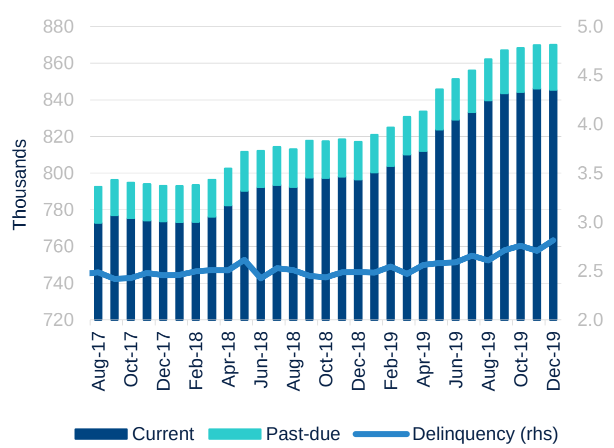
In terms of usage, new housing closed 2019 with an annual appreciation of 8.3%, while second-hand housing stood at 7.1%. It should be noted that, when the real estate market is at the lowest part of the cycle, second-hand housing tends to gain share in origination. At present, it already accounts for 50% of mortgage financing for both Infonavit and commercial banking.

The mortgage portfolio remains healthy

The mortgage portfolio balance recorded significant growth in 2019, resulting from the higher origination in the high-value segments we mentioned previously. While lower dynamism resulted in an average increase of 2.9% in the current portfolio in 2018, the average increase amounted to 5% for 2019 (both in real terms).

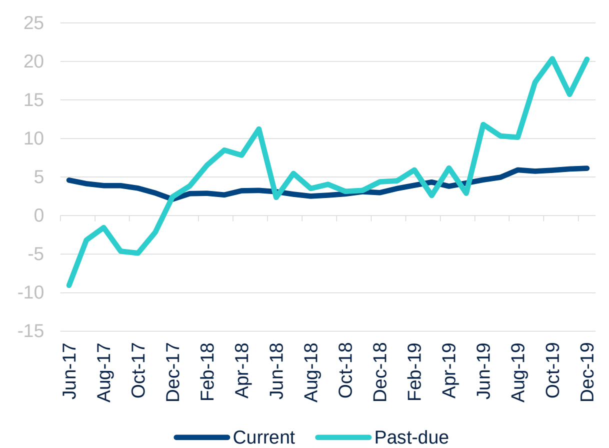
The non-performing component of the portfolio recorded an average increase of 10.7% in real terms in 2019, compared to 5.3% the previous year. However, this is not equivalent to a deterioration of the portfolio, as delinquency remains below 2.9%, as it has for the last three years. This is partly explained by the increase in the number of loans granted; that is, an increase in the denominator. The COVID-19 pandemic and its impact on employment lead us to predict increases in delinquency moving forward.

Figure 2b.17 **MORTGAGE LOANS (BILLIONS OF CONSTANT PESOS AND DELINQUENCY, %)**



Source: BBVA Research based on data from Banxico

Figure 2b.18 **MORTGAGE LOANS (YoY % CHANGE)**



Source: BBVA Research based on data from Banxico

Conclusions

2019 was a year of strong performance for banking, largely due to Infonavit's wise decision to withdraw from the residential segment. However, last year's gains in high-value segments reflected more of a hedging strategy for the high-income population. We must take into account that the economy has faced episodes of greater uncertainty over the last two years, featuring slides in the exchange rate, federal government decisions such as the cancelation of the new Mexico City International Airport, the long wait for the ratification of the USMCA, and the end of the cycle of increases in long-term interest rates, which was subsequently reflected in mortgage rates.

While the sum of these factors shaped the positive behavior from a short-term perspective, the main determinant of demand for housing loans closed 2019 with growth of just 1.8%. This explains why the purchase of social and medium-income housing remains depressed, which has been reflected in a contraction in the volume of housing output.

Conditions for job creation will not be favorable in 2020. A historic contraction in formal employment is expected as a result of the COVID-19 pandemic, which will put the Mexican economy in the midst of a global recession. We therefore foresee a significant drop in demand for mortgage loans.

The change in trend will depend on the rate at which formal employment recovers and on families' confidence in the medium- and long-term stability in the face of the crisis that takes shape in the wake of the global pandemic. In terms of supply, incentives for revival, such as the cost of inputs and low mortgage interest rates, will remain in effect. This recovery may occur up to two or three years from now, taking into account how long employment will take to recover.

3. Special Topics

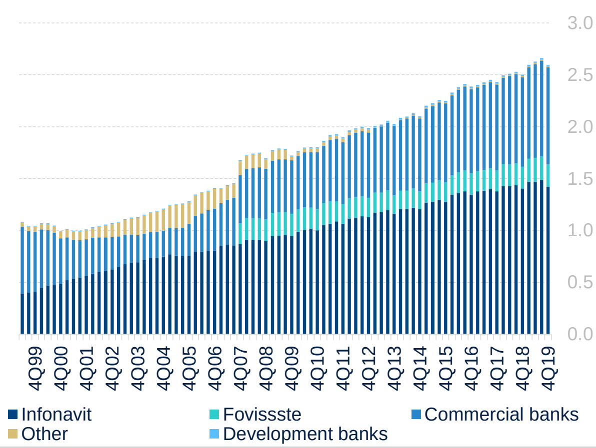
3a. The mortgage burden is low, but should increase in 2020

When credit portfolios grow rapidly, doubts about the quality of origination often arise. Increased questioning usually occurs during an economic crisis or when one is brewing. In this section, we will briefly review the quality of the mortgage portfolios of the main players in this market in Mexico and the pressure Mexican families are under to make mortgage payments in order to assess the possible risk faced by the demand side.

Sustained growth in the low-delinquency housing portfolio

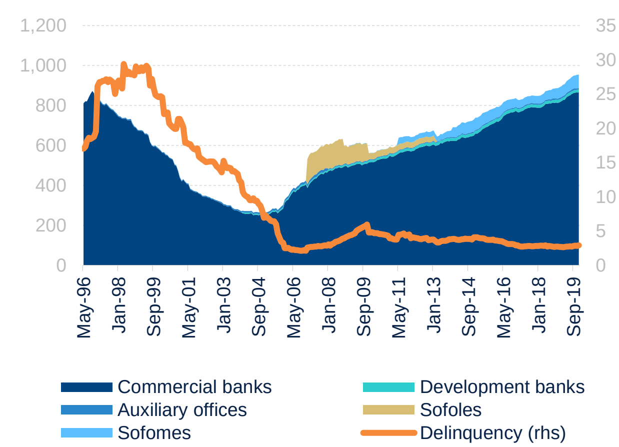
Mexico's mortgage loan portfolio balance exceeded 2.5 trillion pesos at 2019 prices. This represents a 20-year growth of almost 250%. Since 2004, this portfolio has advanced significantly thanks to the return of commercial banking to this market and the boost provided by mortgage-lending Sofoles (limited-scope financial institutions). We consider this financial market result in the residential area to be orderly given the low delinquency observed from 2004 onward. While the proportion of the non-performing portfolio is low with respect to the entire portfolio due to high origination, its growth has also been modest in absolute value. This indicates that the mortgage portfolio of the Mexican financial system is stable, as it even managed to resist the 2009 crisis without significant disruption.

Figure 3a.1 **MORTGAGE LOANS BALANCE** (TRILLONS OF CONSTANT PESOS)



Source: BBVA Research based on data from the Bank of Mexico

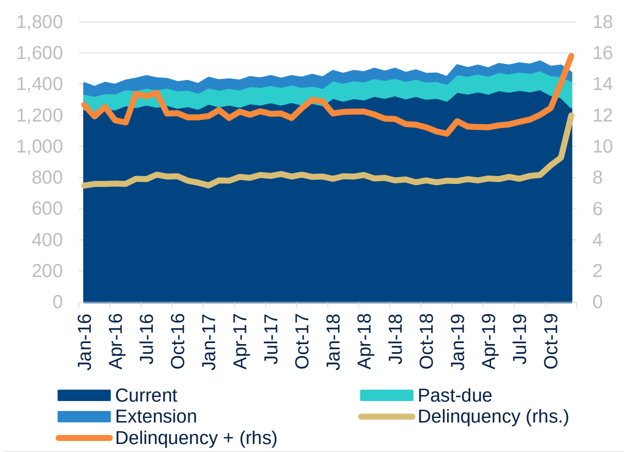
Figure 3a.2 **MORTGAGE LOANS BALANCE** (THOUSANDS OF PESOS AND YoY % CHANGE)



Source: BBVA Research based on data from the Bank of Mexico

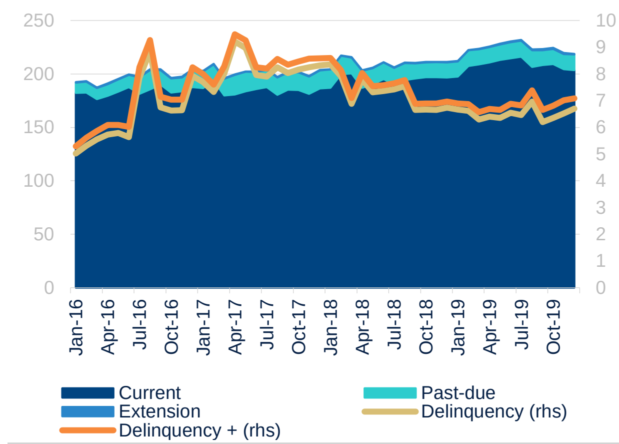
In the specific case of the banking portfolio, which includes both commercial and development banking, delinquency has not exceeded 5% since 2010. Even during the 2009 crisis, the highest level reached was 6%. The banking portfolio, of which commercial banking has the largest share, had been accelerating since 2004 and only began slowing down in 2018. The portfolio doubled between 2004 and 2019, despite the exit of the Sofoles. Commercial banking's share reached 36% of the total financial system in 2019, having been at only 20% in 2004. Infonavit has of course historically been the institution that dedicates the most financial resources to housing, both in terms of the number of loans and in the amount of the portfolio. However, with the sharp drop in demand for social housing, commercial banking has crept up on the institute and in some years has even granted a higher amount of credit.

Figure 3a.3 **INFONAVIT PORTFOLIO BALANCE (MILLIONS OF PESOS AND PERCENTAGE)**



Source: BBVA Research based on data from the Bank of Mexico

Figure 3a.4 **FOVISSSTE PORTFOLIO BALANCE (MILLIONS OF PESOS AND PERCENTAGE)**



Source: BBVA Research based on data from the Bank of Mexico

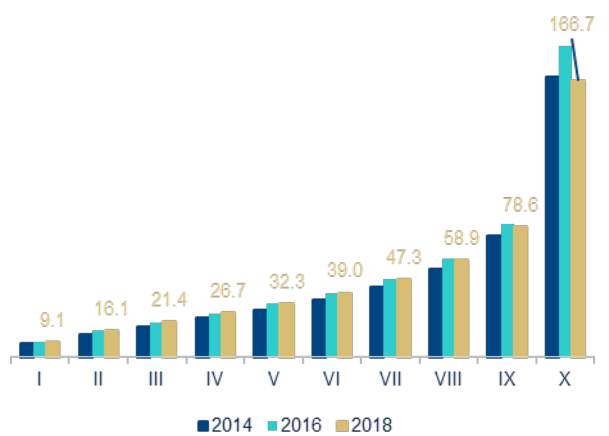
Infonavit is the leading provider of mortgage loans in Mexico, but it also provides low-income loans, which is the riskiest and hardest to serve segment. This segment is primarily aimed at social housing, whose share is close to 80% of the total housing stock. Infonavit's mortgage origination also soared from 2004, driven, like the rest of the market, by pro-worker policies from the end of the previous century, the emergence of co-financing and housing development policies at the start of the twenty-first century. The quality of its portfolio remains adequate at around 8%, despite serving the highest-risk segment of the market. The delinquency of their portfolio only exceeds 10% if we consider the extended portfolio as well as the non-performing portion. In any case, Infonavit has sufficient funds to handle a contingency. FOVISSSTE is in a similar situation, but with a middle-income segment and a controlled delinquency of around 7%. The origination of the Fund already represents less than 10% of the total. Neither of these two public institutes is showing signs of a deteriorating portfolio despite their strong mortgage placement over the past 15 years.

Households keep the mortgage burden low despite a fall in income

In an edition of ***Mexico Real Estate Outlook*** two years ago, we included a report on the financial burden of mortgage payments on the current income of Mexican households. In our comparison between 2014 and 2016, only the lowest-income decile of households showed an increase in the proportion of their current monetary income that represented their housing payments; the proportions for the rest remained steady or even decreased. The comparison is biannual because this analysis is based on the National Household Income and Expenditure Survey (ENIGH) which is carried out by INEGI every two years. The survey has now been published including figures for 2018, and so we have updated these estimates to see how much that burden has changed.

The ENIGH's 2018 results are surprising from the start. The current average quarterly income of Mexican households fell by 4.1% in real terms from 2016 to 2018, even though inflation was low and the number of formal private jobs continued to increase. The three highest-income deciles were the most affected as property income decreased by 35.8% on average, followed by transfers, which fell 5.3%, and the estimation of housing rent, which fell by 3.4% from 2016 to 2018 in real terms. This has a simple explanation: for households with higher incomes, property income is more relevant, such as income from cooperatives and corporations, as well as asset leasing. The contraction in income in decile 10, the highest, was over 11% in real terms in this two-year period, while the variation was positive for incomes in deciles 1 to 7.

Figure 3a.5 **CURRENT QUARTERLY INCOME** (THOUSANDS OF 2018 PESOS)



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2014, 2016 and 2018

Table 3a.1 **CURRENT QUARTERLY INCOME** (THOUSANDS OF PESOS AND YoY % CHANGE)

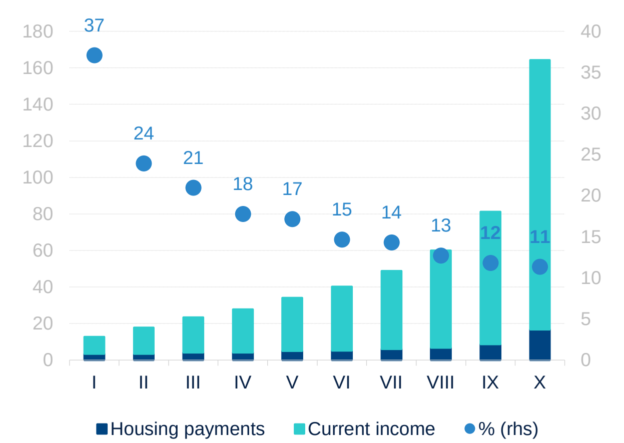
	Thousands of pesos				Δ %	
Decile	2014	2016	2018	Decile	2016	2018
I	8.1	9.1	9.1	I	12.1	0.3
II	14.1	15.8	16.1	II	11.9	1.9
III	18.8	21.0	21.4	III	11.7	1.8
IV	23.6	26.2	26.7	IV	11.2	1.9
V	28.7	32.1	32.3	V	11.8	0.8
VI	34.7	38.8	39.0	VI	11.8	0.5
VII	42.4	47.2	47.3	VII	11.4	0.1
VIII	53.5	59.4	58.9	VIII	11.0	-0.8
IX	73.7	80.1	78.6	IX	8.7	-1.9
X	168.8	187.8	166.7	X	11.3	-11.2
Total	46.6	51.7	49.6	Total	11.0	-4.1

Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2014, 2016 and 2018

With no changes in housing payments, we would have expected the burden on households in the highest deciles to have increased proportionally to income. However, only decile 2 showed a higher proportion of mortgage payment with respect to their current monetary income, while for the other deciles it remained steady or declined. This result is similar to the comparison between 2014 and 2016, when only the first income decile increased its financial burden for housing payments. 20% of lower-income households that report having a mortgage loan have a financial burden of more than 30% with regard to this type of loan, while the rest have a ratio of 21% or less. It therefore appears that an average of 80% of households are not under significant pressure to pay their mortgages with respect to their monetary income. Due to their income level, households in the first two deciles usually require a rate, price or income subsidy to gain access to the formal housing market.

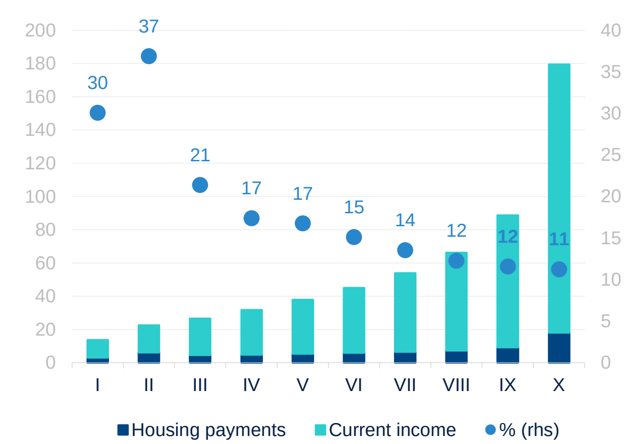
The relative stability of payments with respect to income is mostly attributed to the fixed payments of most housing loans originating in the Mexican mortgage market, thanks to fixed interest rates. Moreover, most mortgage products do not charge commissions for advance payments, especially those arising after the entry into force of the Guaranteed Credit Transparency and Promotion of Competition Act of 2002. Advance payments without penalties have become more significant; as a reference, the average term at which mortgages originate is slightly over 19 years, while the life of these loans is just over 7 years on average.

Figure 3a.6 **HOUSING PAYMENTS AND INCOME 2016**
(THOUSANDS OF CONSTANT PESOS AND %)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2016

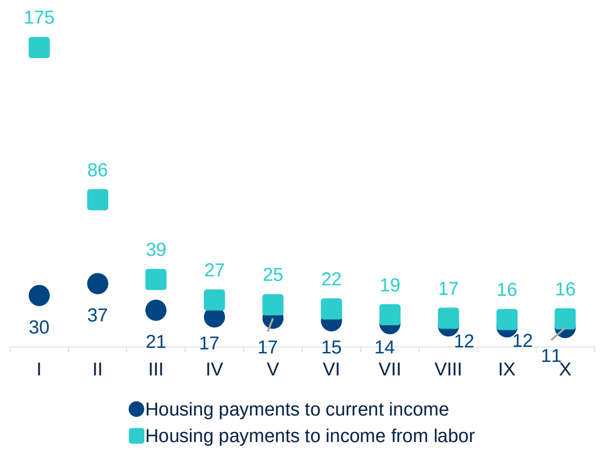
Figure 3a.7 **HOUSING PAYMENTS AND INCOME 2018**
(THOUSANDS OF CONSTANT PESOS AND %)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2018

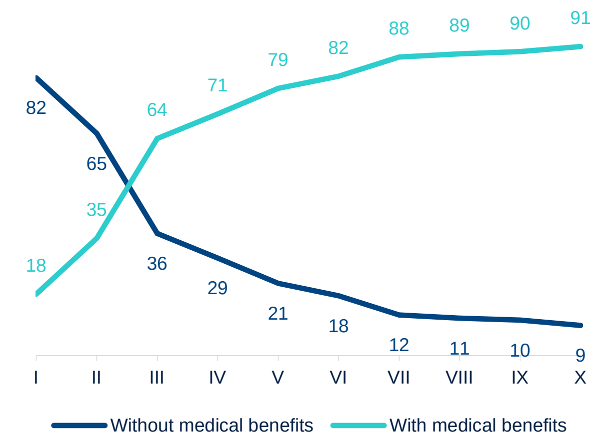
Current monetary income consists of income from labor, property income, transfers, estimations of housing rent and others. If we only take income from labor into consideration, the burden of mortgage financing increases significantly for the same first two lowest-income deciles. For the first decile it actually exceeds 100%, while for the second decile it reaches 86%. This demonstrates the importance of transfers for these households. The burden also increases for deciles 3 to 5, but it remains within a manageable margin. The remaining households have a marginal positive variation which does not represent a greater risk. The average quarterly current income for decile 5 is 32,318 pesos, which exceeds the five minimum wages in force at this time. In the housing industry, it is common knowledge that households with an income below the five minimum wages require a stimulus in the form of a subsidy to be able to access the housing market, and so they cannot generally represent effective demand without this support. As such, these households are unlikely to form part of the open market.

Figure 3a.8 **HOUSING PAYMENTS AND INCOME 2018** (PERCENTAGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2018

Figure 3a.9 **FORMALITY DISTRIBUTION 2018** (PERCENTAGE)



Source: BBVA Research based on data from INEGI (National Statistics and Geographical Institute) and their ENIGH for 2018

Given the economic crisis that is emerging from pandemic-related measures, a deterioration in the housing portfolio and an increase in the mortgage burden for households that see a reduction in their income is to be expected 2020. Workers at the highest risk of a drop in income are those in the informal sector. Based on the ENIGH, we used the medical service provision feature to identify which workers belong to the formal and informal sectors according to the INEGI's National Survey of Occupation and Employment criteria, which match those of the International Labor Organization.

Again, over 50% of workers in deciles 1 and 2 fall within the informal sector. Informal workers comprise 82% of the first decile and 65% of the second decile. This ratio falls considerably from decile 3 and up, and in the three highest deciles, only 10% on average are informal workers. In total, 15% of these households are in the informal sector and we consider these households to be those with the highest probability of losing part of their income during the economic crisis.

Mortgage burden will soon increase, but not dramatically

Whenever the flow of financing to a sector increases, the question arises as to whether the loans granted are too high and whether it could represent a significant risk. In terms of mortgage loans, the most recent example is the 2009 economic crisis, which was the direct result of highly relaxed international mortgage origination which led to many borrowers failing to meet their payment obligations. Under the new regulation, they could only access a mortgage with such a high provisioning that it may be unfeasible. It is therefore wise to review mortgage burdens on household income to learn about financial pressure and the risk it is likely to cause.

The most recent figures on the mortgage burdens of Mexican households in 2018 do not show significant variations from 2014 to 2018, a period where household-level information is available. However, with the approaching 2020 economic crisis, there will be households that face having lower incomes or even losing their income altogether. Workers in the informal sector will be more likely to suffer this outcome. As a result, a deterioration in the mortgage portfolio is to be expected as the household debt burden increases this year. We estimate that this will be limited, however, as households in deciles 5 to 10, which generally form part of the financial market without subsidies, have a smaller proportion of informal workers. Moreover, fixed rates and the lack of commission for prepayments reduce the uncertainty in the amortization of these mortgages. Finally, many of these loans include unemployment insurance. It is our hope that public policy will focus on protecting jobs so that families can maintain their most valuable asset.

3b. FIBRAs and the real estate market in Mexico

Introduction

Real estate investment trusts in Mexico, commonly known as FIBRAs, began operating on the Mexican Stock Exchange in March 2011. This concept arose alongside increased investment needs in various real estate services, as well as the development of major building projects (residential and productive), which gained ground in various regions of the country where manufacturing and urban housing needs were the result of the establishment of various industries and large-scale commercial activities, especially those aimed at export markets.

Since their creation, FIBRAs have become an attractive investment model as a result of being linked to a growing number of economic activities, ranging from the construction of mixed developments (housing and commerce) to warehouses, offices and major hotel developments. This growth in their coverage has also been characterized by their tax benefits and liquidity compared to other investment assets.

In this edition of the ***Mexico Real Estate Outlook***, we examine the relationship between the performance of the main FIBRA indices and their relationship with the economic activities involved.

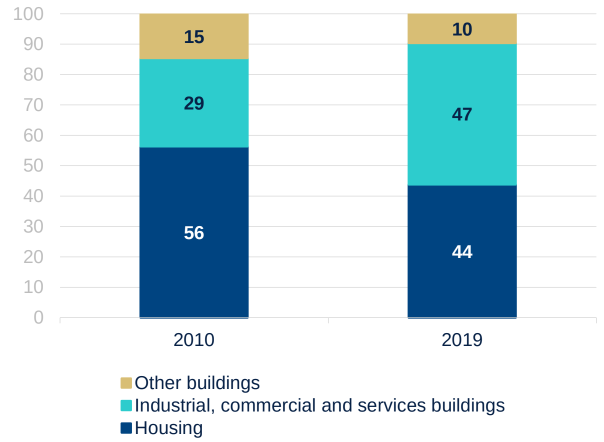
The start of the FIBRA boom in Mexico aligned with construction

FIBRAs began operating in 2011. This was a couple of years after the 2009 crisis, in an environment where real estate was evolving as a result of a structural change in the Mexican real estate market. As mentioned in other editions of this publication, following the 2009 crisis, the large-scale housing output model changed between 2011 and 2013, giving way to a new cycle in which housing remained important, but with a resurgence in urban areas and with smaller developments in middle- and high-income segments which have also gone hand in hand with urban renewal.

At the same time, demand for commerce-focused building designs began to emerge, and so the value of construction companies' output, which had mostly focused on housing, began to shift toward the building of commercial properties (shopping malls, industrial buildings and offices). According to ENEC data, while 29% of building output value went into this kind of production in 2010, this figure had reached 47% by 2019. On the other hand, while housing remained important, it fell from 56% in 2010 to 44% in 2019.

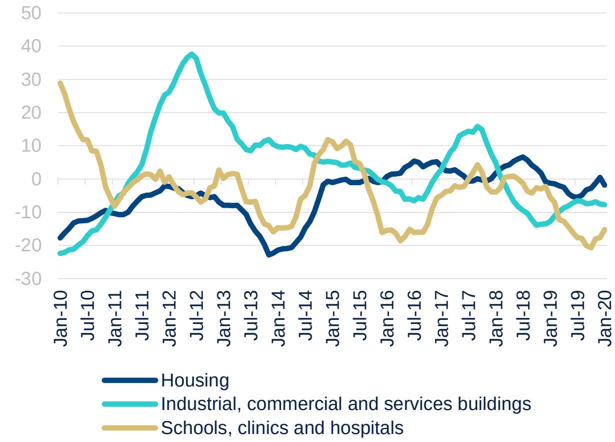
In fact, once the 2009 crisis had been overcome, if we look at the growth rates of this same indicator, the trends are the same. When the first FIBRA began operating in March 2011, the output value of productive building by construction companies reached positive values just one quarter later, and between July and December, it had increased by an average of 15.6% in real terms. This commercial boom continued for the most part over the next four years. As we can see in Figure 2 below, the construction of shopping malls, industrial buildings and offices in 2012 and 2013 increased on average by 30% and 12% in real terms and in annualized figures, respectively.

Figure 3b.1 **GROSS VALUE OF CONSTRUCTION** (% SHARE)



Source: BBVA Research based on data from the ENEC (National Survey of Construction Companies) INEGI

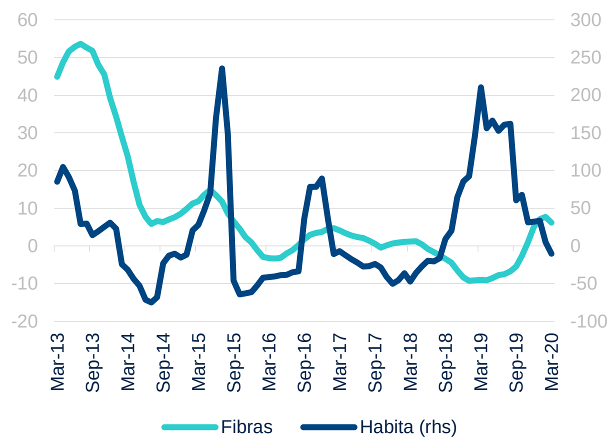
Figure 3b.2 **GROSS VALUE OF CONSTRUCTION** (YoY % CHANGE)



Source: BBVA Research based on data from the ENEC (National Survey of Construction Companies) INEGI

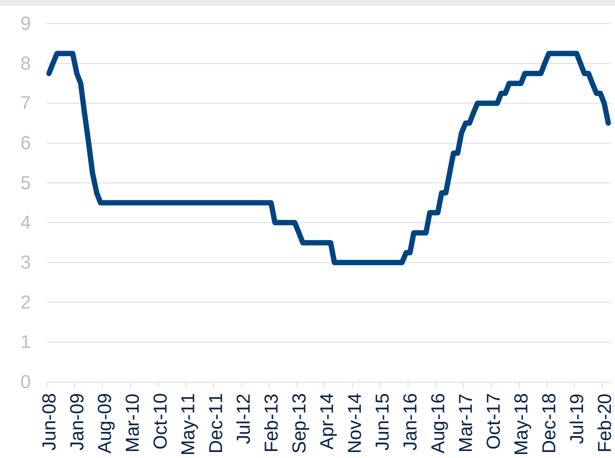
This trend continued in 2014 and 2015 with more moderate, but still impressive, rates of 8.1% and 3.0%, respectively. It is worth mentioning that the value of housing output remained negative during this time, despite the fact that this period also saw one of the longest cycles of falling interest rates, both short- and long-term. However, this further boosted the entry of other FIBRAs into the market, which offered returns that were significantly higher than the corresponding securities offered by housing developers, whose industry had halted.

Figure 3b.3 **FIBRAS AND HABITA INDICES** (YoY % CHANGE)



Source: BBVA Research based on Bloomberg data

Figure 3b.4 **BENCHMARK INTEREST RATE** (PERCENTAGE POINTS)



Source: BBVA Research based on data from the Bank of Mexico

When the Lehman Brothers declared bankruptcy in September 2008, the benchmark interest rate entered a sharp cycle of decline and remained at 4.5% for 3 years. It even fell again in 2013 and remained static at 3% between 2014 and 2015. The persistence of such low benchmark interest rates over this extended period of time was also favorable for the construction industry, as bridge loan rates are indexed to short-term rates. That is why this was the best time for FIBRAs to grow, because not only was construction cheap, but the returns they could offer investors were also far higher than what the residential market was offering.

Figure 3 demonstrates the positive correlation between the FIBRA index and the Habita index. The Habita index comprises all shares of the companies listed on the stock market in the housing construction and real estate development sectors, according to the Mexican Stock Exchange.

The FIBRA index offered higher returns between 2014 and 2015. The FIBRA index showed continued growth even up to the end of 2015, but at increasingly lower rates, entering negative territory once the cycle of short-term interest rate hikes began. The Habita index exceeded the FIBRA index on two occasions: during 2015 and 2016, when federal housing subsidies promoted the building of new homes; and in 2018 and 2019, when Infonavit increased the maximum limits for loans. The highest peak in FIBRA growth to date was undoubtedly the period when short-term rates declined, as once these began to rise again the FIBRA index continued to grow, but at more moderate rates. During 2019, when the benchmark rate returned to 2008 levels, the FIBRA index decreased for the first time.

Real estate services and wholesale trade

As mentioned above, the performance of the FIBRA index in recent years is a result of the latest cycles in the construction industry. However, productive building is also closely linked to other sectors of the economy that could also be linked to investment decisions in the FIBRA market.

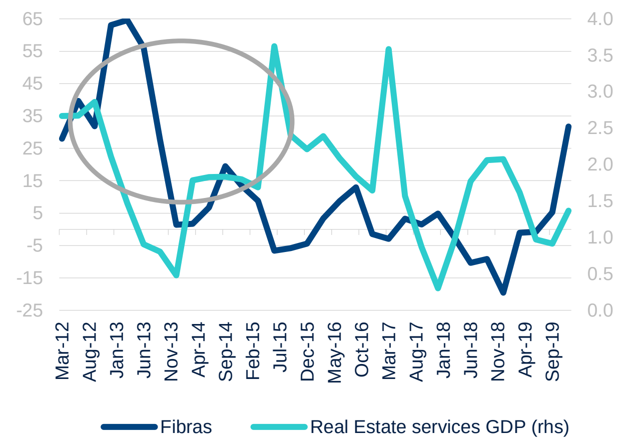
While only one FIBRA was in operation in 2011, in subsequent years profits exceeded all expectations and other FIBRAs began to enter the market in increasingly diverse areas. Of the thirteen FIBRAs that currently exist, eleven focus on a combination of shopping malls, industrial buildings and offices or mixed use (housing and commerce), while only two focus on the hotel sector. This is why, as the number in the market continues to grow, we should not be surprised that they are becoming increasingly involved in more sectors of the economy.

In the medium term, we expect to see strong growth in FIBRAs due to a higher demand for industrial buildings as a result of the increased investments that the new USMCA might bring.

As almost 90% of the asset value of the participating FIBRAs is linked to the commercial property sector, we first reviewed the economic relationship of the overall index with the main indicators of the trade sector and real estate services.

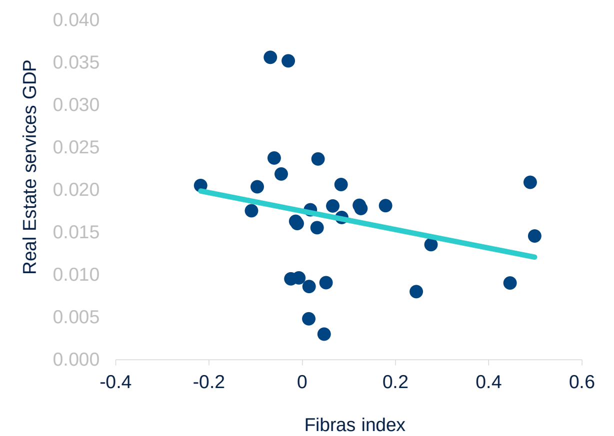
According to the Mexican National Accounts System (SCNM), the Real Estate Services GDP comprises three subsectors of the economy, including companies covering these services, as well as the rental of movable property and of intangible property. The former covers the rental of houses, commercial premises, theaters and other buildings, as well as the rental of land and related services. The others feature companies dedicated to the rental of cars, trucks and other land transport, and also services providing rental of registered trademarks and patents.

Figure 3b.5 **FIBRA INDEX AND REAL ESTATE GDP (YoY % CHANGE)**



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

Figure 3b.6 **FIBRA INDEX AND REAL ESTATE GDP (YoY % CHANGE DISPERSION 2012–2019)**



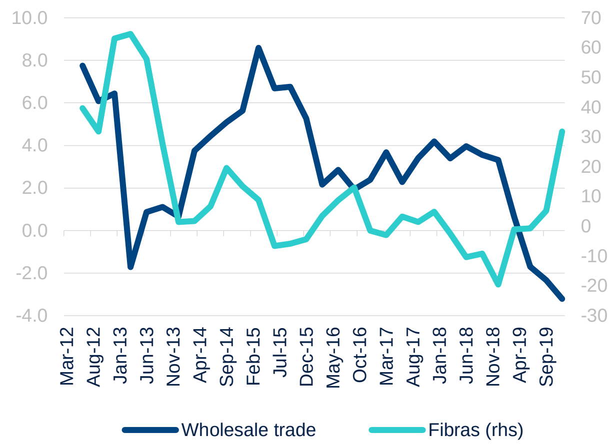
Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

As observed with respect to the output value in productive building, during periods in which real estate services have the most growth, the performance of the FIBRA index displays an inverse behavior. The clearest example of this was between 2013 and 2017, when the construction of shopping malls, industrial buildings and offices benefited from low financing costs on bridge loans. This means that during an economic boom, rental income from real estate drives capital gains and income tends to exceed the returns from FIBRA investments, mainly during times with increases in short-term interest rates, which would also be reflected in the higher rental prices of these properties.

With regard to wholesale trade, in line with the SCNM definition, this includes companies that are primarily involved in buying and selling intermediate consumption goods, such as: capital goods, raw materials and supplies used in production, as well as end-consumer goods, which can be sold to other traders.

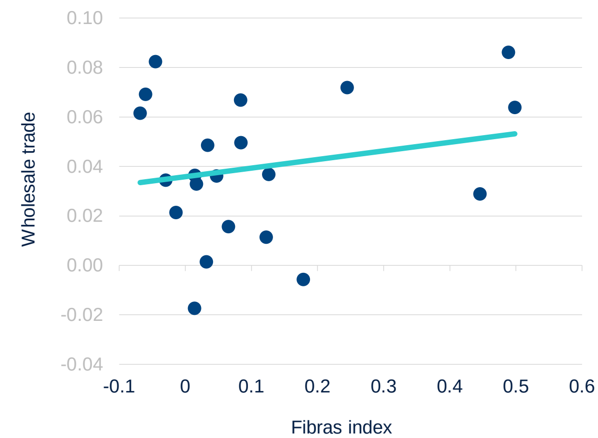
Since FIBRAs provide resources that favor these trusts for the construction of such buildings, there is a positive relationship between wholesale trade annual growth rates and the FIBRA index.

Figure 3b.7 **FIBRAS AND WHOLESALE TRADE (YoY % CHANGE)**



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

Figure 3b.8 **FIBRAS AND WHOLESALE TRADE (YoY % CHANGE DISPERSION 2012–2019)**



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

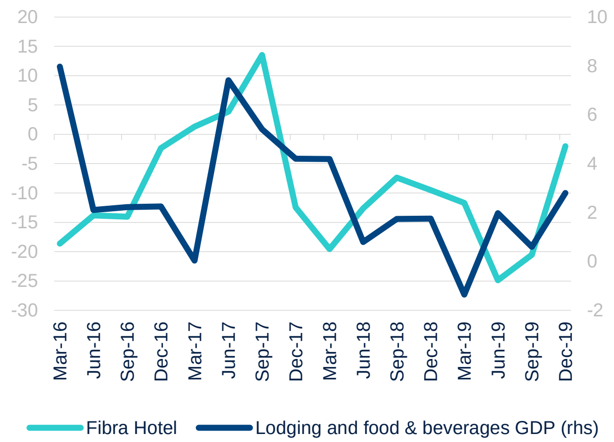
There is a delay of around two quarters between wholesale trade behavior, which is merely consumer demand for the abovementioned goods, and the FIBRA index's response. Following the deterioration of wholesale trade in 2013, FIBRAs recorded annual growth of around 10% between 2014 and 2015. Once trade slowed, FIBRAs performance deteriorated in subsequent quarters, and although it picked up in late 2019 in response to the decline in short-term interest rates, this growth will not be sustained due to the decline in widespread consumption.

Hotel FIBRAs and the tourism sector

This section reviews the performance of the two FIBRAs related exclusively to building and managing hotels. Although these represent less than 10% of the value of all assets, this analysis allows us to compare them directly with the economic activities related to the tourism sector, separating them from the other FIBRAs that cover a combination of offices, shopping malls and industrial buildings.

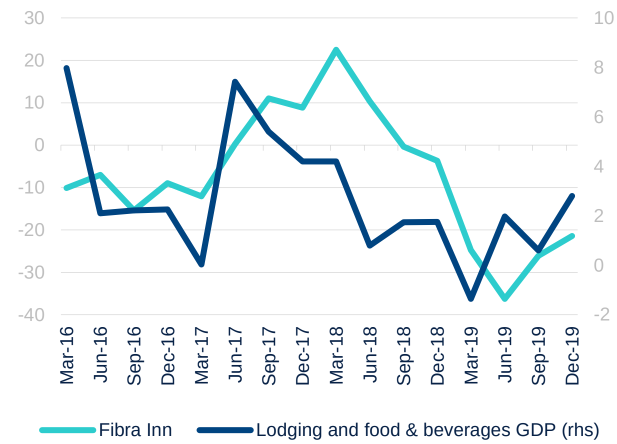
According to SCNM, the temporary accommodation and food and drink preparation sector is the benchmark we use when assessing tourism activity. This includes companies that provide temporary accommodation services, such as: motels, casino hotels, cabins, villas, campsites, adventure lodges, guesthouses, hostels and furnished apartments with hotel services, as well as food and drink service and preparation for consumption in restaurants, mobile units, nightclubs, bars, canteens, etc.

Figure 3b.9 **TOURISM GDP AND FIBRA HOTEL INDEX** (YoY % CHANGE)



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

Figure 3b.10 **TOURISM GDP AND FIBRA INN INDEX** (YoY % CHANGE)



Source: BBVA Research with data from INEGI (National Statistics and Geographical Institute) and Bloomberg

It is clear that the FIBRAs linked to the hotel industry are closely related to the GDP of accommodation and food and drink, and both are therefore already reflecting the sector's slowdown toward the end of 2019. We expect them to slow down further in 2020 due to the sharp decline in the tourism sector as a result of the COVID-19 pandemic.

3c. Mortgage activity contractions in Mexico

Introduction

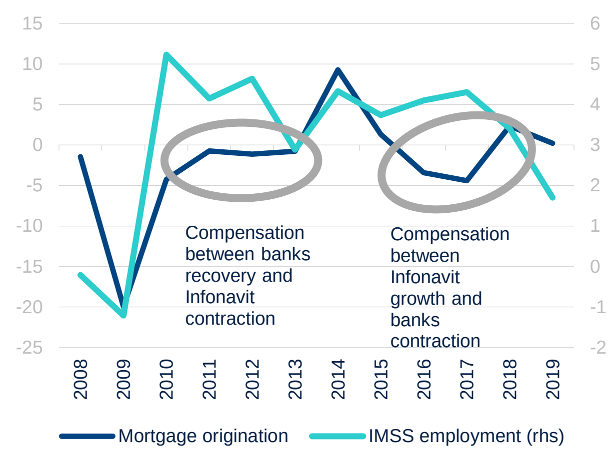
The mortgage activity in Mexico has faced adverse situations on its path to maturity. These include economic crises, changes in housing policy or even the absence of policy, and moving from being a market governed by supply considerations to being based on demand. Today, it is a very efficient market. The mortgage portfolio currently exceeds 2.5 trillion pesos with a delinquency below 10%, and serves as the main point of access to housing for most Mexican families.

However, the current crisis resulting from the COVID-19 pandemic, which is hitting the market at a time of weakness, could have a similar or even worse impact due to a decrease in demand, as well as factors relating to supply. Given that each crisis or recession to hit mortgage financing has been different, it is important to review the differences between each crisis.

Mortgage banking and cycles of formal employment

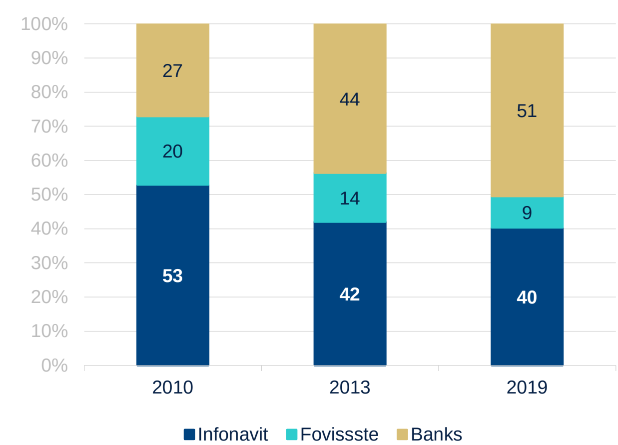
Here we are going to focus on two fundamental facts. First, considering the amount of mortgage financing for all players in the market as a whole may skew the analysis. As we can see in Figure 3c.1 below, during some periods of market recovery or contraction, banking and housing institutes activities offset one another. As mentioned previously, formal employment cycles determine demand for mortgage loans with a certain amount of delay. However, there appears to have been a decoupling in the periods from 2010–2012 and 2015–2017, as employment grew at positive rates during both periods while the amount of funding remained stagnant or negative, decreasing even further during the latter period. As a result, we consider it necessary to study private providers and housing institutes separately.

Figure 3c.1 **AMOUNT OF MORTGAGE FINANCING: BANKING AND INFONAVIT** (YoY % CHANGE)



Source: BBVA Research with data from ABM, CNBV, Infonavit and FOVISSSTE

Figure 3c.2 **AMOUNT OF MORTGAGE FINANCING: BANKING AND INFONAVIT** (YoY % SHARE)



Source: BBVA Research with data from ABM, CNBV, Infonavit and FOVISSSTE

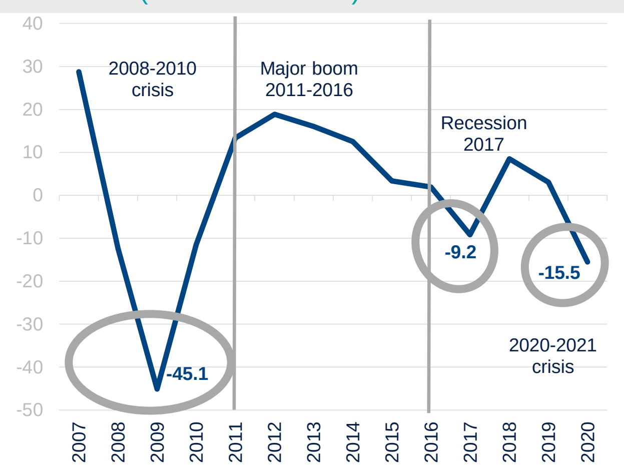
Second, the period we reviewed featured some structural changes. As we can see in Figure 3c.2, while banking accounted for less than 30% of mortgage financing in 2010, by 2019 it accounted for more than 50%. Public institutes, meanwhile, have lost market share. FOVISSSTE originated less than 10% of the total credit amount in 2019, while Infonavit, which represented 53% in 2010, now serves 40% of the market.

Mortgage activity contractions and the housing economic cycle

2007 is considered to be the year of the real estate boom in the Mexican market due to the construction of more than 700,000 homes and high mortgage placement. In that year, the private sector achieved grow at a rate close to 30% in real terms. This high rate of growth, which was not necessarily an indication that the market was operating well, was driven by housing policies adopted since 2000. In 2004, with the emergence of co-financing mechanisms between housing institutes and commercial banking, the latter was able to enter the social housing segment after several years of stagnation in the mortgage market. Given that this segment is the largest in the Mexican economy, the entrance of banking was essential for the mortgage market to expand, together with the fact that co-financing products increased families' credit affordability. The financial market thus helped increase families' purchasing power in the housing market.

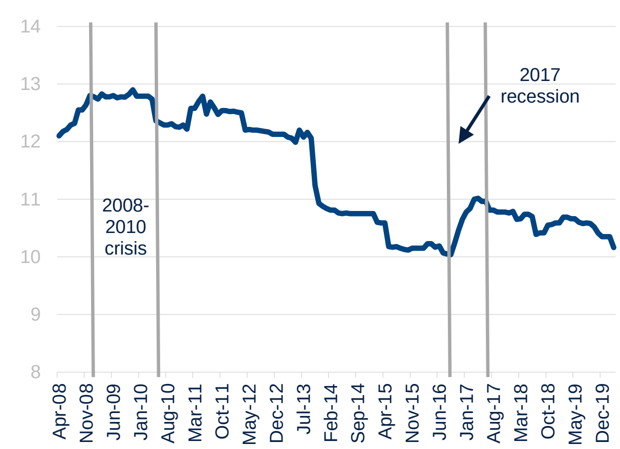
The 2009 international economic crisis was triggered by the bankruptcy of Lehman Brothers in September 2008. This subprime crisis was the direct result of risky mortgage lending and distribution, as the originators did not maintain their risk positions in the financial system through structured instruments in securities markets. Despite the financial complexity of its transmission abroad, the cause was very simple: mortgage loans were granted to very high-risk segments. The combination of higher interest rates and job losses in the US led to non-payment, thus leading to deterioration of the mortgage portfolio, and the instruments backed by these loans declined steeply in value.

Figure 3c.3 **AMOUNT OF MORTGAGE FINANCING: BANKING** (YoY % CHANGE)



Source: BBVA Research with data from ABM, CNBV, Infonavit and FOVISSSTE

Figure 3c.4 **MORTGAGE INTEREST RATE** (YoY, %)



Source: BBVA Research based on data from Banxico

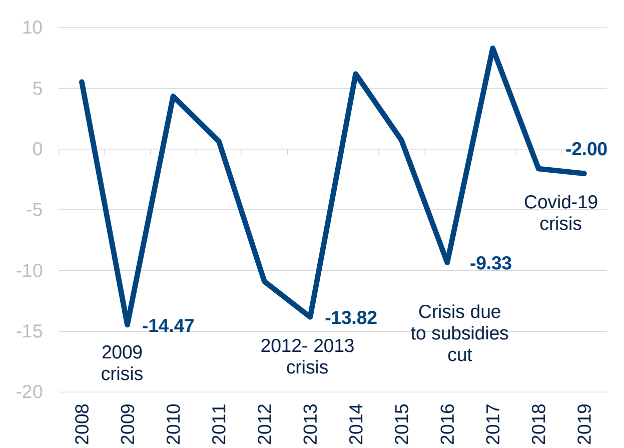
In Mexico, the 2009 housing market crisis was not the result of poor origination, which is evidenced by a low delinquency in the portfolio at the time, hovering around 5% in the case of bank credit. The effect was caused by the loss of employment and the resulting decline in demand for housing, which in turn lowered demand for mortgage loans.

In other words, the quality of the existing portfolio did not change, but the rate of origination of new loans fell considerably. This is why we consider this economic event to be a crisis caused by demand. In a sense, this reflected strong market performance that granted fewer loans when the risk profile increased. The fact that the vast majority of origination was destined for low-income housing during those years made commercial banking more vulnerable due to its relationship with housing institutes through co-financing. This is why the recovery period was longer than expected, as the impact was due to the sharp fall in loan volume.

This was also combined with a marginal increase in mortgage interest rates, which, after having enjoyed downward stability over the previous four years, rose by 70 basis points between June 2008 and November 2009. This increase also reflected the increase in credit risk due to unfavorable economic conditions during a global economic crisis.

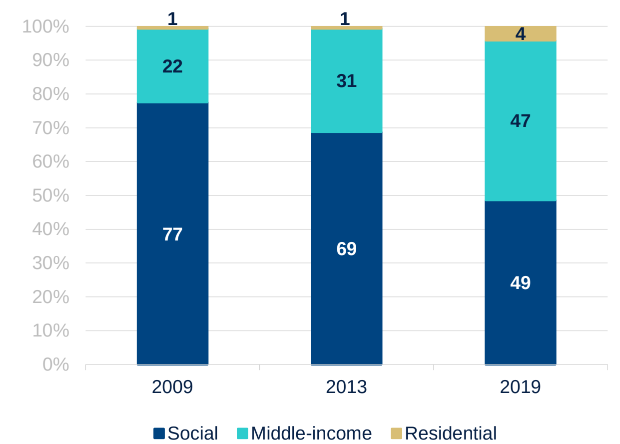
Following the 2009 crisis, the next contraction episode to hit commercial banking occurred in 2017, following a full six years of uninterrupted growth in real terms. However, this was a lesser-known bump in the road and is not contextualized as a severe crisis, given that it largely consisted of a replacement of credit supplies as Infonavit focused more on serving the middle-income and residential segments than on social housing segments. The 2017 contraction in funding should not be seen as a consequence of the economic cycle, but as an effect of a change in housing institute policy that we will explore in more depth later on.

Figure 3c.5 **AMOUNT OF MORTGAGE FINANCING: INFONAVIT** (YoY % CHANGE)



Source: BBVA Research based on data from Infonavit

Figure 3c.6 **HOUSING CONSTRUCTION PROJECTS PER SEGMENT** (YoY % SHARE)



Source: BBVA Research based on RUV data

The third critical episode for banking will undoubtedly be the period we are facing from 2020 onward. While a slowdown in mortgage activity could already be seen in 2019, as well as greater uncertainty and a slowdown in economic activity, banking managed to grow by the end of the year in spite of this. This growth is explained by the formal job creation observed in 2017 and 2018; as explained above, there is a certain delay in the causality between employment and the origination of mortgage loans. However, this year the market is facing a major challenge as it will confront a contraction not only in demand, but also in supply.

As we can see in Figure 3c.5, Infonavit has gone through four contraction periods. As we have discussed earlier in this edition, the performance of this institute is linked to employment growth. However, its operation also responds to other factors. Since Infonavit is a development institution, its performance also depends to a large extent on the public policies implemented during each of these episodes, with housing subsidies being the clearest example.

During the 2009 crisis, Infonavit had to confront the same conditions (lower income, lower employment and higher mortgage interest rates) as commercial banking. However, unlike banking, which experienced a cycle of prolonged growth after the crisis, Infonavit experienced another crisis in 2012–2013. This process reflected the decline in output of large-scale housing located far from work hubs, which was unable to adapt to the change in consumer preferences, which had shifted toward homes with better attributes located primarily in urban areas. As shown in Figure 3c.6, while almost 80% of all housing output went toward the social housing segment in 2009, this proportion fell to 69% in 2013, and in 2019 only accounted for 49%.

The third crisis the institute faced occurred between late 2015 and early 2016, when the federal government radically cut subsidies for new home purchases, which had a direct impact on national construction rates. In response, Infonavit began to implement a policy of greater penetration in the middle-income and residential segments which, as we have seen, resulted in a shift in commercial banking.

As a consequence, Infonavit increased the maximum limits for loans up to 1.6 million pesos in April, 2017. Infonavit's intention to directly compete with banking was in response to the banking boom that took place between 2011 and 2016, where the cycle of falling mortgage interest rates increased the bank's market share, as we saw in the first section of this edition.

The result of this was positive for Infonavit, which achieved 8% real growth in 2017, reflecting the contraction faced by the banks that same year, as discussed above. These changes turned out to be a serious policy error, as a Public Institute was used to displace private players instead of targeting unserved segments of the market.

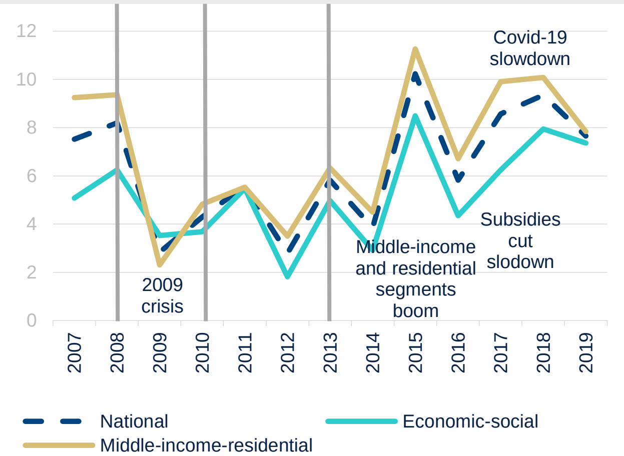
Supply and price cycles reflect structural changes

From a long-term perspective, we have seen that crises originate from shocks in supply or demand. The two indicators that best reflect these events are construction projects and the housing price index.

In terms of supply, it is also possible to detect periods of crisis based on the annual growth of the Federal Mortgage Company price index. This indicator only saw an annual growth of 2% during the 2009 crisis, whereas one year earlier, it appreciated 8% when the low-income housing segment was still booming. The index subsequently grew at stable rates, reflecting the decline in construction between 2012 and 2013 caused by the prevailing excess supply of low-value housing. In Figure 3c.8 below, we can see the structural change that occurred starting in 2014 when construction reactivated, focusing to a greater extent on middle-income and residential segments. Between 2014 and 2016, the residential market was boosted a second time, which, as mentioned previously, occurred during a period of low mortgage interest rates and an increase in subsidies from the federal government to purchase housing.[5]

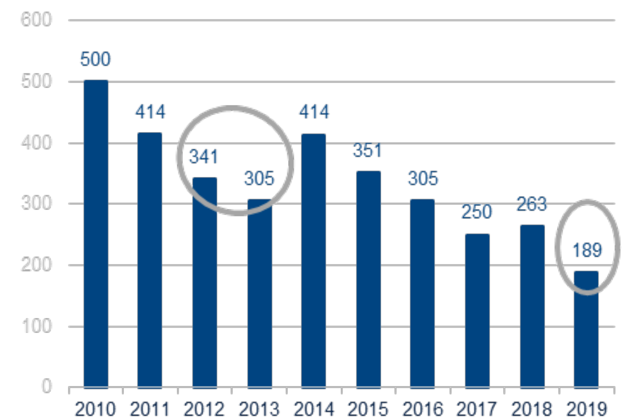
5: The historical average of the amount earmarked for subsidies for purchasing housing by the Mexican Housing Commission (CONAVI) is 7 billion pesos per year, but between 2014 and 2016, amounts reached between 12 and 14 billion pesos.

Figure 3c.7 **SHF PRICE INDEX (YoY % CHANGE)**



Source: BBVA Research based on data from SHF

Figure 3c.8 **HOUSING CONSTRUCTION RECORDS (THOUSANDS OF UNITS)**



Source: BBVA Research based on RUV data

With the revival of the market in the high-value segments, housing reached its highest peak in capital gains in 2015, recording an annual rate of 10% in the overall index, while the medium-residential subindex was 11.3%. Generally speaking, the trend in housing construction shows that the greatest growth has been in the amount, as the number of construction records has mostly declined. However, by the end of 2019, the slowdown in the economy had already resulted in a 28% contraction in annualized figures and the number of units had fallen below 250,000, which we consider to be the long-term equilibrium stock. Housing appreciation is thus slowing down in line with decreased demand for housing.

Conclusions

Contractions in the Mexican mortgage activity have been caused by factors relating to supply or demand. While this market is relatively young with respect to other countries, the available historical information allows us to identify three recent periods of crisis/recession in the mortgage market served by the banking sector, while Infonavit has faced four relevant crises.

The most significant period of contraction in terms of magnitude was in 1995, followed by the international crisis of 2009. Since then, there have been two further crises, which, although less significant in terms of the scale of contraction, help us identify changes in consumer preferences and the rigidity in the adaptation of supplies at the time, as well as the role that public policies have played in changing the duration of real estate cycles.

The current crisis, exacerbated by the COVID-19 pandemic, is being worsened by both supply and demand factors for the first time. Unlike the 2009 crisis, which was largely caused by demand, or the 2013 crisis, which was mostly due to supply factors, we estimate that up to 1.5 million jobs could be lost in 2020. The most negative impact on the sector may therefore not be seen until 2021, given the delayed effect on housing demand.

The effect on demand may be of such magnitude that even with a possible decline in mortgage interest rates and a slowdown in house prices, we do not expect an early recovery. Unlike the 2009 crisis, on this occasion we are likely to see a slow recovery, reaching positive figures by 2022.

4. Statistical Annex

Table 4.1 **ANNUAL MACROECONOMIC INDICATORS**

	2012	2013	2014	2015	2016	2017	2018	2019	2020e
Real GDP (Annual % change)	3.6	1.4	2.8	3.3	2.9	2.1	2.1	-0.1	-7.0
Real private consumption (Annual % change)	2.3	1.8	2.1	2.7	3.7	3.2	2.3	0.6	
Real government consumption (Annual % change)	3.4	0.5	2.6	1.9	2.6	0.7	3.0	-1.5	
Real construction investment (annual % change)	2.1	-5.3	2.2	1.5	-0.4	-2.9	-0.5	-3.7	
Residential	1.4	-5.0	3.2	3.7	4.2	1.9	1.1	-1.5	
Non-residential	2.7	-5.5	1.5	-0.1	-4.0	-6.9	-2.0	-5.8	
Total formal private employment (IMSS)									
Thousands of persons (average, sa)	15,899	16,418	17,032	17,751	18,431	19,244	19,988	20,427	
Annual % change	4.7	3.3	3.7	4.2	3.8	4.4	3.9	2.2	
Average salary (IMSS)									
Nominal pesos per day, average	270.8	281.5	294.1	306.4	317.9	333.2	352.2	375.7	
Real annual % change	0.0	0.1	0.4	1.4	0.9	-1.1	0.8	2.9	
Real total wages (IMSS, annual % change)	5.1	3.6	4.0	5.8	4.8	3.2	4.9	5.3	
Minimum general salary (daily)									
Nominal pesos	60.5	63.1	65.6	69.2	73.0	80.0	88.4	102.7	
Real annual % change	-0.1	0.4	-0.1	2.8	2.6	3.1	5.5	12.2	
Consumer prices (eop, annual % change)	3.6	4.0	4.1	2.1	3.4	6.8	4.8	2.8	
TIIE 28 average (%)	4.8	4.3	3.5	3.3	4.5	7.1	8.0	8.3	
10-year interest rate, Govt. bond (M10)	5.7	5.7	6.0	5.9	6.2	7.2	8.0	7.5	

Source: BBVA Research with Banco de Mexico, Conasami, Inegi & IMSS data

Table 4.2 **ANNUAL CONSTRUCTION AND HOUSING INDICATORS**

	2012	2013	2014	2015	2016	2017	2018	2019	2020e
Real construction GDP (annual % change)	2.4	-1.6	2.7	2.4	1.9	-0.8	0.5	-5.0	-13.1
Building	2.7	-3.0	3.2	3.3	4.2	0.4	1.2	-3.0	-17.6
Civil engineering and major works	0.7	3.0	-1.6	-0.5	-9.5	-9.7	-6.0	-6.1	-2.7
Specialized construction work	4.2	-2.3	9.2	3.1	10.1	7.2	5.3	-13.1	-1.8
Total construction employment (IMSS)									
Thousands people, average	1,275.2	1,289.8	1,383.5	1,504.0	1,537.1	1,602.4	1,682.6	1,656.3	
Annual % change	6.3	1.1	7.3	8.7	2.2	4.2	5.0	-1.6	
Hydraulic cement sales (tons, annual % change)	2.1	-2.7	5.3	7.5	2.8	1.1	0.8	-6.9	
Construction companies[1]									
Real production value (annual % change)									
Total	3.4	-4.9	-0.5	-0.2	-3.2	-1.3	-2.7	-8.1	
Building	2.0	-7.9	3.9	-2.9	2.6	2.7	-7.3	-4.3	
Public works	0.5	-8.0	-5.2	4.7	-8.1	-8.7	-4.2	-6.8	
Water, irrigation and sanitation	1.9	-13.5	-3.9	-11.2	4.5	-7.5	11.8	-14.3	
Electricity and communications	-6.8	10.2	-10.4	5.3	13.9	-2.5	-1.1	-10.0	
Transportation	-2.7	-12.9	-1.3	-4.7	-2.3	1.4	-7.9	-9.5	
Oil and petrochemicals	14.7	-3.9	-11.0	36.0	-34.5	-42.3	-5.2	17.6	
Other	36.4	29.3	2.4	-9.1	-4.3	12.7	20.7	-23.1	
Construction prices (annual % change)									
Headline	0.4	-0.7	6.5	2.3	8.7	7.9	10.3	-0.1	
Construction materials	-0.2	-1.4	4.5	4.5	9.8	8.7	11.3	-0.9	
Labor	3.2	2.9	3.5	4.2	2.9	4.4	5.3	4.9	
Equipment rental	-0.2	1.4	4.1	7.8	7.9	3.0	3.4	2.6	

1: Considers companies affiliated and not affiliated to the Mexican Chamber of the Construction Industry.
Source: BBVA Research with Banco de Mexico, Conasami, Inegi, IMSS, Infonavit and Fovissste data

Table 4.3 ANNUAL HOUSING CREDIT INDICATORS

	2011	2012	2013	2014	2015	2016	2017	2018	2019
Number of loans granted (thousands)									
Total	599.3	607.0	583.7	609.4	599.2	572.3	565.3	545.5	519.5
Infonavit	445.5	421.9	380.6	387.0	393.0	369.1	388.8	370.8	335.1
Fovissste	75.2	64.3	65.9	63.1	64.4	63.4	51.6	48.7	48.9
Commercial banks and Sofomes	78.6	120.7	137.1	159.3	141.8	139.7	124.8	126.0	135.5
Reduction**	23.4	45.4	58.7	82.5	56.6	51.1	36.8	29.4	35.8
Individual credits	575.9	561.6	525.0	527.0	542.5	521.2	528.5	516.0	483.6
Financing flow[1]									
Total	380.2	376.7	371.9	408.6	414.1	399.9	382.3	391.2	392.1
Infonavit	203.3	181.1	156.1	165.8	167.0	151.4	164.0	161.3	158.2
Fovissste	58.6	53.9	53.3	57.7	55.6	53.4	41.2	37.6	35.8
Commercial banks and Sofomes	118.3	141.7	162.5	185.2	191.4	195.2	177.2	192.3	198.1
Commercial banks current loan portfolio									
Balance end of period[1]	570.2	601.1	623.0	648.9	713.9	772.8	789.3	813.0	865.8
Delinquency rate (%)	3.2	3.1	3.5	3.3	2.8	2.4	2.5	2.5	2.8

Notes: Between 2011 and 2016, data do not considers Sofoles/Sofomers. As of 2008, the SHF index of housing prices is used as a price deflator.
* Annualized to December
** It refers to financing (loans and grants) that are considered in two or more institutions. Do not considers "Infonavit Total" nor Second loan granted by the Infonavit.
Source: BBVA Research with Banco de Mexico, ABM & CNBV data

Table 4.4 SHF QUARTERLY HOUSING PRICE INDEX BY STATE (ANNUAL % CHANGE)

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
National	7.4	7.5	7.9	8.6	8.4	8.7	9.0	9.3	9.0	9.2	8.4	7.7
Aguascalientes	6.9	7.3	7.9	8.5	8.3	8.3	8.4	8.2	7.9	8.3	8.3	8.3
Baja California	6.4	6.6	7.0	8.2	8.7	9.1	9.5	9.6	8.9	9.0	9.1	8.8
Baja California Sur	6.2	6.3	6.3	7.0	7.6	8.2	9.1	10.1	9.5	9.5	9.3	8.6
Campeche	6.1	6.4	7.1	8.3	8.6	8.9	9.3	9.6	8.9	8.7	8.2	7.6
Chiapas	6.3	6.1	6.3	7.3	7.5	8.1	8.4	8.4	7.8	7.4	7.2	6.9
Chihuahua	6.2	6.2	6.2	6.5	6.4	6.8	7.5	8.3	8.0	8.2	7.7	6.9
Coahuila	6.9	6.6	6.7	6.7	6.5	6.8	7.5	8.4	8.3	8.7	8.1	7.3
Colima	6.9	6.9	7.2	8.3	8.5	8.8	9.2	8.9	8.5	8.7	8.1	7.7
Durango	4.9	4.7	5.1	5.7	5.8	6.6	7.1	7.3	7.0	6.6	6.2	6.0
Guanajuato	6.9	7.1	7.8	9.0	9.1	9.6	9.9	9.7	9.4	9.3	8.6	8.1
Guerrero	6.8	6.5	6.8	7.3	7.3	7.7	7.9	8.0	7.3	7.2	6.7	6.6
Hidalgo	7.0	6.0	5.8	5.9	5.9	6.7	7.5	7.9	7.6	7.7	7.2	6.5
Jalisco	6.5	7.3	8.9	10.7	10.9	11.3	11.2	11.4	11.1	11.3	11.0	10.2
México	6.7	6.5	7.0	7.7	7.7	8.3	8.6	8.3	7.5	7.2	6.6	6.6
Mexico City	11.1	11.7	12.2	12.5	11.3	10.5	10.4	11.0	11.5	12.1	9.8	7.2
Michoacán	6.5	6.4	6.9	7.9	8.0	8.8	9.0	8.8	8.6	8.2	7.9	7.8
Morelos	7.0	6.6	6.5	6.6	6.6	7.3	8.1	8.6	7.9	7.8	7.2	6.8
Nayarit	8.7	8.6	8.4	8.8	8.4	8.4	9.3	10.1	10.0	10.3	9.6	8.4
Nuevo León	7.8	8.2	8.8	9.7	9.6	9.6	10.0	9.9	9.4	9.5	8.6	8.0
Oaxaca	5.7	5.9	6.6	8.1	8.3	8.4	8.3	7.8	7.1	7.1	7.0	6.7
Puebla	7.2	7.3	7.8	8.9	9.0	9.3	9.5	9.4	8.7	8.5	8.3	7.9
Querétaro	6.4	6.4	7.0	7.7	7.9	8.4	8.7	8.6	7.8	7.6	7.2	7.3
Quintana Roo	8.3	8.2	7.3	6.4	6.4	6.7	8.5	10.8	11.0	11.8	11.2	9.2
San Luis Potosí	7.3	7.3	7.7	8.4	8.5	9.1	9.6	9.7	9.4	9.0	8.1	7.4
Sinaloa	7.1	7.3	7.5	8.3	8.3	8.6	9.1	9.3	9.4	9.8	9.6	9.2
Sonora	6.2	6.0	5.9	5.9	5.8	6.1	6.7	7.2	7.0	7.7	7.7	7.6
Tabasco	5.6	5.5	6.3	7.8	8.1	8.8	8.7	8.1	7.2	6.4	6.1	6.2
Tamaulipas	5.9	5.6	5.6	5.7	5.5	5.9	6.6	7.4	7.3	7.8	7.5	6.8
Tlaxcala	6.5	6.5	7.0	7.3	6.6	6.6	6.6	7.1	6.8	6.6	6.0	4.8
Veracruz	5.5	5.3	5.6	6.1	6.0	6.4	6.8	7.0	6.6	6.5	6.0	5.4
Yucatán	8.1	8.0	7.7	7.6	7.5	7.8	8.7	9.4	9.1	9.4	8.9	8.2
Zacatecas	5.6	6.1	6.6	7.7	7.8	8.1	8.6	8.7	8.2	8.3	7.8	7.0

Fuente: BBVA con datos de Sociedad Hipotecaria Federal

Table 4.5 **QUARTERLY MACROECONOMIC INDICATORS**

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Real GDP (annual % change)	3.5	1.9	1.6	1.6	1.6	3.0	2.5	1.4	1.2	-0.9	-0.3	-0.5
Real private consum. (annual % chge.)	3.6	3.6	3.3	2.4	2.4	3.1	2.4	1.3	0.9	-0.2	0.8	0.9
Real gvmnt. consum. (annual % chge.)	2.6	0.5	-0.7	0.3	3.1	5.4	2.7	0.8	-0.8	-2.9	-2.0	-0.2
Real const.investment (annual % chge.)	-1.7	-5.2	-2.2	-2.4	0.7	4.5	-1.2	-5.7	1.1	-6.0	-4.9	-5.3
Residential	5.6	-1.9	3.0	1.1	6.8	7.4	-3.3	-6.1	3.0	-6.2	-2.6	-0.1
Non-residential	-7.4	-8.1	-6.7	-5.3	-4.6	1.8	0.8	-5.3	-0.8	-5.7	-6.9	-9.8

Source: BBVA Research with Inegi data

Table 4.6 **QUARTERLY CONSTRUCTION AND HOUSING INDICATORS**

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Real construction GDP	1.6	-3.3	-0.8	-0.4	3.2	5.1	-0.6	-5.4	-0.2	-7.1	-6.9	-5.8
Vol. index 2003=100 (annual % chge.)												
Building	3.3	-3.6	0.5	1.4	4.5	6.2	-1.3	-4.0	2.7	-5.8	-5.2	-3.9
Const. engineering and major works	-13.3	-11.1	-7.9	-6.4	-6.5	0.7	-4.0	-13.6	-4.7	-7.0	-4.1	-8.5
Specialized construction work	18.0	10.3	3.1	-1.2	9.7	5.2	7.4	-1.2	-8.5	-13.2	-18.1	-12.5
Construction companies[1]												
Real production value (annual % chge.)												
Total	-0.1	-1.7	-1.1	-2.3	-1.4	1.5	-2.0	-8.2	-2.9	-8.3	-9.7	-11.3
Building	5.9	6.2	4.1	-4.0	-4.0	-4.0	-8.7	-11.8	0.3	-5.0	-6.2	-6.2
Public works	-7.4	-14.2	-10.6	-3.0	-6.0	1.3	-1.4	-9.8	-4.2	-6.1	-4.7	-12.0
Water, irrigation and sanitation	7.7	-7.4	-2.1	-23.2	10.9	9.8	11.7	14.6	-8.3	-5.1	-18.9	-24.4
Electricity & communications	25.2	-13.3	-15.3	1.3	-8.7	-6.4	3.9	6.2	-1.7	0.3	-3.1	-29.9
Transportation	3.0	-3.0	-0.6	5.8	-6.2	2.3	-3.8	-21.4	-9.7	-15.7	-10.3	-1.5
Oil and petrochemicals	-53.6	-49.1	-38.2	-22.1	-15.5	3.2	-8.7	0.7	24.8	31.8	33.1	-10.2
Other	8.6	20.8	14.8	7.5	28.9	23.0	21.0	12.0	-9.8	-24.1	-31.9	-24.9

1: Considers companies affiliated and not affiliated to the Mexican Chamber of the Construction Industry.
Source: BBVA Research with Inegi and Banco de México data

Table 4.7 **QUARTERLY HOUSING MARKET INDICATORS**

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Home sales by organization (thousands of credits)												
Infonavit	76.0	100.2	101.8	110.8	74.7	101.7	98.4	96	66.6	85.9	87.7	94.9
Fovissste	10.4	15.0	12.0	14.3	9.8	13.1	13.1	12.7	9.5	12.5	13.2	13.8
Banks	21.0	20.8	20.9	25.4	20.8	23.9	24.7	27.2	21.3	24.7	24.8	28.8
Total	107.4	135.9	134.7	150.5	105.2	138.7	136.2	135.9	97.4	123.0	125.7	137.6
Financing (billions of December 2019 pesos)												
Infonavit	30.7	39.1	45.2	49.0	32.3	44.4	42.3	42.3	32.0	40.4	41.1	44.6
Fovissste	8.3	12.2	9.8	10.9	8.0	10.5	9.7	9.6	6.8	9.3	10.0	9.8
Banks	45.0	40.3	42.9	49.0	40.7	49.2	49.0	53.3	45.6	49.6	49.7	53.2
Total	84.0	91.6	97.9	108.9	81.0	104.1	101.0	105.1	84.4	99.4	100.8	107.6
Infonavit: number of credits to buy a house (thousands)												
Economic + Popular[2]	50.2	67.9	64.1	68.3	47.8	65.4	62.6	57.0	37.0	49.4	49.0	51.0
Traditional	15.2	19.7	23.5	26.1	16.2	22.1	21.8	23.9	17.0	22.0	23.5	26.5
Middle income	8.3	9.9	10.9	13.0	8.5	11.3	10.8	11.8	9.7	11.2	11.9	13.6
Residential	2.0	2.4	2.8	3.1	1.9	2.6	2.7	2.9	2.4	2.8	2.9	3.3
Residential Plus	0.3	0.4	0.5	0.4	0.3	0.4	0.4	0.4	0.5	0.5	0.5	0.5
Total	76.0	100.2	101.8	110.8	74.7	101.7	98.4	96.0	66.6	85.9	87.7	94.9

Note: Price ranges expressed in times the minimum monthly wage (TMMW); Economic and Popular Segment (118-200), Traditional (201-350), Middle income (351-750), Residential (751-1500) and Plus (1500 and more). MMW=2,046 pesos in 2014 in the "A" zone.
2: Includes new and used homes
Source: BBVA Research with INEGI, Infonavit, Fovissste, Banxico data

Table 4.8 **QUARTERLY HOUSING CREDIT INDICATORS**

	1Q17	2Q17	3Q17	4Q17	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Commercial banks current loan portfolio												
Delinquency rate (%)	2.4	2.4	2.4	2.5	2.5	2.4	2.5	2.5	2.5	2.6	2.7	2.8

Source: BBVA Research with Inegi, Infonavit, Fovissste, Banxico data

Table 4.9 **MONTHLY MACROECONOMIC INDICATORS**

	D.18	J.19	F	M	A	M	J	J	A	S	O	N	D
IGAE (annual % change)	-0.3	1.1	0.9	1.1	-1.5	-0.5	-1.1	0.5	-1.0	0.1	-0.8	-1.2	0.7
Real constr. vol. (ann. % change)	-7.5	1.7	0.1	-2.3	-4.4	-9.6	-7.0	-8.8	-3.1	-8.5	-9.3	-3.7	-3.9
Building	-5.6	4.6	3.0	0.1	-3.5	-8.3	-5.6	-7.3	0.3	-8.7	-9.0	1.0	-2.5
Civil engineering & major works	-17.0	-2.6	-4.7	-6.2	-5.9	-9.6	-6.2	-4.8	-2.3	-4.7	-5.5	-12.7	-6.8
Specialized construction work	-2.0	-7.3	-8.8	-8.3	-6.4	-16.3	-15.0	-20.6	-18.8	-12.1	-15.4	-14.8	-8.2
Total formal private empl. (IMSS)													
Thousand people	20,079	20,174	20,300	20,349	20,379	20,383	20,369	20,385	20,422	20,567	20,727	20,804	20,421
Annual % change	3.4	3.3	3.1	2.8	2.5	2.4	2.4	2.2	1.8	1.9	1.8	1.7	1.7
Average salary quote (IMSS)													
Nominal daily pesos	354.4	372.3	373.6	372.8	373.7	377.5	376.6	380.7	379.7	374.5	373.2	375.8	378.1
Real annual % change	0.5	2.5	2.9	2.6	2.4	2.3	2.5	2.6	3.3	3.3	3.3	3.5	3.8
Real total wages (IMSS)													
Annual % change	3.9	5.8	6.0	5.5	5.0	4.7	5.0	4.9	5.2	5.3	5.2	5.2	5.5
Minimum general wage (daily)													
Nominal pesos	88.4	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7	102.7
CPI (end of period)													
Annual % change	4.8	4.4	3.9	4.0	4.4	4.3	3.9	3.8	3.2	3.0	3.0	3.0	2.8
TIIE 28 (average, %)	8.4	8.6	8.6	8.5	8.5	8.5	8.5	8.5	8.4	8.2	8.0	7.9	7.7
10-year Gov. bond int. rate (M10)	8.6	8.4	8.2	8.0	8.1	8.0	7.6	7.5	7.0	6.9	6.8	7.1	6.9

Source: BBVA Research with Inegi, Banco de México, IMSS data

Table 4.10 **MONTHLY CONSTRUCTION AND HOUSING INDICATORS**

	D.18	J.19	F	M	A	M	J	J	A	S	O	N	D
Const. employment (IMSS)													
Total (thousand people)	1,587	1,631	1,647	1,638	1,643	1,650	1,654	1,674	1,676	1,685	1,707	1,695	1,574
Annual % change	0.6	0.4	-0.1	0.0	-1.8	-2.1	-2.1	-2.3	-3.4	-2.9	-2.3	-1.0	-0.8
Hydraulic cement sales (tons)													
Annual % change	-7.1	-11.2	-9.4	-7.4	-12.5	-11.4	-6.6	-4.4	-4.2	-11.1	2.4	-4.7	-1.0
Resid. cons. prices (ann. % chge.)													
Headline	10.3	8.6	7.5	6.4	5.0	4.1	3.1	2.0	1.7	1.3	1.0	0.2	-0.1
Materials	11.3	9.1	7.9	6.5	5.0	3.9	2.7	1.5	1.1	0.6	0.3	-0.6	-0.9
Labor	5.3	6.5	5.7	6.4	4.9	5.5	5.4	4.9	5.4	5.0	4.9	4.9	4.9
Machinery rental	3.4	2.6	3.3	3.3	3.2	2.1	3.0	3.8	4.8	4.7	4.4	2.7	2.6

Fuente: BBVA Bancomer con datos de Banco de México, INEGI, IMSS

Table 4.11 **MONTHLY HOUSING CREDIT INDICATORS**

	D.18	J.19	F	M	A	M	J	J	A	S	O	N	D
Commercial banks loan portfolio													
Balance in billion pesos*	813.0	816.9	820.9	826.7	829.5	841.5	847.1	851.8	858.0	862.9	864.0	865.6	865.8
Annual % change	3.0	3.5	4.0	4.3	3.9	4.2	4.8	5.1	6.1	6.0	6.2	6.3	6.5
Total annual cost (CAT, average)	13.2	13.2	13.3	13.4	13.4	13.4	13.3	13.3	13.3	13.2	13.2	13.1	13.0

* October 2017 pesos
Source: BBVA Research with Banco de México, Conasami, INEGI, IMSS, CNBV data

5. Special topics included in previous issues

First Half 2019
Real estate services and their economic determining factors
High concentration of demand for bank mortgage credit

Second half 2018
Construction performance below its potential
An approach to the prices faced by builders
Population, lag and employment; their contribution to the state distribution of the mortgage market

First Half 2018
The significance of business expectations in construction
Low mortgage debt of households

First Half 2017
The determining factors of the housing supply in Mexico
Infrastructure still awaits reform effect

Second Half 2016
Commercial building construction and its cycle of appreciation
Rising house prices due to increased costs

First Half 2016
The evolution of housing prices in regional clusters in Mexico
Methodology to assess the spatial dependence of housing prices
Mortgage essential in housing demand
Infonavit maintains credit placement stable

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The significance of consumer expectations in mortgage lending
The Infonavit 2015-19 Financial Plan. Financial soundness and a greater amount of lending are key features

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Creating Opportunities

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