

Mexico Real Estate Outlook

2nd HALF 2016 | MEXICO UNIT



01
Mortgage lending market slows, but will continue to grow faster than the economy as a whole.

02
Commercial building construction continues to be a viable alternative for the construction sector and credit institutions.

03
In many cities, increased housing prices are the result of higher building costs.

Index

1. Summary	2
2. Situation	
2.a Construction will close 2016 showing growth	3
2.b Mortgage lending still growing	13
3. Special topics	
3.a Commercial building construction and its cycle of appreciation	21
3.b Rising house prices due to increased costs	29
4. Statistical appendix	38
5. Special topics included in previous issues	42

Closing date: September 2, 2016

1. Summary

Construction stands out from other sectors of the economy, with an annual rate of growth of 2.4%. This trend could reverse due to lower activity in building construction and reduced budgets for civil works. As forecast in the last number of **Mexico Real Estate Outlook**, building construction is the branch with the greatest activity in the sector, despite showing a lower growth rate than in previous half-years. On the other hand civil works were down by 3.7%, contrary to previous forecasts based on the National Infrastructure Programme. The Federal Expenditure Budget also suggests that we cannot expect any significant improvement, since fewer public resources are to be earmarked for infrastructure.

The mortgage lending market shows contraction in both the number of loans granted and their amount. This is the result of reduced origination on the part of public institutions, although bank lending grew in terms of amount. Even with the changes in monetary policy, the commercial banking market continues on a positive trend, even above that of the economy as a whole. In part this is due to the banks' not having passed on to borrowers all the increase in the reference rate. This reflects competition among banks to win market share and the fact that with this product the main incidence comes from long-term rates.

Meanwhile, the public institutions placed less credit than last year, largely due to a base effect. In 2015 demand was boosted by the increase in maximum amounts granted by Infonavit (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, the Mexican federal institute for workers' housing) as well as by the change in denomination of loans (from multiples of the minimum wage to flat peso amounts). We estimate that this year 50,000 fewer loans will be granted than last year. This, together with the confirmed cut in housing subsidies, leads us to expect lower demand.

In discussing the real estate sector we have focused on details mainly from the perspective of residential building construction. However, a comprehensive review of this sector must also include building construction of commercial property. These kinds of works have performed outstandingly in previous years and present themselves as an alternative to home construction. This option is valid both for economic agents dedicated to building construction as such and for financial intermediaries such as the commercial banks. The increase in commercial building construction has gained ground on housing thanks to sustained demand for industrial facilities, shopping centres and office buildings. We expect a slowdown in building construction of these types due to the lower level of economic activity and the increased price of certain inputs.

According to a report by the Federal Mortgage Company, the housing price index rose by 8% in the first two quarters of the year. However it is worth pointing out that the residential market shows considerable disparities from one part of the country to another. Prices in states such as Nuevo León, Jalisco and Mexico City are considerably higher than in the rest of the country. The greater part of the appreciation is due to the cost of their inputs growing faster than the National Producer Price Index. However there are also cases in which the increase in market value is due to a greater concentration of subsidies.

2. Situation

2.a Construction will close 2016 showing growth

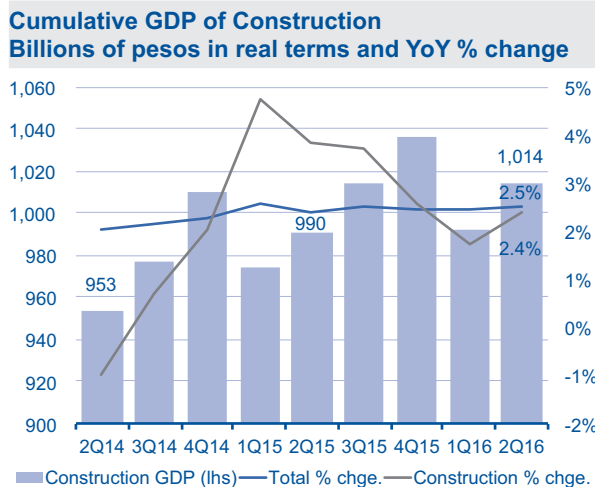
The sector has been advancing during the first half of 2016, contrary to expectations, based on a slowdown in building construction and stagnating civil works. Even so, it will be a difficult year-end for the construction sector due to reduced activity in residential building construction and fewer infrastructure developments. Budget cuts to both housing subsidies and infrastructure spending make it unlikely that the downward trend will reverse, meaning that we could be at the end of the growth path in the construction sector.

And construction is growing despite the headwinds

Building construction is growing at a rate of 4.5% p.a.

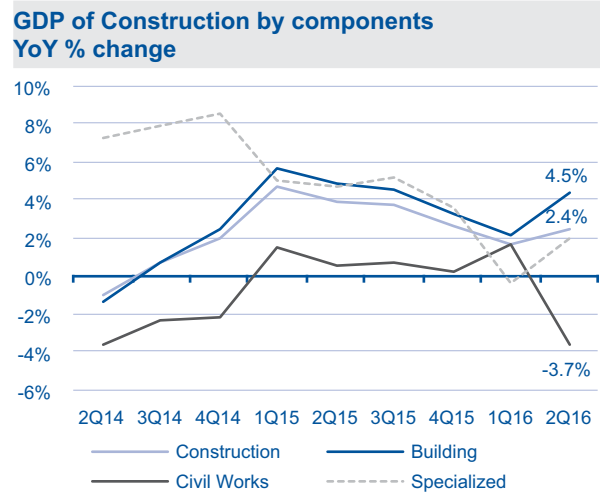
The GDP of the construction sector again outperformed the average for all sectors of the economy. Despite the decline in civil works, the sector continues to advance based on building construction. In the first half of 2016 construction grew at an annual rate of 2.4%, well in excess of what we were expecting a year ago. This result is due to the fact that the GDP of building construction grew by 4.5% year-o year in the second quarter of the year. The contribution of civil works was not positive. In this same period, GDP for this area fell by 3.7% YoY, despite having a low base for comparison due to the poor performance of the past few years.

Figure 2a.1



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

Figure 2a.2

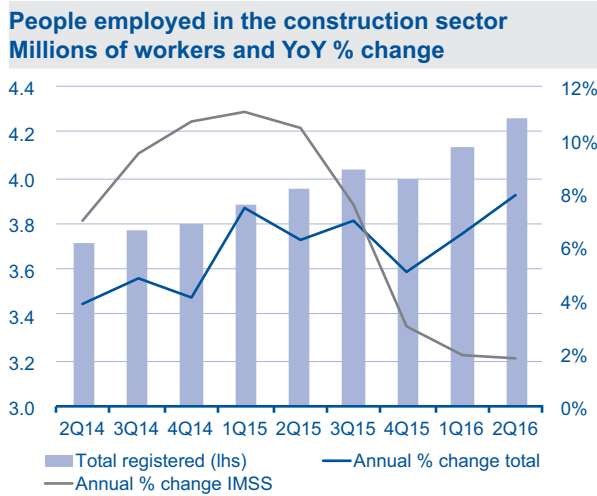


Source: BBVA Research based on data from SCNM (National Accounts System) and INEGI (National Statistics and Geographical Institute)

The increased activity we are seeing in this sector requires more manpower. The number of workers dedicated to construction has increased significantly based on figures from the National Occupation and Employment Survey (ENOE in the Spanish initials) published by the INEGI. During the first two quarters of 2016, the total number of people employed in the sector increased by more than 6% on average; while the number of workers registered with the Mexican Social Security Institute has also continued to increase, although more slowly.

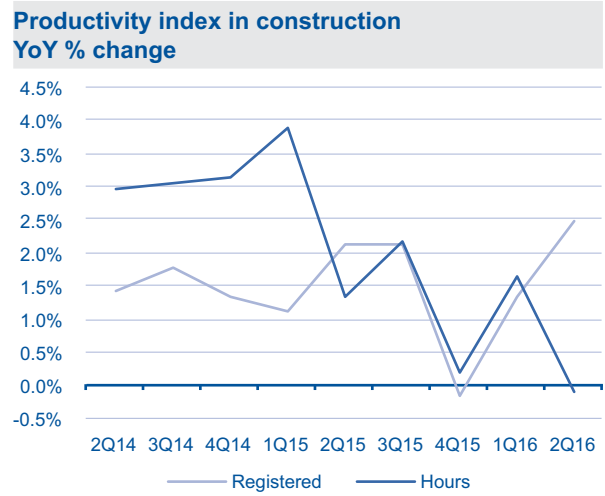
Productivity in construction also remains positive, although the pace has slowed. The labour market usually adjusts quickly to the dynamic of construction.

Figure 2a.3



Source: BBVA Research based on data from ENOE, INEGI

Figure 2a.4

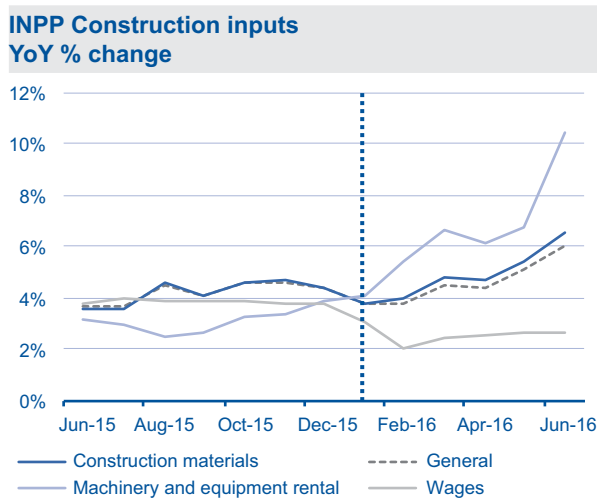


Source: BBVA Research based on data from the INEGI

The cost of inputs for construction on a rising trend

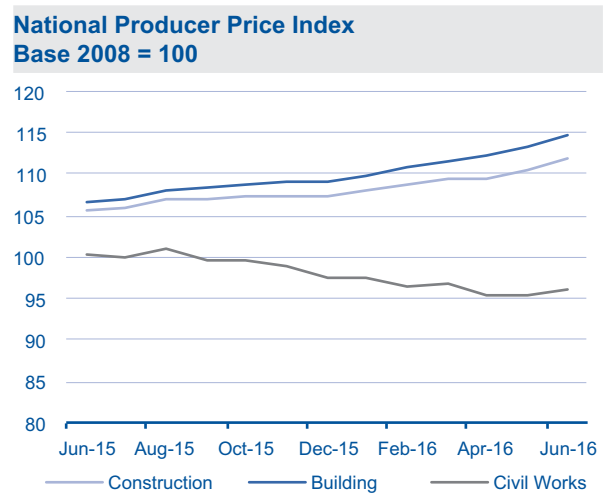
On the other hand, manufactured products and pre-construction processes serving as inputs continue showing a low level of activity. Others, such as lending and trade, continue to grow, but are slowing. This is already affecting prices of inputs to construction, the index of which is rising faster than that of headline inflation. The cost of machinery and equipment increased rapidly in the last quarter, followed by construction materials. The increased effect of these price rises is reflected in building construction, the index for which exceeds the average of the sector, whereas those of civil works are falling, clearly in line with the former's increased level of activity and the latter's stagnation. The increase in the cost of inputs for building construction pushes housing prices and commercial rents up which could affect demand in the medium term.

Figure 2a.5



Source: BBVA Research based on data from the INEGI

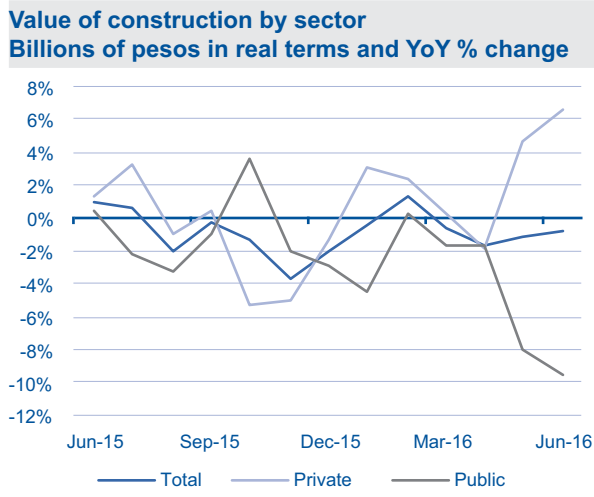
Figure 2a.6



Source: BBVA Research based on data from the INEGI

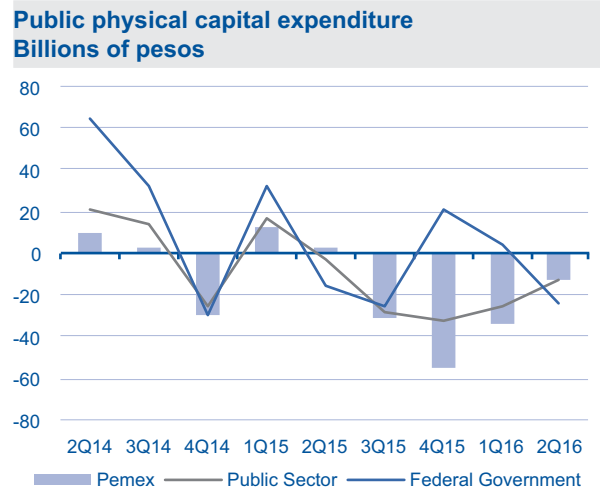
The difference in performance between building construction and civil works extends to the breakdown between public and private construction. This is because the private sector plays a greater role in building construction, whereas government activity is usually channelled more into civil works through infrastructure projects. For this reason the value of private initiative construction has continued to increase so far this year and the public sector has shown exactly the opposite behaviour. This reduced level of activity in construction is due to the fall in physical capital expenditure by the main public constructors, as we had been expecting since last year in view of the reduced allocation of resources to infrastructure in the Federal Expenditure Budget.¹

Figure 2a.7



Source: BBVA Research based on data from the INEGI

Figure 2a.8

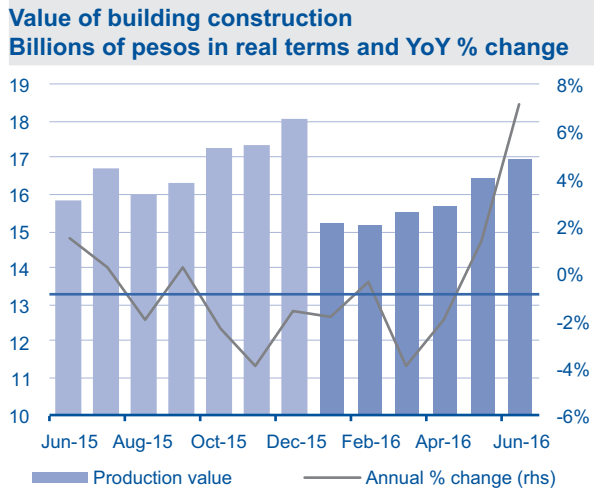


Source: BBVA Research based on data from the INEGI

As mentioned, building construction has increased while civil works have declined. Measured by the gross value of construction in each of these sub-sectors, we see that at the end of the first half of this year the value of building construction had reached 17 billion pesos, nearly 8% more than in the same period of last year. Moreover this value increased constantly month by month. In contrast, the value of infrastructure fell steadily during the first six months of 2016. In 2015, the value of this type of works was around 20 billion pesos, whereas at the mid-point of this year it barely exceeded 15 billion pesos, according to reports from construction companies.

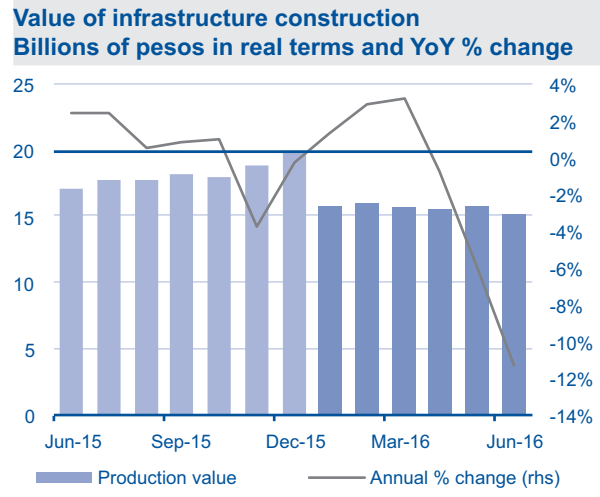
¹: Although not all physical capital expenditure goes to public works or infrastructure projects, the greater part does, and this tends to explain changes in the civil works sub-sector.

Figure 2a.9



Source: BBVA Research based on data from the INEGI

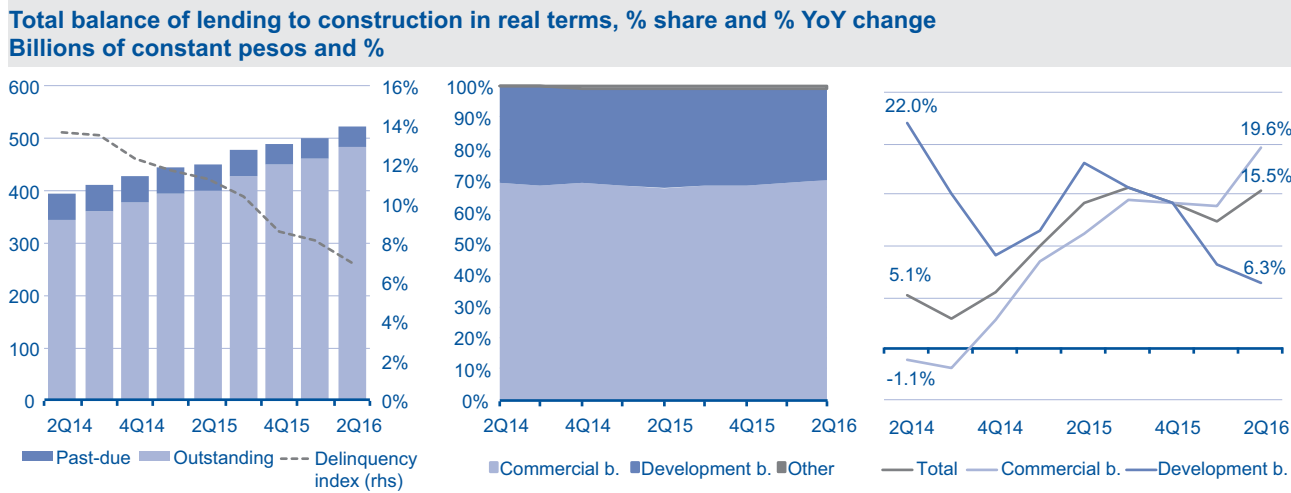
Figure 2a.10



Source: BBVA Research based on data from the INEGI

Turning to financing, bank lending for construction continues to grow and currently exceeds 500 billion pesos in real terms, with declining delinquency or NPLL rates already below 8%. This is largely due to the high rate of origination by commercial banks, which still have a 70% share of the credit market. The NPL rate has declined partly thanks to the credit granted, but also due to a decline in arrears in absolute terms.

Figure 2a.11, 2a.12 y 2a.13



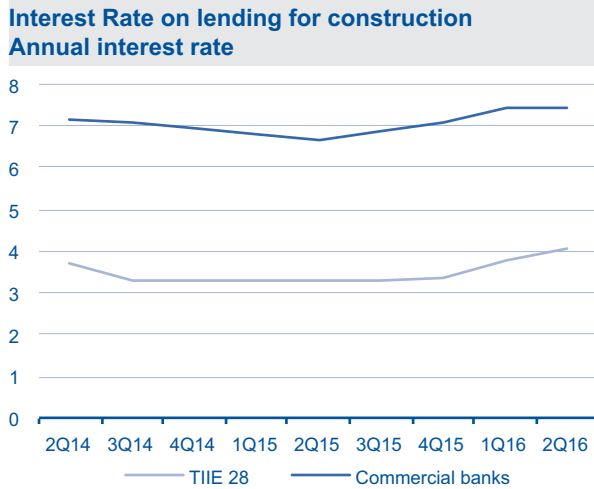
Source: BBVA Research based on Bank of Mexico data

The adjustments to monetary policy have been quickly reflected in interest rates on loans to construction companies. However they have not been reflected in full, which indicates that part of the increases has been absorbed by the banking system, since of the 175 bps increase in the reference rate,² on average only 60 bps have been passed on to the construction sector in the cost of borrowing. These higher rates no doubt have an adverse effect on demand for credit, which seemed to be observable in the first quarter of 2016, but if we

2: As at the cut-off date of this edition..

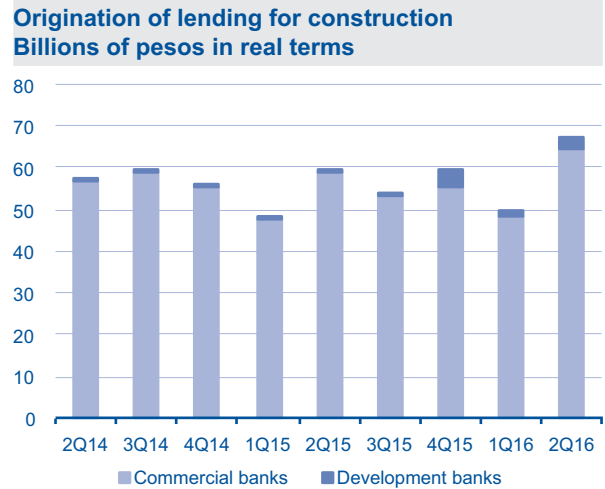
compare lending with the same quarter of last year we see a slight increase, and the trend strengthens in the second quarter of 2016. We attribute this phenomenon to the increased activity in building construction and to the effect of the change in monetary policy not having been fully passed on due to banks' eagerness to win over customers from other providers of credit.

Figure 2a.14



Source: Source: BBVA Research based on data from the CNBV (*Comisión Nacional Bancaria y de Valores*, Mexico's banking and securities regulator)

Figure 2a.15

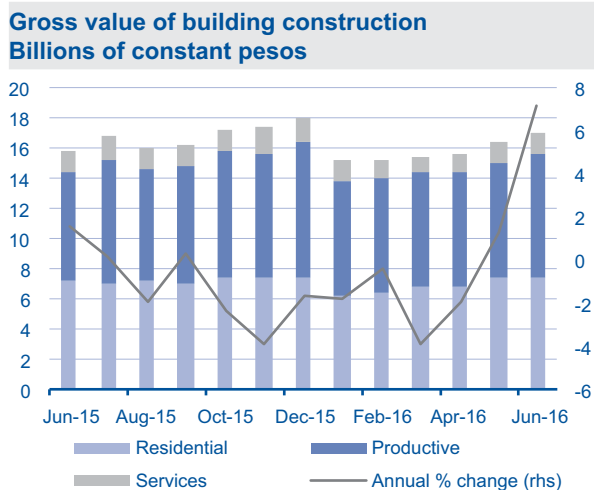


Source: Source: BBVA Research based on data from the CNBV (*Comisión Nacional Bancaria y de Valores*, Mexico's banking and securities regulator)

Building construction continues to be the sole support of the construction sector

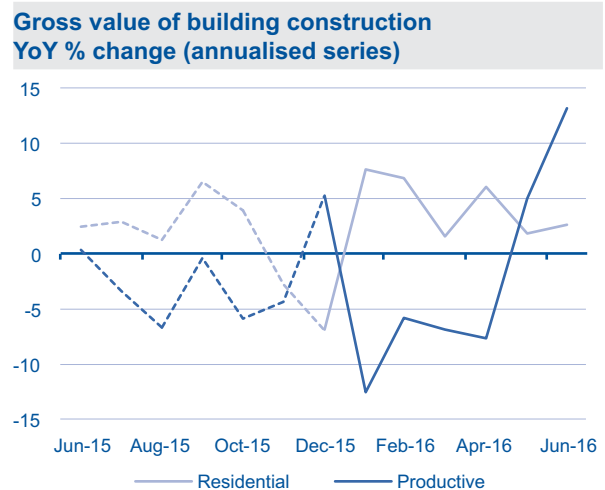
Despite slowing down, building construction continues to be the foundation on which the positive result of the construction sector so far is based. GDP for the building construction sector is growing by more than 4% annually. In terms of gross value constructed, building construction surfaced to grow by as much as 7% in June 2016. This is the result of the recovery in commercial building construction towards the end of the half-year, given that the gross value of residential construction continued to perform positively during the first six months of the year.

Figure 2a.16



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

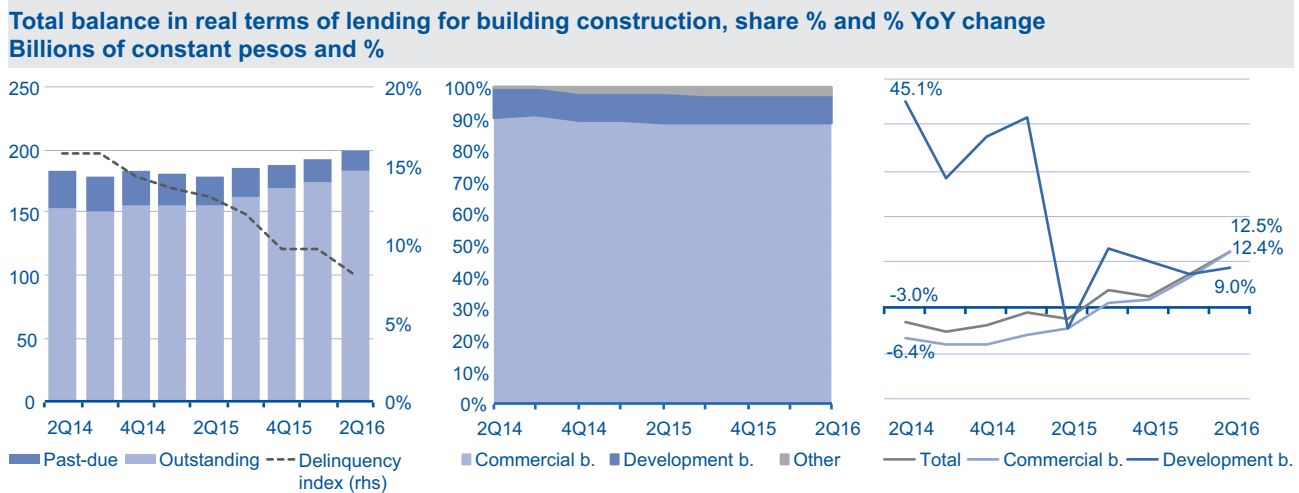
Figure 2a.17



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

We stress once again that the series of gross value of construction reported by construction companies is a good indicator of the behaviour both of the sector and of its component parts. In the case of residential building construction, gross value grew steadily in the first half of the year, thanks largely to price increases which exceeded headline inflation.³ With commercial building construction the story differs slightly, since the price index for these properties has not risen so quickly.⁴ Both components contributed to the growth of the building construction sub-sector, particularly in states such as Jalisco and Chihuahua, for both industrial properties and housing.

Figure 2a.18, 2a.19 y 2a.20



Source: BBVA Research based on Bank of Mexico data

The balance of bank lending for building construction has maintained its upward trend. In the second quarter of 2016 it grew by more than 12% year-on-year, driven mainly by the commercial banks, although development banks' contribution increased by 9% compared with the same period of last year. Increased loan origination led to the NPL rate continuing to fall, and it is now down to 8%. This reduced delinquency is due not only to the greater volume of new lending but also to a reduction in arrears, from just over 20 to 16 billion pesos. From the point of view of financing, lending for commercial building construction has performed better than that for residential construction. In annual terms, the former grew by 11.9% in real terms while the residential component grew by 8.1% according to figures from Bank of Mexico. We attribute this to the banks' intention to compete more in this segment with an expansive effect than we have seen in the housing segment.

No improvement in civil works, and outlook bleak

GDP of civil works down 3.7% YoY

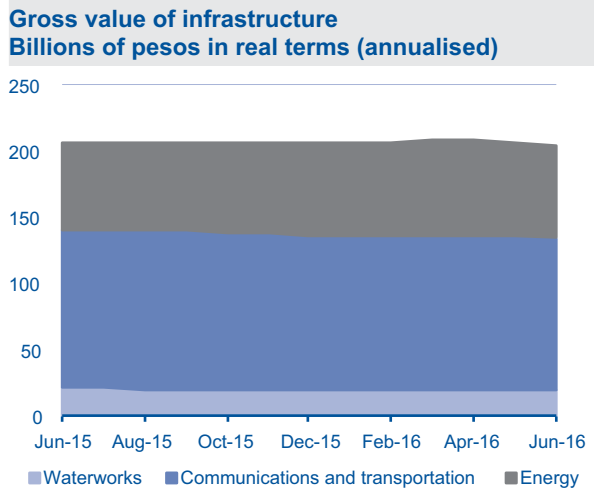
As we saw in the first section, the civil works sub-sector continues in the doldrums. The deterioration is due to the ever decreasing investment in public works. Usually the public sector builds more infrastructure than the private sector because of the size of the investments, the long-term uncertainty and its economic nature as a public good. This leads to investment in infrastructure being dependent on the resources available to the various levels of government for these types of works. In the past

3: See "Mortgage lending still growing" in this number of *Mexico Real Estate Outlook* Second half-year 2016.

4: See "Commercial building construction and its productive cycle" in this number of *Mexico Real Estate Outlook* Second half-year 2016.

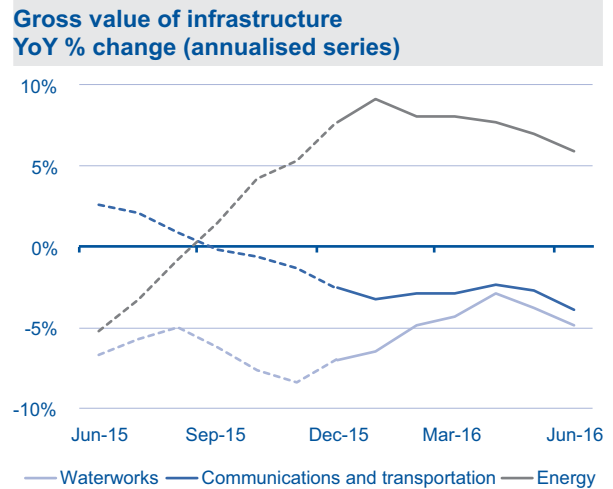
few years, despite the government's having increased revenues, resources earmarked for infrastructure have actually decreased. The result is reduced activity in infrastructure such as hydraulic works, communications and transport, which fell steadily from the end of 2015 until the middle of the current year. On the other hand, works associated with the energy sector seem to be recovering this year if we look at the growth in the gross value of construction; however these growth rates are largely due to a base effect caused by the poor results of previous periods.

Figure 2a.21



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

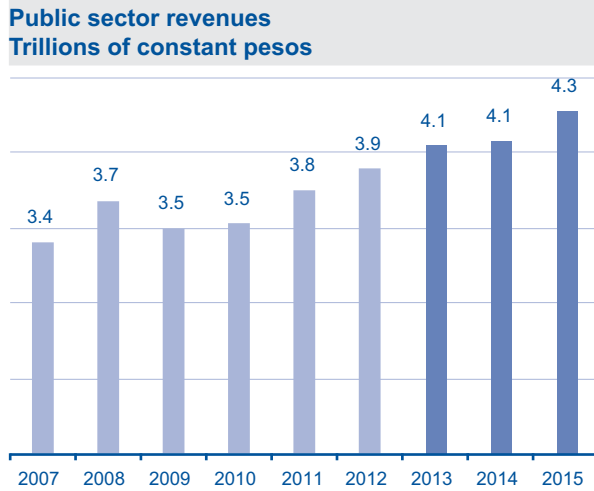
Figure 2a.22



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

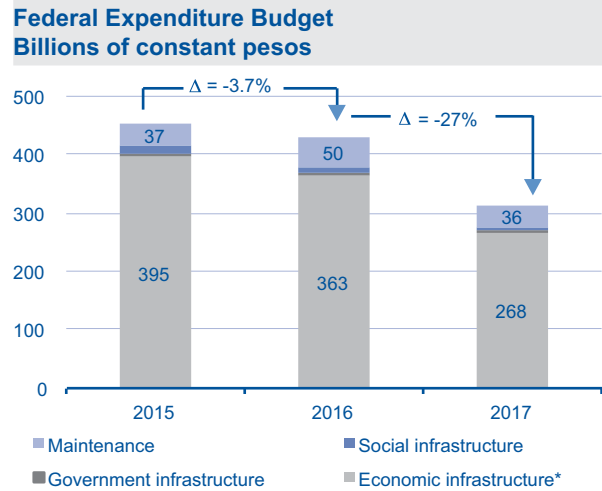
Despite the availability of increased financial resources, even at the cost of greater indebtedness, these have not been directed to the construction sector. Increased spending on infrastructure, as well as helping to bring about the conditions in which to increase potential GDP, has been an instrument for boosting economic growth, as was seen in 2009 after the international crisis. In that year, public spending directed to the construction sector and specifically to civil works reversed the negative trend of this component and of the whole sector. Public sector revenues in 2009 were 3.5 trillion pesos, which increased to 4.3 trillion in 2015, an increase of 22% in real terms. Nevertheless the public sector's share in construction, not just in infrastructure, has been declining in recent years despite its having more revenues. In the Federal Expenditure Budget (PEF) that the executive sends to Congress we can see reductions for infrastructure. From 2015 to 2016 the amount budgeted for infrastructure in general was reduced by 3.7%, and for economic infrastructure alone it went from 395 billion pesos to 363 billion pesos, a cut of just over 8% in real terms. According to the PEF for 2017, infrastructure will suffer a bigger cut of around 27%, making it difficult to think in terms of a recovery in the following year.

Figure 2a.23



Source: Source: BBVA Research based on data from the SHCP (Secretary of the Treasury and Public Credit)

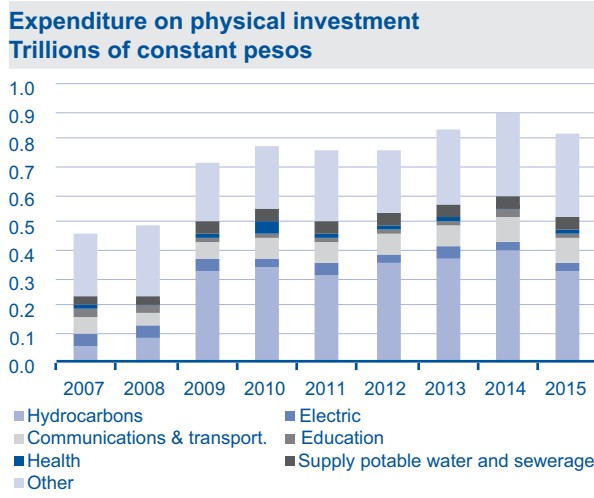
Figure 2a.24



Source: BBVA Research based on data from the PEF for 2017, SHCP
*Includes Pidiregas (PPPs for public works)

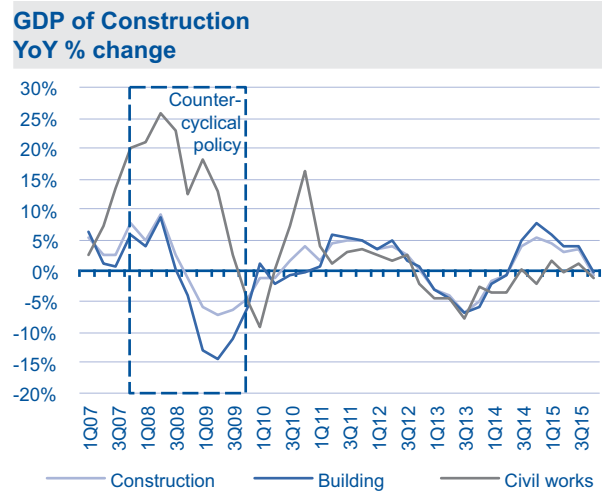
In contrast, physical capital expenditure increased until 2014. In 2009, during the international economic crisis, some 700 billion pesos were used for this purpose, whereas for 2014 the amount was 900 billion pesos. In 2015 we saw the first reduction, of around 9.4% in real terms. Resources channelled into civil works as part of a clear countercyclical policy in 2009 helped construction GDP to recover, and that of civil works in particular remained in positive territory despite the crisis. However in recent years, even with greater resources available, the effect of infrastructure on construction GDP has declined. Although not all physical capital expenditure goes on infrastructure, the greater part of it does.

Figure 2a.25



Source: Source: BBVA Research based on data from the SHCP (Secretary of the Treasury and Public Credit)

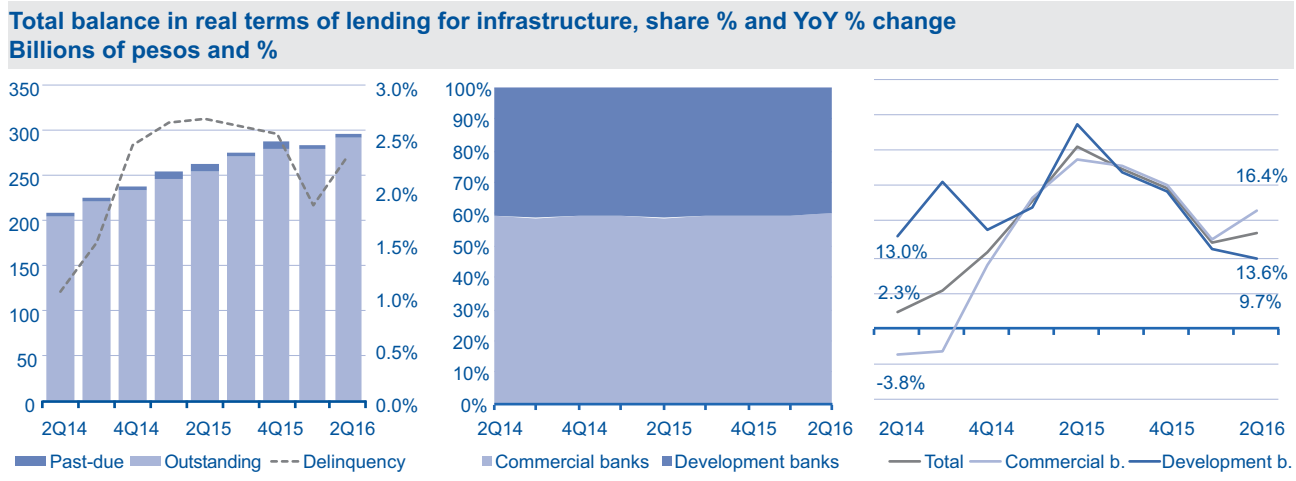
Figure 2a.26



Source: BBVA Research based on data from the INEGI

Financing of the sector, measured by the balance of bank lending, continues to increase in real terms at a rate of more than 12%. In particular, that of the commercial banks is growing at an annual rate of 16.4%, while that of the development banks increased by 9.7% YoY in the second quarter of 2016. In contrast with lending for building construction, lending for physical capital expenditure is more evenly shared between the two types of bank, largely due to the funds made available by Banobras (Banco Nacional de Obras y Servicios Públicos, or 'National Works and Public Services Bank', a state-owned development bank). In this way the total balance has practically reached 300 billion pesos, almost half as much as total private housing loans and nearly 50% more than lending to building construction, but with a much lower NPL rate of just 2.3%, showing that this portfolio is in excellent shape.

Figure 2a.27, 2a.28 y 2a.29



Source: BBVA Research based on Bank of Mexico data

2016 last positive year for construction without infrastructure

In the last edition of *Mexico Real Estate Outlook* we estimated that 2016 would be a difficult year for construction, and especially for civil works. The figures for the first half of the year the forecast seems to be half-confirmed: civil works and infrastructure continue to perform negatively, but the good results of building construction have lifted the sector, albeit not as much as we had been expecting. We do not rule out a revision of the figures as regards the GDP for the construction sector and its component parts, but even if this is not the case, the year looks set to close with a decline. As well as the reduced level of investment in infrastructure, the number of new housing projects registered has fallen, as has business confidence regarding construction. Only the IGAE (Global Economic Activity Indicator) shows a positive outlook, although it must be borne in mind that this is more a coincident than an advance indicator.

Figure 2a.30

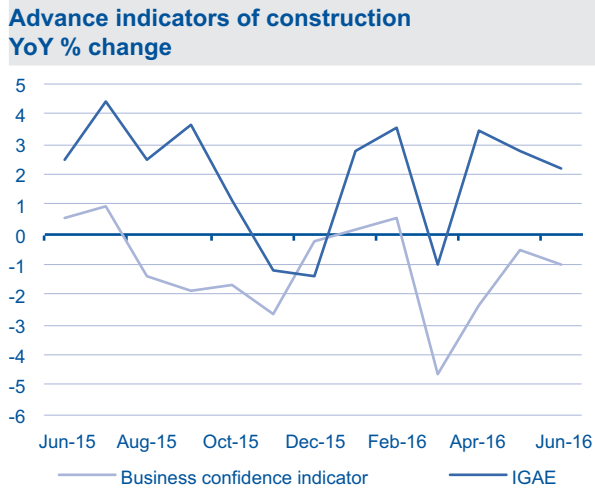
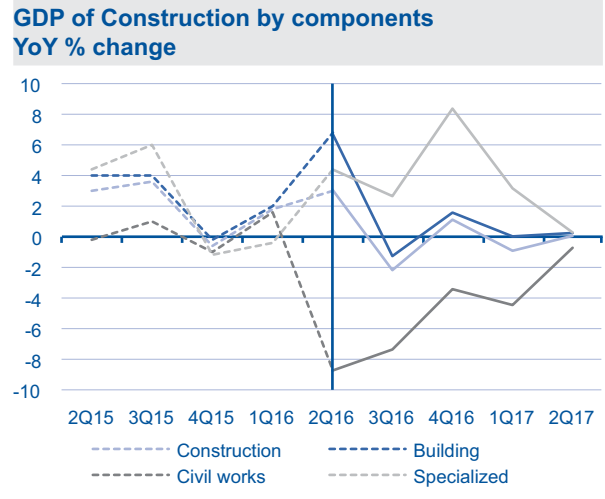


Figure 2a.31



With a downward adjustment in demand for housing, due, for example, to reduced subsidies, already taken into account by housing constructors, plus a lower budget for public works and increased costs of some inputs, we see the outlook for construction remaining bleak. In 2017 we might even see zero or negative growth.

2.b Mortgage lending still growing

In the previous edition of *Mexico Real Estate Outlook* we forecast that economic conditions would slow the rate of growth of the mortgage lending market. We attributed the slower growth to two factors, namely the passing on of the reference rate hike in lending rates for residential construction, and the slower pace of private sector formal job creation. Both these situations have materialised, and the effect can already be seen in a slowdown of the housing market.

On the one hand, despite the slower pace, **demand continues to grow thanks to job creation and the access it affords to both public and private sector mortgage credit. On the supply side, we expect further adjustment** due to the passing on of the effects of monetary policy, the increase in the cost of certain inputs for construction and the cut in the budget for subsidies for housing purchases, mainly in the regions that most rely on these resources or which are concentrated in the social housing segment.

Table 2b.1

Mortgage lending: number of loans and amounts of financing granted by institution Thousands of loans and billions of 2016 pesos

Mortgage Origination	Number of loans (Thousand)			Loan amount (MXN bn)			Average sum (MXN thousand)		
	Jun-15	Jun-16	Annual % change	Jun-15	Jun-16	Real annual % change	Jun-15	Jun-16	Real annual % change
Public agencies	224.7	214.7	-4.4	86.3	77.5	-10.2	384	361	-6.0
Infonavit	188.9	181.6	-3.9	62.5	56.8	-9.1	331	313	-5.5
Fovissste	35.8	33.1	-7.4	23.8	20.7	-12.9	666	626	-5.9
Private intermediaries ¹	66.2	64.8	-2.2	66.9	69.7	4.2	1,010	1,075	6.5
Banks ²	66.2	64.8	-2.2	66.9	69.7	4.2	1,010	1,075	6.5
Subtotal	290.9	279.5	-3.9	153.1	147.2	-3.9	526	526	0.0
Co-financings ³ (-)	27.0	23.4	-13.3						
Total	263.9	256.1	-3.0	153.1	147.2	-3.9	580	575	-1.0

1: While there are other private credit institutions (such as unregulated agents), not having reliable public information are not included.

2: Includes: credits for self-construction, re-structures, acquisition, credits for former employees of financial institutions and credits for payment of liabilities and liquidity.

3: Credits granted with Infonavit and Fovissste.

Note: It is accumulated.

Source: BBVA Research with Infonavit, Fovissste ABM, Banco de México, CNBV and SHF data

Bank mortgage lending up by 4.2% in real terms

The result for the first half of 2016 is a 3% contraction in the number of mortgage loans and a 3.9% fall in the amount of financing in real terms. Only bank lending is growing as regards the amount of credit granted, by 4.2%. Despite this situation, the banks will end the year with growth ahead of that of the economy as a whole, whereas the mortgage institutions will have lent less than last year.

Public institutions less active than in 2015

In the first half of the year, housing institutions were responsible for 4.4% fewer loans than in the same period of last year while the amount of financing shrank by 10.2% in real terms. While the pace of economic activity has admittedly slowed so far in this year, the fall in new lending also reflects a base effect in that lending was more than expected in 2015, particularly for new-build housing. In the case of Infonavit, total lending (for both purchases and improvements) was more than 37% of the Annual Operating Programme (POA), while the number of home purchase loans was over 13% more than budgeted. FOVISSSTE (*Fondo de la Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado*, the institution that provides

housing mortgages to state employees) made more than 127,000 loans compared with the 114,000 planned. Even so, Infonavit's activity is in line with that envisaged at the beginning of the year, since in the period to the end of June it lent more than 90% of the amount established in its POA, while the number of loans was 5% more than estimated for the period.

Table 2b.2

Annual Operating Programme of Infonavit Thousands of loans and percentage				
Loans	Prog. Jun-2016	Actual Jun-2016	% of target	YoY % change
Mortgage loans	174,065	183,598	105%	-3.5%
New	113,661	123,930	109%	-4.1%
Previously-owned	60,404	59,668	99%	-2.0%
Improvements	83,835	46,063	55%	-64.1%
Total	257,900	229,661	89%	-27.9%

Note: includes "Apoyo Infonavit" (a programme allowing members to leverage their Infonavit savings to obtain market-based mortgage finance), and therefore does not match Table 2b.1.

Source: BBVA Research based on data from Infonavit

Table 2b.3

Annual Operating Programme of Infonavit Millions of pesos and percentage				
Millions of pesos	Prog. Jun-2016	Actual Jun-2016	% of target	YoY % change
Mortgage loans	60,697	55,925	92%	-1.8%
New	40,001	36,074	90%	-2.1%
Previously-owned	20,696	19,851	96%	-1.2%
Improvements	2,533	1,360	54%	-63.4%
Total	63,230	57,285	91%	-5.6%

Note: includes "Apoyo Infonavit" (a programme allowing members to leverage their Infonavit savings to obtain market-based mortgage finance), and therefore does not match Table 2b.1.

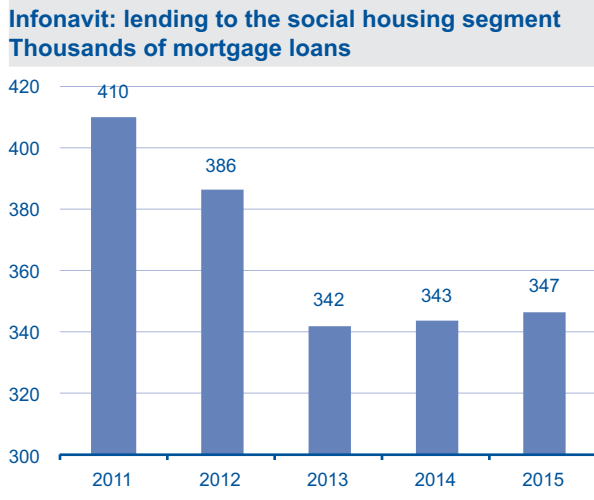
Source: BBVA Research based on data from Infonavit

Infonavit itself acknowledged that it was unlikely to be able to match last year's lending figures, estimating that 350,000 mortgage loans would be applied for in 2016, representing a decline of nearly 50,000. For some time now the figures have confirmed that the Institution is usually accurate in its new lending expectations, the exception being precisely last year, due to changes of which its members sought to take advantage. As commented upon on previous occasions, the increase in the maximum amount and the change of denomination of loans (from multiples of the minimum wage to pesos) stimulated demand exceptionally in 2015, as a result of which the figures for new lending in 2016 show contraction, but this is because they are being compared with the exceptional result as already mentioned. Even so, we can see that the POA is being fulfilled as regards lending for home purchases, and in particular lending for new housing is nine percentage points up on the forecast for the first half-year.

In contrast, the number of loans for improvements was down by 63.4% YoY in the first half-year, due to a temporary suspension in the granting of this product. This was due to a relaunch of loans for improvements and extensions aimed at preventing members from using the credit for purposes other than those established by the programme.

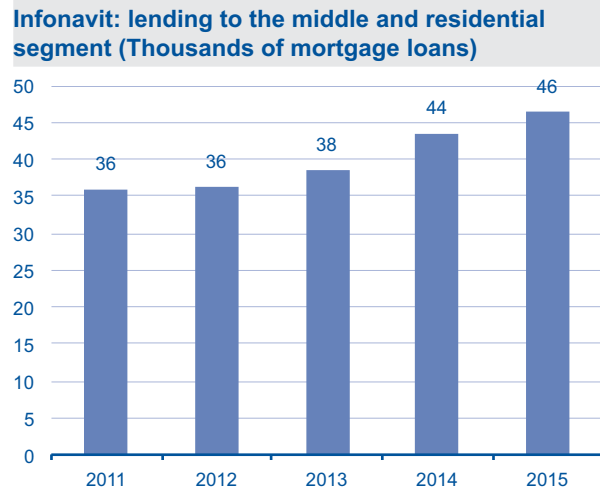
The increase in demand is not the only effect of the decision to raise the maximum loan amount from 483,000 to 850,000 pesos (with terms of up to 30 years) and denominated in pesos. Another consequence of this change is that members are acquiring higher-priced homes, as a result of which middle and residential properties have gained ground relative to the social housing segment. This trend has been evident since as long ago as 2013.

Figure 2b.1



Source: BBVA Research based on data from Infonavit

Figure 2b.2



Source: BBVA Research based on data from Infonavit

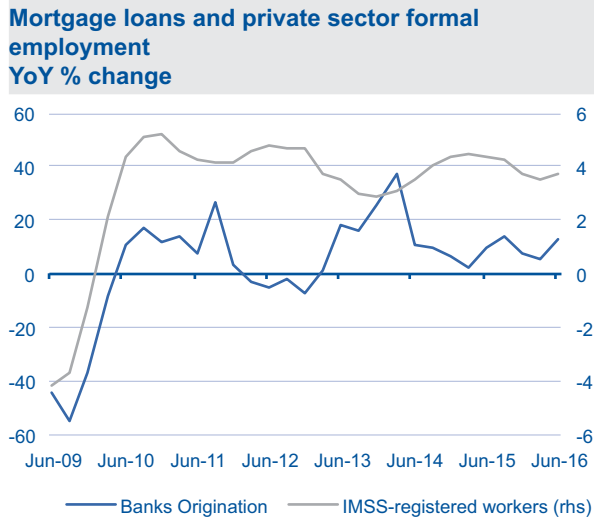
The series of reforms that Infonavit has experienced largely reflect the various stages in the mortgage lending market's path to maturity. However, as a public body, Infonavit was established in order to facilitate access by lower-income workers, which is increasingly difficult in financial terms. In changing the denomination of loans to pesos in 2014 while leaving most of the loans based on a multiple of the minimum wage in force, it ran the risk that its liabilities would grow more than its assets, leading to an overall imbalance (mismatch risk). This is because Infonavit has to assure a positive return on the Housing Sub-Account to members who do not use it to obtain a loan, which used to be covered by a positive real interest rate when the loans were based on a multiple of the minimum wage; but the change of denomination makes this task more difficult.

New housing continues to be the central focus of the National Housing Policy, in which subsidies for home purchase play a significant role, even though they have been reduced in the past few years. In the first half of this year Infonavit placed 4.455 billion pesos in subsidies, equivalent to 59% of the budget for this year. However, the 71,000 loans granted under this scheme represented only 38% of all loans in the period.

Bank mortgage lending will end 2016 having grown by more than the economy as a whole

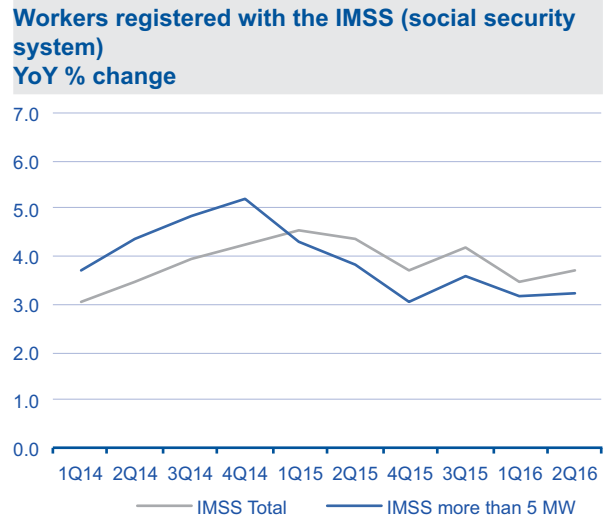
In 2016 the economy has faced several adjustments, both in expectations of economic growth and as regards a possible increase in mortgage lending rates in reaction to adjustments in monetary policy. However, the mortgage lending market has shown strength and continues to grow, albeit more slowly than in the past two years. In the first half of 2016 the amount of mortgage-based financing granted grew by 4.2% YoY in real terms. This includes both loans for the acquisition of new and used housing and loans for paying liabilities and to provide liquidity. Demand for loans for home purchases has kept some of last year's growth impetus, albeit at a slower pace, mainly due to the decline in formal job creation in the private sector. As we have long maintained, employment is the main determinant of effective demand, followed by access to mortgage credit. That is why we are still seeing positive growth, despite the slowdown in economic activity, since the effect of the employment created in previous periods and cheap mortgage credit is carried over.

Figure 2b.3



Source: BBVA Research based on data from INEGI and the CNBV

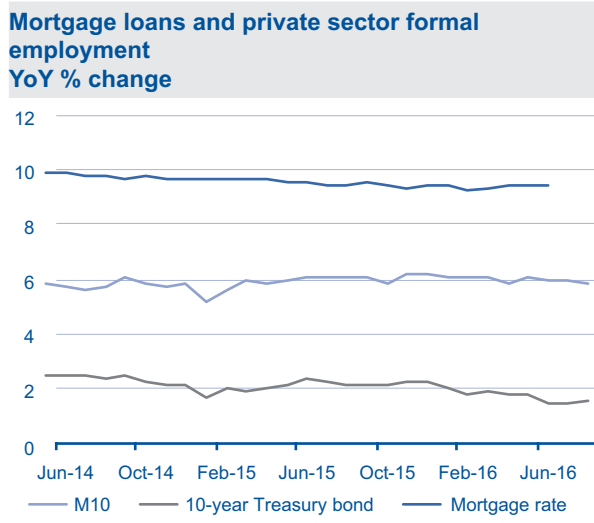
Figure 2b.4



Source: BBVA Research based on data from the IMSS

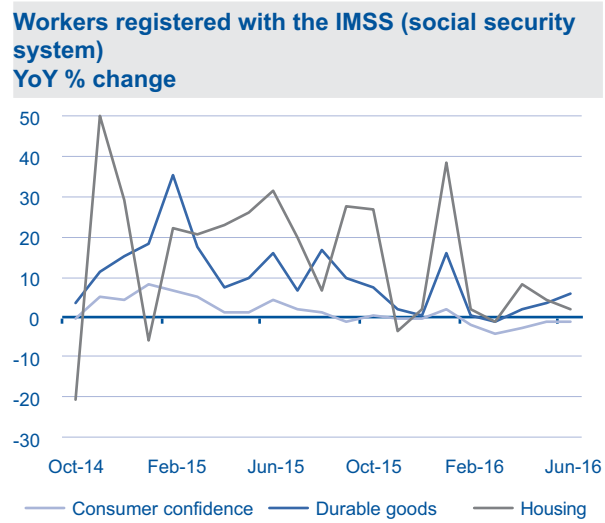
So far this year the number of workers registered with the IMSS has continued to grow at rates of around 4% YoY on average. However, registration of workers with five times the minimum wage or more has fallen below the total growth rate. The positive effect of this increase in employment will be seen from 2017 on, although trending downward. While employment will sustain demand, mortgage credit will also continue to be a significant factor. Commercial banks' mortgage lending rates have not been affected by the changes in monetary policy. We attribute this to two reasons: 1) the competition among banks for increased market share. 2) the fact that monetary policy has not had much effect on mortgage lending, which seems to depend more on long-term interest rates.¹ Complementing the indicators on the demand side, consumer confidence as regards the housing market has improved slightly during most of the year, but at a declining rate, and the latest figure has turned negative. As with employment, consumer confidence is an advance indicator, and we expect its impact to be reflected in 18 to 24 months' time. Nonetheless, it also points to more modest growth in the housing market.

Figure 2b.5



Source: BBVA Research based on data from Bank of Mexico and CNBV

Figure 2b.6



Source: BBVA Research based on data from the IMSS

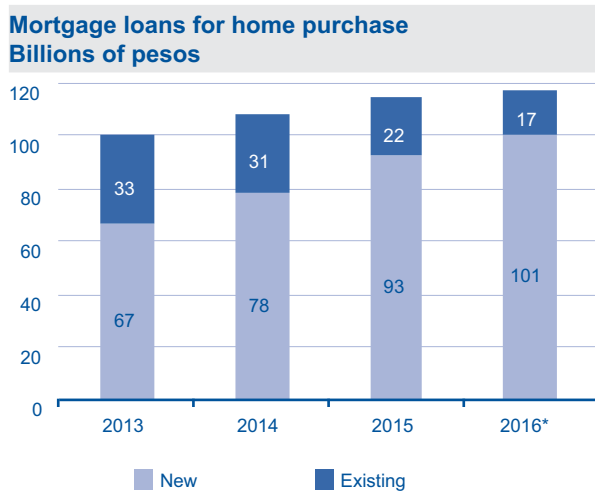
1: See "Transmission of monetary policy to the mortgage market" in *Mexico Real Estate Outlook* Second Half 2014, BBVA Research Mexico.

Banks' average mortgage lending rates remain below 10%

Despite these conditions, interest rates remain at historically low levels and will at most show an increase of 50 bps in reaction to Bank of Mexico's key rate hike. The stability of mortgage lending rates, which will barely reflect the change in monetary policy, is an indication that demand for financing will continue to grow, albeit it at a slower pace, for as long as employment

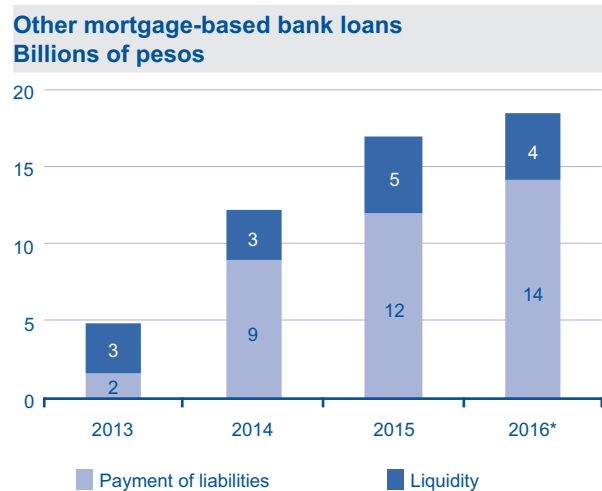
continues to grow. Also, the great variety of products and the intense competition among banks will continue to keep market rates at historically low levels, with continuing growth in loans for paying debts and providing liquidity, offering consumers financing alternatives on better conditions as regards rates and terms. Loans for new housing account for more than 85% of home purchase loans granted by banks nationwide.

Figure 2b.7



Source: Source: BBVA Research based on data from the CNBV (*Comisión Nacional Bancaria y de Valores*, Mexico's banking and securities regulator)

Figure 2b.8



Source: Source: BBVA Research based on data from the CNBV (*Comisión Nacional Bancaria y de Valores*, Mexico's banking and securities regulator)

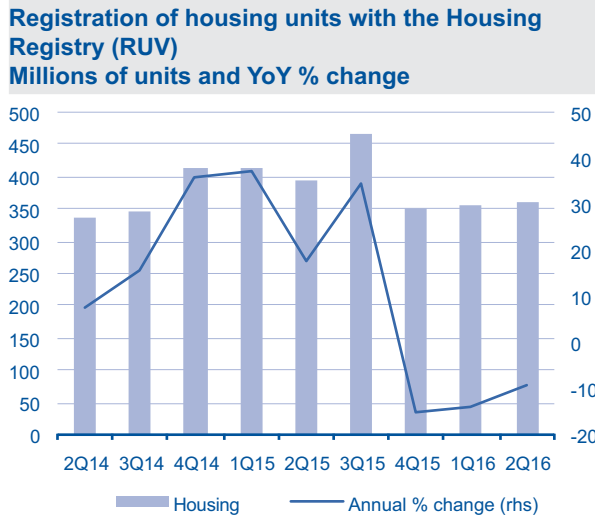
Housing construction adjusts due to reduced subsidies and demand

In 2015 we saw a recovery in the number of residential construction permits to more than 400,000 units, a level not seen for some years, but builders' expectations had improved as a result of the changes made by Infonavit to promote demand and bank lending. However, in the last quarter of 2015 and the first two of 2016 the number of projects registered and even the level of housing stock have fallen. We attribute this to an adjustment in builders' expected sales in line with the slowdown in demand, but also to the passing on of monetary policy to interest rates for construction.² Added to this, the expected and now confirmed cut in housing subsidies contributes to lower expected demand, especially in the social housing segment. These three factors make it very likely that residential building construction will remain on a downward trend.³

2: See "The lower benchmark interest rate could drive residential building" in *Mexico Real Estate Outlook* Second Half 2014, BBVA Research Mexico.

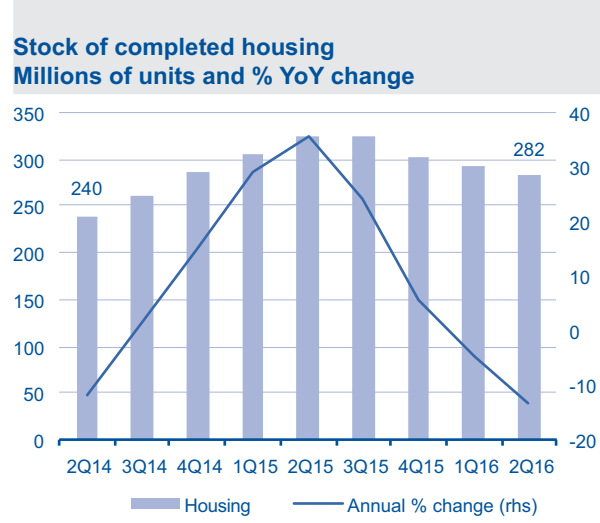
3: It should be borne in mind that the Housing Registry's agreement with the banks on incorporating their information on residential projects may lead to an increase in the number of registrations, but that this does not necessarily denote greater activity as opposed to the inclusion of information not previously taken into account.

Figure 2b.9



Source: BBVA Research based on data from the RUV

Figure 2b.10



Source: BBVA Research based on data from the RUV

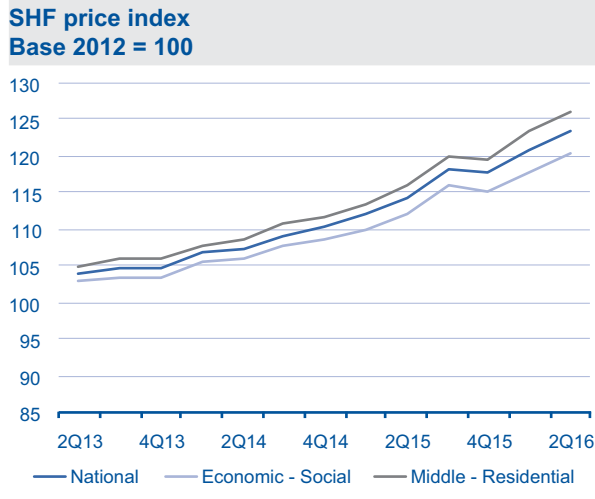
For the first half of 2016, the number of housing new-build projects registered was 15% down YoY on the first half of 2015. The stock of finished housing also fell by 13% in the same period, to 286,000 units. A stable housing stock is a sign that units ready to be lived in are being placed in the market, avoiding any build-up of stock and maintaining the rate of appreciation not only in the social housing segment but also in the middle and residential segments where demand has grown in the past few years, not only through the banks but also with the housing institutions as we have already pointed out.

Housing has appreciated by 8% on average

According to data from the Federal Mortgage Company, the housing price index rose by 8% in the first two quarters of the year. Prices in the middle and residential segments rose by close to 9% in the second quarter of 2016, while those in the social housing segment increased by 7.1%, both relative to the same quarter of 2015. Unlike the middle and residential segments, where demand runs ahead of supply, prices in the social housing segments tend to grow less due to greater supply, whether in areas with high levels of economic activity or due to announcements of the receipt of subsidies for home purchases in states such as Nuevo León, Jalisco, the State of Mexico and Guanajuato, among others. In the past few years around 90% of housing subsidies have been for the acquisition of new units, which directly induces demand in the regions receiving them. Another factor driving housing prices is the increase in prices of inputs for residential building construction, which have grown by more than 5% cumulative in the first six months of 2016. This exerts pressure on final housing prices.⁴

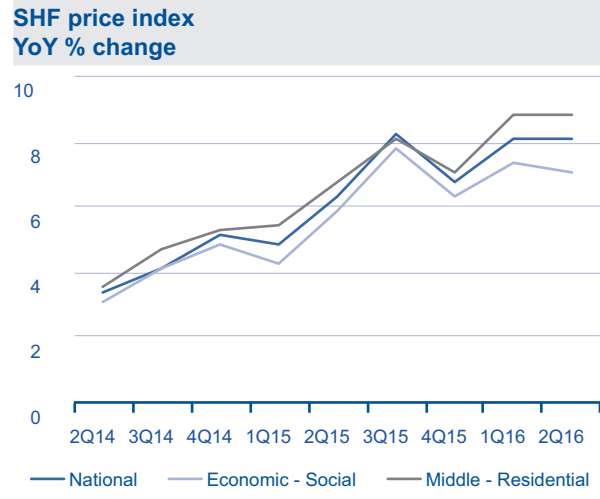
4: See "House prices rising due to increased costs" in this issue of *Mexico Real Estate Outlook* Second Half 2016, BBVA Research Mexico.

Figure 2b.11



Source: BBVA Research based on data from the SHF

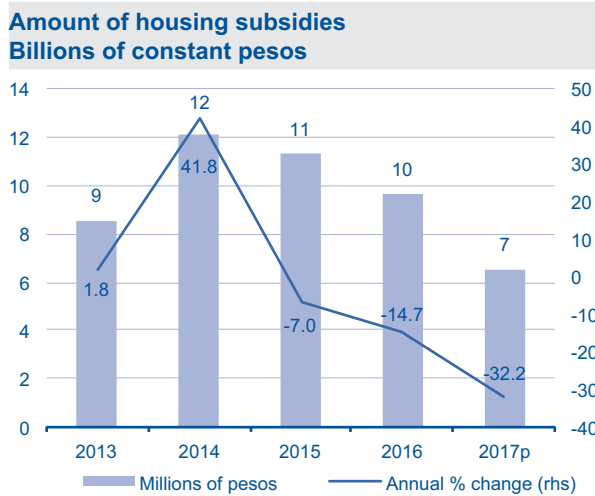
Figure 2b.12



Source: BBVA Research based on data from the SHF

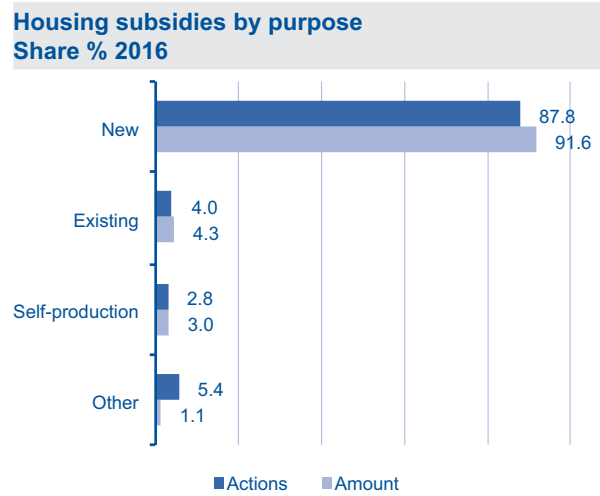
It is important to point out that while around one third of housing subsidies is concentrated in three states (Nuevo León, Jalisco and Quintana Roo), there are states with high levels of economic activity, such as Aguascalientes, Zacatecas, Guanajuato, Querétaro and Puebla, where employment is growing faster than in the country as a whole and therefore have less need of subsidies than other regions where DIY home building and purchase of used housing are more pressing because of the scarcity of land and the low level of economic activity. Therefore the reduced amount of subsidies expected for 2017 could be used less for buying new housing and redirected to other needs.

Figure 2b.13



P: preliminary, subject to approval by Congress
Source: BBVA Research based on data from CONAVI (Comisión Nacional de Vivienda or National Housing Agency) and the PEF for 2017

Figure 2b.14



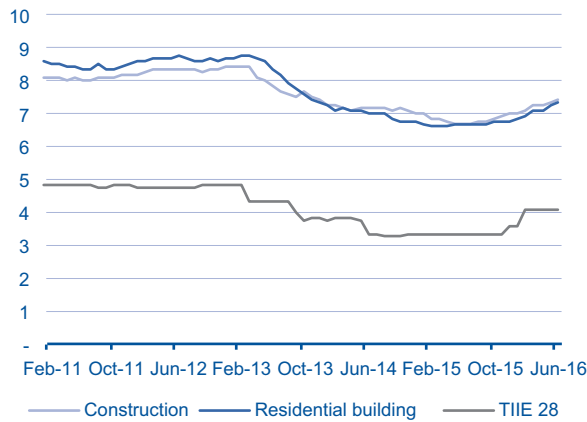
Source: BBVA Research based on data from CONAVI

As already mentioned, the change in monetary policy is in line with lower expectations for housing construction due to its effect on interest rates for construction. Unlike interest rates on mortgage loans, those for financing housing construction are directly related to the TIIE (Equilibrium Interbank Interest Rate). These loans are

usually granted on a floating rate basis, since they are for much shorter terms, with high levels of repayments and therefore more closely reflect the monetary policy decisions of Bank of Mexico.

Figure 2b.15

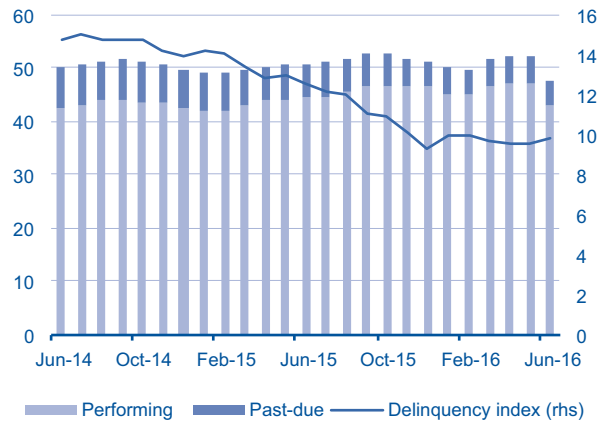
Interest rates on loans to the construction industry and TIIE
% 12-month moving average



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

Figure 2b.16

Balance of bridging finance
Billions of constant pesos and %



Source: Source: BBVA Research based on data from the CNBV

This also explains why at the end of the second quarter of this year the balance of bridging finance was showing a negative rate of growth for the first time. The faster growth of projects in 2015 was due not only to the high volume of subsidies but also to expectations that interest rates would continue to rise, encouraging construction companies to lock in their borrowing in advance. As a result, at the end of the second quarter of 2016 the balance of bridging finance was 3% down on the June 2015 figure. The balance of bridging finance ended up below 50 billion pesos and the NPL rate stabilised at just over 10%.

The mortgage lending market will continue to grow, but its growth will slow

Mortgage lending is starting to show signs of slowing, which will become more visible in 2017. Until now the combination of growth in employment and more favourable financing conditions in the market has been the driving force behind demand for housing. However, the slowdown in economic activity, which implies a slower pace of job creation, and the reduction in subsidies will make themselves felt next year.

The mortgage lending market will grow by more than the economy as a whole in 2016. The major challenge will be to maintain job creation in 2017, since so far there are no signs of further interest rate hikes, which is a key incentive for activating the demand of those needing and able to acquire a home.

On the supply side, stocks are stable, because construction now adjusts more efficiently to changes in demand and increases in interest rates. In 2017 it will also be essential to refocus efforts on redirecting subsidies to those that really need them, strengthening demand for other housing solutions where required. It will also be essential to ensure that the public institutions attend to the segments of the population for whom they were created, especially at the present point in the economic cycle.

3. Special topics

3.a Commercial building construction and its cycle of appreciation

In the last edition of *Mexico Real Estate Outlook* we commented on the importance of the commercial building construction component in the construction industry, accounting as it does for practically half the total value generated by construction companies and showing greater dynamism than residential construction during the last growth cycle. However, we did not go very deeply into its relationship with other productive activities or the price cycles of these properties.

Recent figures confirm that the economic slowdown is having an effect on the construction of industrial properties, shopping centres and other service facilities. However, this sub-sector of the industry has for several years been much more stable in both production and appreciation than the residential segment, and unlike the latter has also managed to keep growing.

In the current situation however it is important for us to establish the factors most affecting the production and value of these properties. In this article therefore we analyse the main determinants of supply and demand affecting the most recent commercial building construction price cycles.

The relationship between commercial building construction and the rest of the economy

In terms of the value generated by construction companies commercial building construction represents just over 50% of the total, even more than its residential counterpart, which has a share of 45%, both in annualised figures based on data from the National Survey of Construction Companies conducted by the INEGI every month. The sum of all the components of building construction accounts for just over 60% of construction GDP, so its performance tends to govern the growth of the sector, as has been the case so far this year.¹

Commercial building construction in particular has a broad range of links to other sectors. Approximately 80% of the value generated comes from other branches of the economy. Just over 20% of the value creation comes from specialised works for the construction industry, which is logical given the industry's close relations with the whole range of services.

Secondly, and more surprisingly, is the great demand from wholesale food and groceries trading activities, which account for approximately 12% of commercial building construction. In third place come the cement and concrete industries, with 11.6%; while petroleum- and coal-based products and manufacturing of metal products together contribute 12%.

1: See the article headed Situation in this issue.

Table 3a.1

**Contribution to demand for commercial building construction by type of economic activity
% share in the value of aggregate production**

Economic activity	Share %
Specialised works for the construction industry	20.4
Wholesale food and groceries trading	12.3
Manufacture of cement and concrete products	11.6
Manufacture of petroleum- and coal-based products	4.5
Manufacture of iron and steel products	3.8
Manufacture of metal structure and foundry products	3.6
Manufacture of clay- and refractory mineral-based products	3.4
Mining of non-metal minerals	3.2
Non-residential building construction	3.1
Employment services	3.1
Basic iron and steel industry	2.7
Manufacture of plastic products	2.6
Manufacturing of paints, coatings and adhesives	2.2
Own transport of general goods and supplies	2.0
Manufacture of other wood products	1.6
Manufacture of other electrical equipment and accessories	1.4

Source: BBVA Research based on information from the Input-Output Matrix. INEGI

More than 12% dependency on the wholesale trading segment

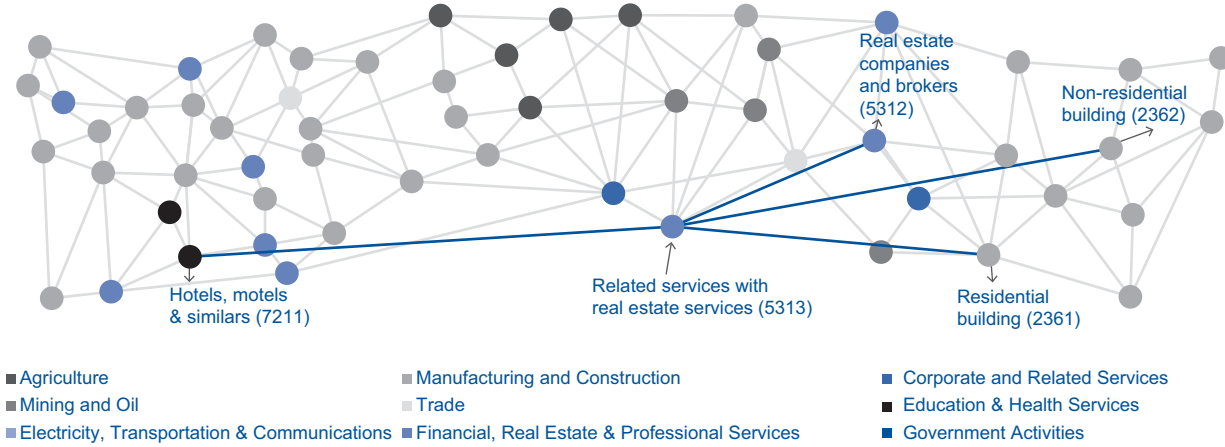
Although the manufacture of cement and concrete products is the biggest contributor to demand for commercial building construction among secondary activities, there are other types of economic activity with significant contributions, whether through the industry or through real estate services, linked directly to the construction of shopping centres.

Although not generating value within manufacturing industry, shopping centres have a directly relation with the value creation chain of commercial building construction.

While not among the top places in importance, real estate services, real estate agents, hotels, motels etc. together account for 0.44% of demand in the sector and might provide a more accurate reflection of the price cycle of commercial properties through their rental payments.

Table 3a.2

Dependency relations between commercial building construction and services



Source: BBVA Research based on data from the Atlas of Economic Complexity.

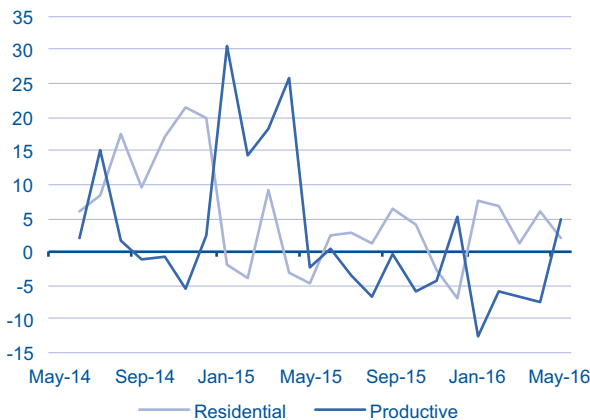
Price cycles of commercial building construction

In recent years the performance of commercial building construction has been positive, mainly since the crisis of 2009 and the subsequent crisis of the major housing developers that marked the change in the residential construction model on which we have commented in previous issues. Faced with this change in consumer preferences, we can safely say that some construction companies transferred their activities to commercial building construction.

This was basically for two reasons. First, the model of large housing developments, often sold in stages, far removed from city centres, gave way to a model encouraging construction in more central locations and with smaller developments. Secondly, the need to develop commercial and service activities in well established cities where the new housing policy encourages residential construction entered a prolonged growth cycle which is barely beginning to slow.

Figure 3a.1

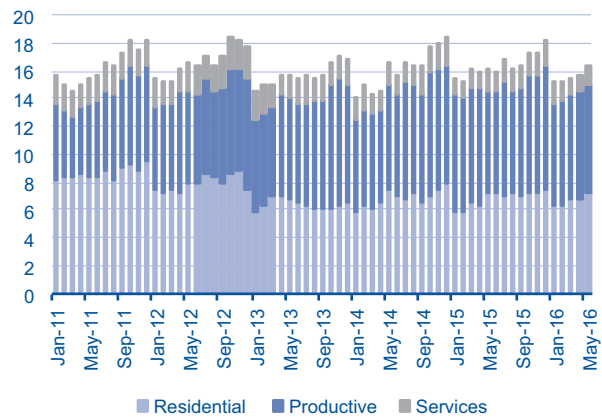
Value of construction companies' output YoY % change



Source: BBVA Research based on data from Infonavit

Figure 3a.2

Value of construction companies' output Billions of constant pesos



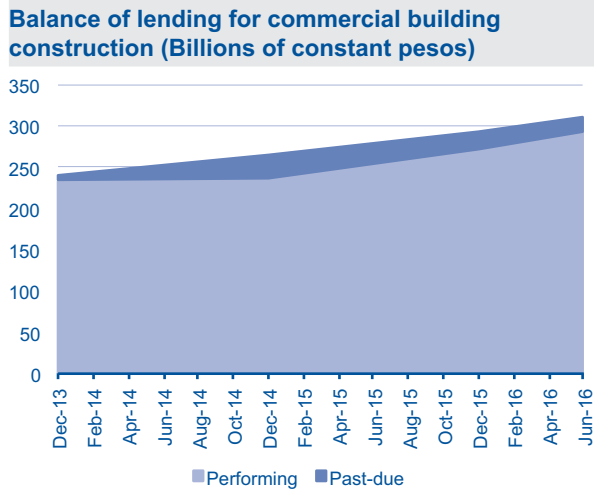
Source: BBVA Research based on data from Infonavit

Apart from this, the growth in foreign direct investment in certain regions of the country has required a large number of industrial plants and warehouses, whether to increase installed capacity or to house new companies,

mainly in the automotive sector. This has also boosted the output of companies dedicated to commercial and services building construction and its share in the total value, which now exceeds 50% according to the INEGI's Monthly Survey of Construction Companies.

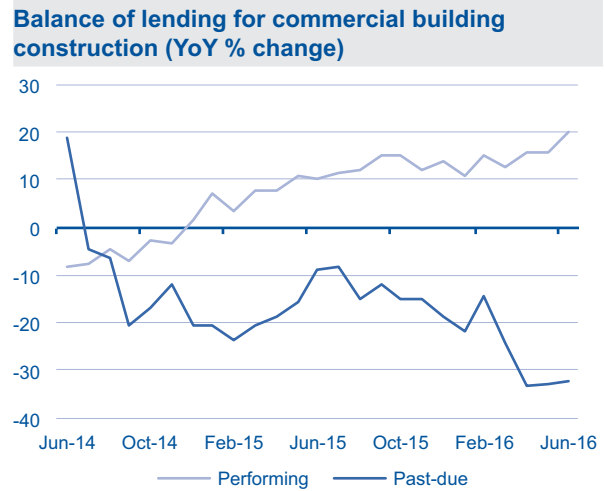
There was a striking temporary substitution effect between residential and commercial building construction between 2011 and 2013 when the shift to construction of properties such as industrial facilities, shopping centres and service facilities got under way. Subsequently, since 2014, growth has been more in line with the residential growth cycle, which picked up from that year thanks to increased allocation by the federal government of subsidies for the acquisition of new housing and to guarantees for the granting of loans for residential construction.

Figure 3a.3



Source: BBVA Research based on data from Bank of Mexico

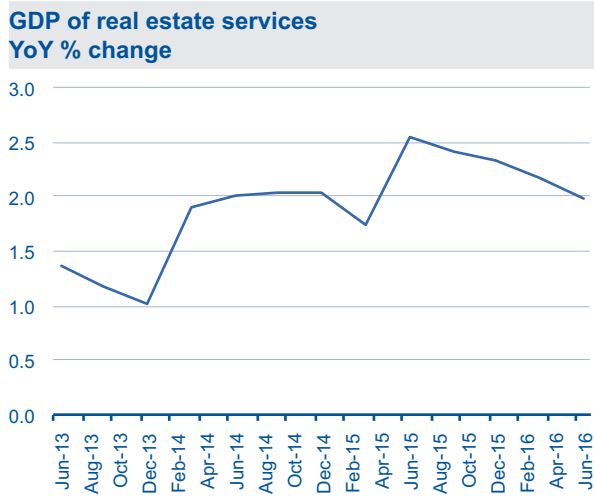
Figure 3a.4



Source: BBVA Research based on data from Bank of Mexico

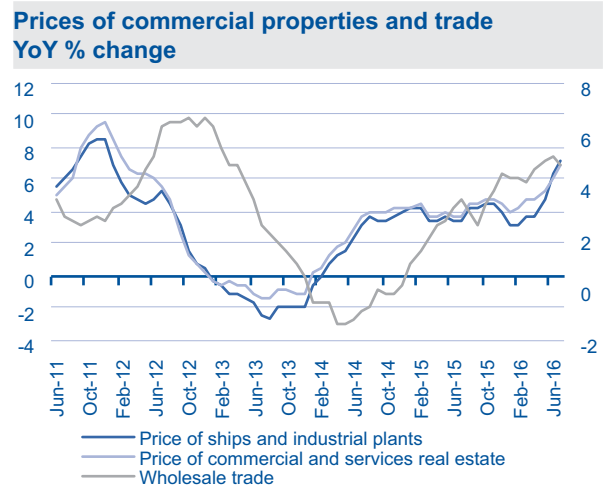
In line with the growth in production of commercial properties, demand for credit has grown steadily since 2013, as shown by outstandings. The fastest growth was seen in 2015, when loan balances increased by 14%, while the amount of overdue loans remained stable, and so far in 2016 it has even declined. Investment opportunities in this sub-sector have been notable in the past few years and might well remain so, albeit to a more moderate extent.

Figure 3a.5



Source: BBVA Research based on data from the INEGI

Figure 3a.6



Source: BBVA Research based on data from the INEGI

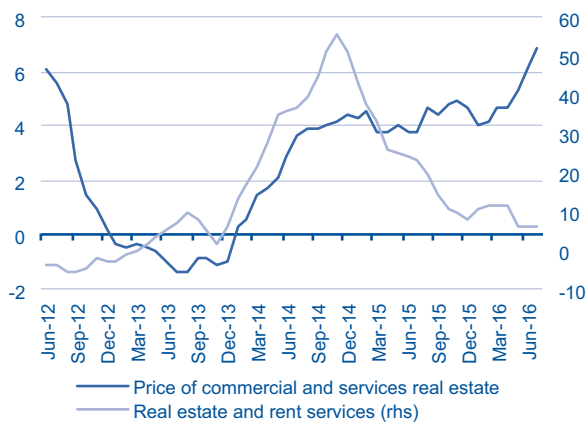
The reduced growth that we are expecting to continue will be reflected in two ways. Firstly, in a slowdown in the growth of real estate services GDP. Having reached the peak of its growth cycle in mid-2015, it has continued to grow, but at a more moderate rate. This slowdown in real estate GDP growth points to a possible need for less space, for example for offices. Secondly, if wholesale trading stabilises in the next few months due to slacker overall economic activity, this could visibly stabilise demand for commercial construction for next year. This could be reflected in a slowdown of rates of appreciation of such properties, since there will be less need to build more of them in cities and industrial estates.

According to the INEGI's Monthly Survey of Services, the rate of growth in spending on real estate services is slowing, after reaching rates of more than 50% during 2014. So far this year, on average it has grown by more than 8%, which is still more than the rate for the economy as a whole. Even so, this would lead to a slowdown in the appreciation of shopping centres and service facilities.

The peak in demand for real estate and rental services was reached in the latter part of 2014. Since then, growth has continued, but at a decreasing pace throughout 2015. In the first half of 2016, spending on this item grew by 6% YoY.

Figure 3a.7

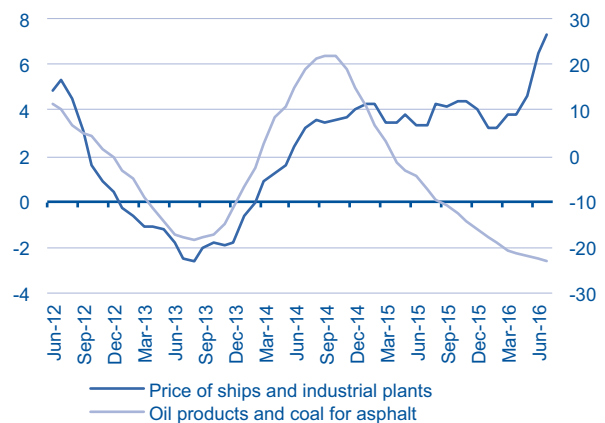
Prices of commercial properties and rental services (YoY % change)



Source: BBVA Research based on data from the INEGI

Figure 3a.8

Prices of commercial properties and asphalt products (YoY % change)



Source: BBVA Research based on data from the INEGI

Apart from this, the current dynamic of commercial building construction led to the production of petroleum- and coal-based products for paving ceasing to grow from as early as the third quarter of 2014 and starting to fall during 2015, due to the deterioration in trade terms. The most significant of these products are those used for asphalt, since they are used to make the access roads for the transport of goods to and from industrial facilities.

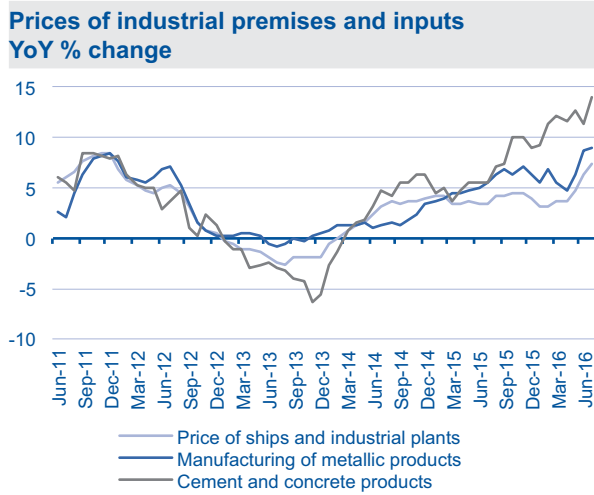
Industrial plants and warehouses continue to appreciate at more than 7%

It is important to note that the speed of increase in the value of these properties has continued to increase until now, in spite of a possible stabilisation in demand. This is because since 2013, the prices of the main inputs used in the production chain have increased, which in the short term exerts pressure on the final value of industrial properties. However, once lower demand is perceived in the market, which is already starting to

happen, consumption of inputs will fall and then the cycle of appreciation that has been sustained since 2014 will soon reach its peak.

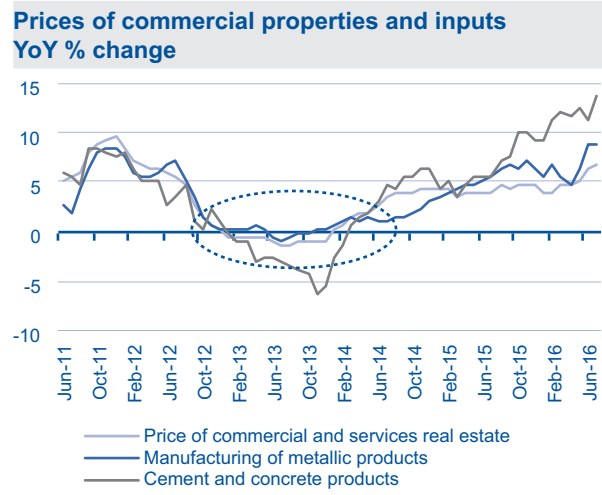
While there are great disparities among the price cycles of the main inputs for commercial building construction, as already mentioned in previous paragraphs, spending on rent and real estate services seems to bear more economic relation to the appreciation of properties used for commercial and services purposes. However, we cannot ignore the significance of the appreciation of cement and concrete products in the past few months, or of price increases via the basic metal industries.

Figure 3a.9



Source: BBVA Research based on data from the INEGI

Figure 3a.10



Source: BBVA Research based on data from the INEGI

If we compare the cycles of appreciation of the two types of properties, we see that between 2011 and 2013, the increases in prices of industrial plant and warehouses were practically in step with those in cement and metal products. It was not until the latter part of 2015 that we saw a widening gap, mainly due to the increase in cement prices.

As for commercial and services properties, prices seem to move more in line with the cycle of trade and services. During 2013, when the cycle of appreciation touched bottom, the cycle of trade and services was gentler than that of industrial premises, which posted negative rates for longer. Although conforming to the trend in other industries, trade and services may have more of a short-term effect than those of manufacturing. This might be explained by the anticipated slowdown in real estate GDP, which, as we have seen, started in mid-2015. It might also reflect a stabilisation in wholesale trading over the next few months.

In order to ascertain in greater detail the impact of supply and demand on prices of each type of commercial building construction, in the following section we carry out a sensitivity analysis by means of two uni-equation models.

Sensitivity analysis

In the foregoing sections, we commented on the correlation between the value of industrial properties and demand and the transmission of value from the cost generated in the main components of the chain. The services sector is highly correlated with the price cycles of commercial properties, where wholesale trading in food and groceries has played the most important part in recent years.

Apart from this, the price of cement and concrete, rents and the level of producer prices of the iron and steel industries are also determinants, although in differing degrees as between commercial properties used for trade and services on the one hand and industrial plants and warehouses on the other.

Table 3a.4

Price sensitivity of industrial properties*

Variable	Short term	Long term
Wholesale trade	0.29	0.47
Cost of cement and concrete products	0.10	0.37
Cost of basic metal industries	0.07	0.08

* Percentage change in value for each percentage point of change in the variable.

Source: BBVA Research. Own estimate based on INEGI data

Table 3a.4

Price sensitivity of shopping and service centres*

Variable	Short term	Long term
Wholesale trade	0.16	0.18
Cost of cement and concrete products	0.19	0.42
Rent of offices and commercial premises	0.27	0.48

* Percentage change in value for each percentage point of change in the variable.

Source: BBVA Research. Own estimate based on INEGI data

According to the sensitivity analysis carried out using one equation model for both types of properties, we find that the value generated by wholesale trading has a positive effect in both the short and long terms. In the case of the price of industrial plants and facilities, the long-term effect is 0.47% for each percentage point of increase in trading; while in the case of shopping centres the effect is 0.18%. On the other hand the transfer effect of the cost of cement and concrete products is very similar for both types of property, 0.37% and 0.42% for industrial properties and shopping and service facilities respectively.

Lastly, the price of inputs from the basic metal industries has similar positive effects in the short and long terms, of around 0.08% increase in the price of industrial plants and facilities for every percentage point increase in the price of metal. In the case of the price of shopping centres and service properties, in contrast, rents play a much more significant part, with a similar effect to that of the cost of cement and concrete products on these properties. This is because commercial activity depends largely on renting premises to recover the investment, whereas in the case of industrial properties the recovery of investment is slower since the properties are used for more complex productive activities, as is the case of the automotive industry and manufacturing.

Conclusions

Commercial building construction seems to be coming to the end of one of the longest growth cycles of the past decade. A transfer of residential builders into the market for the construction of industrial facilities and shopping and service centres led to sustained demand, underpinned by the increase in wholesale trading in food and other groceries. This has resulted in a share of more than 50% of the value of construction companies' building construction output, which has largely sustained the growth in construction GDP in recent years.

However, the demand factors that were sustaining the increase in the value of commercial building construction could be slowing, as can be seen in the main indicators for trade as well as in real estate services and rentals.

On the supply side, the price of cement and concrete products, as well as of several products in the metal industries is exerting short-term pressure for continued price increases. Construction of plant and industrial warehouses is starting to reflect these increases more sharply, while the cost of shopping and service centres, being more closely linked to real estate services, might reflect the contraction in demand sooner.

All in all, commercial building construction has proven to be an alternative for investment and growth to offset the reduced scale of housing output, where the need to restore density in urban areas has required commercial property to play a more active role.

3.b Rising house prices due to increased costs

In previous issues of *Mexico Real Estate Outlook*, we have analysed the determinants of housing prices in Mexico, from a macroeconomic perspective, in order to ascertain the main factors affecting supply and demand. Subsequently, at regional level, to establish groupings of municipalities with similar price levels as a function of certain significant economic characteristics.

On this occasion, we make an approximation in order to study the margin between the market value and construction value of residential properties, both according to the national appraisal database of the SHF (the Federal Mortgage Company). This will allow us to find out in which states house prices have grown due to demand outstripping supply, given that the area of land available for building is fixed and in some cities has become a scarce resource. However, in other institutions there might be cases in which market values are growing due to insufficient supply relative to demand and/or greater concentration of subsidies for the acquisition of new housing.

We also found that construction costs have played an increasingly significant part in recent price cycles. Therefore in this section we make a regional comparison to find the effect of some of these factors on the market value of housing during the past few years.

A regional perspective on housing prices margins

The National Appraisals Database, used to construct the SHF housing price index, enables us to ascertain the commercial value of each transaction, at unit level, but also by built square metre. With this information, we can identify the parts of the country where the difference between the market price and the cost of construction, according to each appraisal, is significantly greater than the state average.¹

Once we have identified the gap between the two values, it is possible to associate the behaviours with local indicators, among which are the possible competition indicated by the degree of concentration of supply,² and the availability of subsidies for the states with the greatest relative weight, since this could lead to a greater profit margin ahead of effective demand. On the other hand, residential construction costs could be manifested at local level, although there could be exceptions to this behaviour.

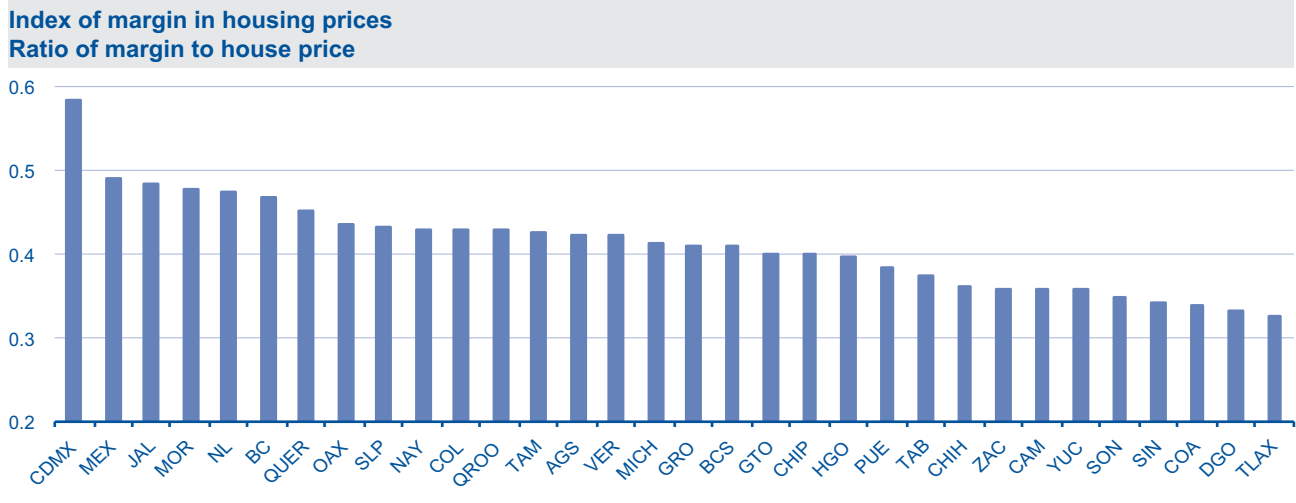
At state level, housing characteristics may show some disparity due to the consumer profile and the type of product demanded, such as the number of bedrooms, parking spaces etc. This disparity is also due to conditions available for supply. For example, in the case of Mexico City there is greater demand for high-rise housing than in other parts of the country due to the shortage of land for building. On the other hand in other parts of the country where there is more land available, it is possible to expand urban areas with low-rise housing, although the current tendency is to build in areas with the necessary public infrastructure, where subsidies for the acquisition of new housing have been a key factor in stimulating construction in some states.

1: The market value of housing is stipulated in the notarised appraisal.

2: The degree of concentration is not an adequate indicator of the level of competition, but it is the only one systematically available, and is used as an approximation.

This would also determine differences in the size of margins observed among different parts of the country, depending on demand and the type of housing sold. If we obtain the difference between the selling price and the cost of construction according to the national appraisal database for all transactions nationwide, we find that the state with the biggest margin from 2013 to 2015 is Mexico City, despite the cost of land, since this is where demand is greatest and incomes highest. In second place we find the states with the biggest cities and the highest levels of economic activity: Nuevo León, Jalisco, the State of Mexico, Morelos, Querétaro and Quintana Roo

Figure 3b.1



Source: BBVA Research with data from the National Appraisals Database

Precisely because of this disparity among states it is necessary to analyse the differences in margins and other characteristics in greater detail. Due to the fact that there are also marked differences in the types of construction and in view of the complexity of incorporating the particular characteristics into a model, we standardise the margins to be analysed through the value per square metre of construction. As regards the differences between the selling price per square metre and the cost of construction, we observe greater uniformity among all the states. However, Mexico City, Jalisco, Nuevo León, the State of Mexico, Morelos, Querétaro and Quintana Roo continue to stand out.

That said, taking account in the first instance of the price margin based on values per square metre could be introducing a bias in the analysis, since as we have commented on previously, the highest prices will logically be oriented towards the states with the biggest cities. All the same, it is interesting to see that, with the exception of Mexico City, which maintains extraordinary conditions of demand for high-rise housing and in middle and residential segments mainly, the State of Mexico and Morelos and Querétaro states retain price margins in excess of 4,000 pesos. For this reason we standardise once again by constructing an index of price margins as the ratio of this difference to the price itself.

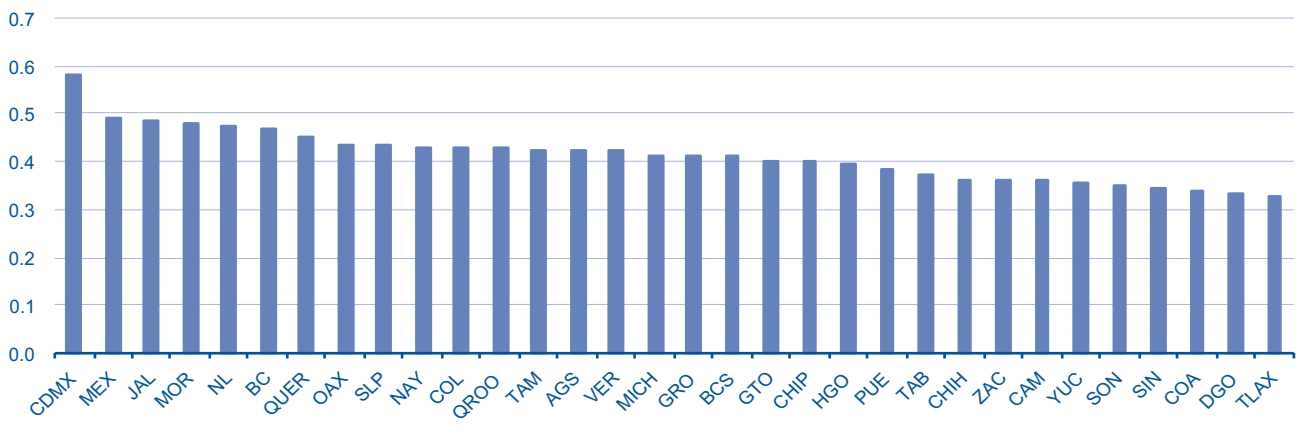
The cities with the highest margin indices are reflecting the economic attraction of Mexico City; when combined with the greater metropolitan area these cities show sustained increases in demand for housing, mainly in the middle and residential segments. The states of Jalisco, Nuevo León and Quintana Roo showed a notable increase in margin in 2014, when the amount of subsidies for home purchases peaked. These states have concentrated just under one third of total subsidies budgeted at national level.

Due to the disparity referred to among states, we then performed a comparative static exercise, calculating the margin index. This is the relationship between the difference between price and cost and the selling price of housing according to the information in the appraisal database. With this parameter, the differences among the margins, which could be biased by the characteristics of the buildings and their locations, are more clearly standardised.

The results of this index confirm a marked tendency. As regards the differences between sale price per square metre and cost of construction, we observe greater stability among all states. However, Mexico City, Jalisco, Nuevo León, the State of Mexico, Morelos, Querétaro and Quintana Roo continue to stand out, with indices close to 50%. Other states such as Aguascalientes, San Luis Potosí, Baja California and Baja California Sur also have indices of close to 50%. These are states that have seen significant growth in demand for housing due to their economies having grown by more than the national level and/or because they constitute markets mainly for high-value segments with the market largely aimed at purchases by foreigners.

Figure 3b.2

Index of the margin of housing prices per square metre
Ratio of margin to house price



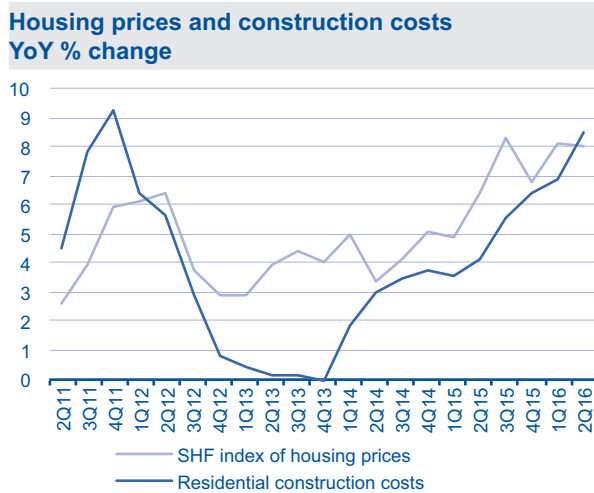
Source: BBVA Research with data from the National Appraisals Database

Price margins and the cycle of construction costs

New housing prices in particular are mainly determined by production costs, in this case by the costs of construction inputs. Although the relation between these costs and housing prices has been maintained over the long term, since 2015 and so far in 2016, prices of machinery and equipment, as well as materials, have increased substantially, which seems to explain the recently observed increase in the rate of appreciation of housing. In particular, the cost of cement and cement products has had one of the greatest impacts. We monitor costs to the construction industry by means of the INEGI's National Produce Price Index (INPP) and its construction materials component.

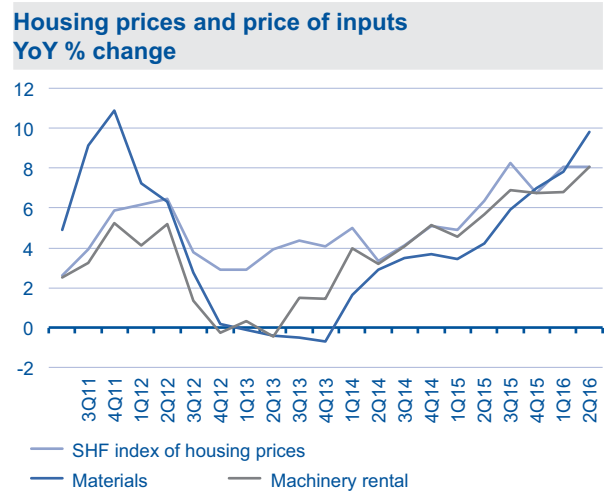
The SHF's housing price index has reflected this correlation with residential construction costs more sharply. This can be most easily seen in the short term, as in the current environment of reduced economic activity, housing prices have increased substantially, by as much as 8% on an annual basis (the biggest rise in this decade). This seems to be underpinning a similar increase in the INPP for residential building construction. We can see that the inflation of certain materials even exceeds the rate of appreciation of housing.

Figure 3b.3



Source: BBVA Research based on data from SHF and INEGI

Figure 3b.4



Source: BBVA Research based on data from SHF and INEGI

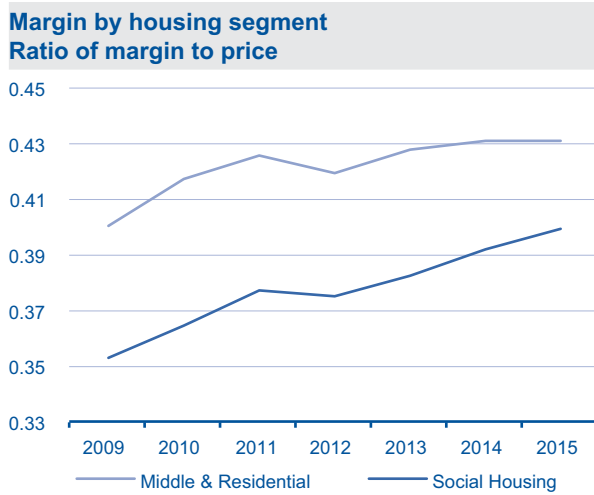
The annual growth rate of the SHF's price index for the first two quarters of the year was 8.1% on average compared to the same period in 2015. In step with this, the INPP for residential construction increased by 7.7% over the same period. This would seem to confirm that, at a national level, the increase in housing prices has had to cover the increase in the cost of materials, which has not exceeded the rate of increase in housing since 2011. Between 2012 and 2015, costs were mainly transmitted to house prices through equipment leasing, although this has now been surpassed.

As in 2011, when the value of materials increased by more than housing prices, the decline in demand, which was already evident due to the change in the construction model, preceded the slowdown in the increase in value of inputs, and this situation could be repeated given the lower growth expectations in the mortgage market.³ In an environment in which costs are exerting greater pressure on housing prices, one might logically suppose that margins would tend to contract. Conversely, if they did not contract, it would be due to supply factors providing incentives for market prices to continue increasing, at least in some regions of the country.

Higher margins in middle-residential segments

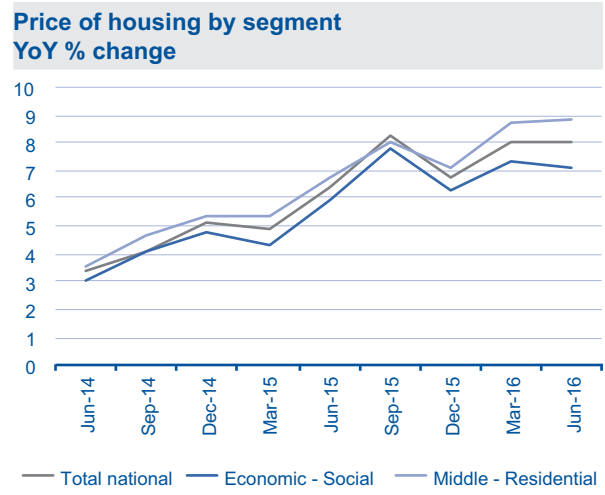
It could be that costs are not the whole reason for the appreciation in the various segments of the housing market. Since 2014, middle and residential housing has shown stronger growth than the social housing segment thanks to improved public and private sector credit conditions. This has stimulated demand, which could be driving the pace of appreciation in these two segments. This is confirmed when we see that the index margin for both types of housing went from 0.39 in 2009 to 0.43 in 2015 at which level it seems to be stabilising. This would suggest that from 2016 the increase in prices is due to costs. As regards the social housing segment, the margin went from 0.35 to 0.39 in the same period. Between 2013 and 2015, the gap tended to close, due to the increase in value of social housing. This is moving ever closer to that of the middle segments, as is also indicated by the SHF's housing price index by segment.

Figure 3b.5



Source: BBVA Research with data from the National Appraisals Database

Figure 3b.6



Source: BBVA Research based on data from the SHF

However, if we analyse the results of the index from state to state, the divergences are accentuated. In Table 3b. 1, we see that the margin has increased by more in the states with the highest levels of economic activity, or that have received most by way of subsidies.

3: See article headed Situation.

More economy, more demand, more margin

We have established that profitability has increased across the board, but more markedly so in the middle and residential segments. This could be determined not just by the increase in construction costs locally, but also by a limited number of construction companies in some states, which might indicate less supply relative to demand in specific cases, or by an upward trend brought on by the granting of subsidies.

Table 3b.1

Margin index by segment for selected states Ratio of margin to house price

State	Social housing			Middle and residential		
	2012	2014	2015	2012	2014	2015
Aguascalientes	0.41	0.42	0.42	0.41	0.45	0.42
Baja California	0.44	0.45	0.46	0.46	0.48	0.48
Mexico City	0.53	0.55	0.57	0.55	0.57	0.59
Durango	0.32	0.33	0.33	0.33	0.34	0.34
Jalisco	0.43	0.44	0.45	0.49	0.50	0.51
State of Mexico	0.43	0.45	0.47	0.47	0.50	0.51
Morelos	0.39	0.44	0.45	0.47	0.48	0.49
Nuevo León	0.44	0.45	0.45	0.47	0.50	0.49
Quintana Roo	0.36	0.38	0.40	0.47	0.47	0.45
San Luis Potosí	0.37	0.39	0.42	0.47	0.47	0.47
Yucatán	0.28	0.31	0.32	0.44	0.42	0.44

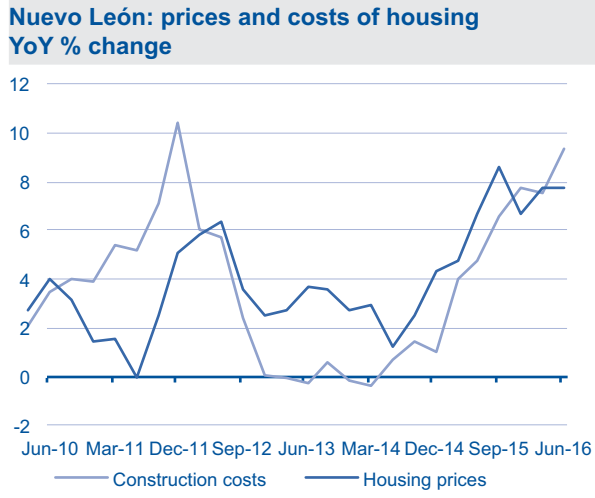
Source: BBVA Research with data from the National Appraisals Database

Subsidies might be affecting prices, as shown by the increase in margins of the cities most in line for this type of assistance. For example, in the last three years, around one third of all subsidies have gone to the states of Nuevo León, Jalisco, the State of Mexico and Quintana Roo, mostly for the acquisition of new housing. On the other hand, some northern and Bajío (lowlands) states with rates of economic growth in excess of those of the nation as a whole, such as Aguascalientes, Baja California, Durango and San Luis Potosí, have required new housing to be built. Finally, other states such as Yucatán and Morelos have seen bigger increases in the social housing index and greater stability in the middle and residential segments.

Given that there are different circumstances leading to increases in the margin index of the various regions, we concentrate on the representative sample of Table 4.1 to classify in general terms the main causes that might determine the behaviour of margins in the past few years.

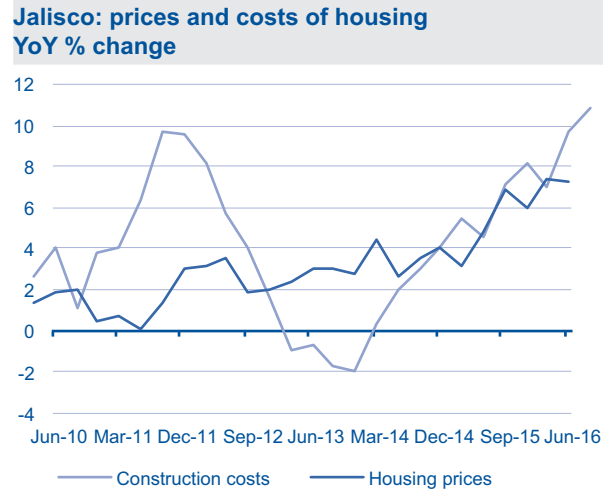
If we consider in particular the cases of Nuevo León, Jalisco, the State of Mexico and Quintana Roo, being the states receiving most in subsidies, we find that in the first two, which we know have concentrated around 20% of the support for home purchases at national level, construction costs have increased by less than the state average.

Figure 3b.7



Source: BBVA Research based on data from SHF and INEGI

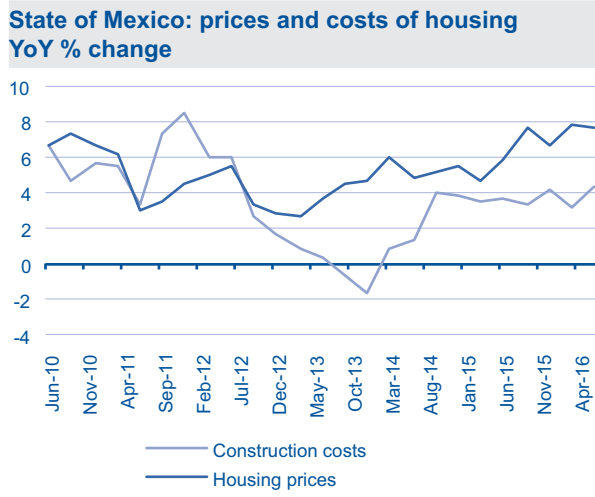
Figure 3b.8



Source: BBVA Research based on data from SHF and INEGI

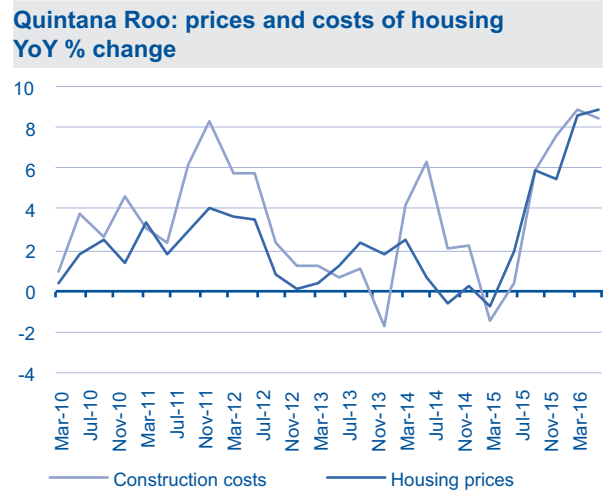
Apart from this, in the State of Mexico the gap between price margins is much narrower than in the states in the sample. Since 2013, construction costs have increased much more slowly than housing prices. As regards Quintana Roo, the gap prevailed between 2010 and 2014, although since 2015 the appreciation of housing in that state has been more closely aligned with the price of inputs.

Figure 3b.9



Source: BBVA Research based on data from SHF and INEGI

Figure 3b.10



Source: BBVA Research based on data from SHF and INEGI

Effects of producer prices, concentration and subsidies

We have seen in preceding sections how the margin index of housing prices is higher in some states than in others, which could be caused by an increase in construction costs. However, another factor that might be affecting the level of housing prices is the degree of competition among developers in the various cities. As is to be expected, the more residential developments or available housing, the more prices are pushed downwards, and vice-versa. Given that this is not a study of competition, we take as our indicator of the level of concentration only the number of suppliers operating in each state.

We also consider the influence that subsidies might have on the level of housing prices. Since housing is a necessary good for households, demand for it tends to be inelastic to price, in other words in relative terms it is less sensitive to changes in price. For this reason, the cities most likely to receive subsidies might reflect bigger margins in the social housing segment,

which is why in this section we estimate a panel data model for the sample of states for which we calculated the concentration index. Two conditions are met: First, their index is higher than in other states, which might be explained by the industry's being more concentrated and/or greater subsidies, and second, there is an increase in construction costs.

In order to analyse the effect of costs on housing prices, we estimate the margin index of prices by reference to costs, concentration and subsidies. The results are presented hereunder:

Table 3b.2

Sensitivity of price margins	
Variable	Percentage points
Construction costs	0.29
Concentration index	0.09
Subsidies	0.02

Note: * Percentage change in value for each percentage point of change in the variable.

Source: BBVA Research

Input costs explain the high rate of appreciation, but are not the only factor

According to the results of the model, the effect of construction costs on margins in housing prices is nearly a third for each percentage point. However, we also confirmed for our sample of states that the concentration of the industry and the amount of subsidies also have positive effects. This confirms that in the states with indices in excess of 50%, we would expect a positive effect of a 1% increase in housing price margins for each percentage point of increase in concentration.

Thus the appreciable growth in housing prices this year is due practically to the increase in the cost of inputs. Furthermore, in some states and segments in particular, the appreciation has been further contributed to by insufficient variety in supply relative to demand, and by subsidies.

4. Statistical appendix

Table 4.1

Annual macroeconomic indicators										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016p
Real GDP¹ (annual % change)	3.1	1.2	-4.5	5.1	4.0	3.8	1.6	2.2	2.5	1.8
Private consumption, real (annual % change)	3.0	1.7	-6.3	5.7	4.8	4.7	2.5	1.8	3.1	1.9
Government consumption, real (annual % change)	2.4	3.2	2.3	1.6	2.5	3.3	1.3	2.1	2.4	0.8
Investment in construction, real (annual % change)	5.1	6.2	-5.7	-0.2	3.0	2.0	-4.5	1.4	0.9	
Residential	4.0	2.4	-11.6	-0.6	4.1	1.4	-4.9	3.1	2.9	
Non-residential	6.1	9.6	-0.7	0.1	2.3	2.5	-4.1	0.0	-0.7	
Formal private employment (IMSS) ² , total	14,145	14,436	13,994	14,524	15,154	15,856	16,409	16,991	17,724	
Annual % change	4.2	2.1	-3.1	3.8	4.3	4.6	3.5	3.5	4.3	
Avg. salary of cont. (IMSS, nominal pesos per day, avg.)	217.7	229.6	240.0	248.7	260.1	270.8	281.5	294.1	306.4	
Real annual % change	110.1	0.3	-0.7	-0.5	1.1	0.0	0.1	0.4	1.4	
Real total wages (IMSS, annual % change)	118.9	2.4	-3.7	2.3	6.1	5.0	3.6	4.0	5.8	
Minimum general salary (daily, nominal pesos)	48.9	50.8	53.2	55.8	58.1	60.5	63.1	65.6	69.2	
Real annual % change	7.8	-1.3	-0.4	0.6	1.0	-0.1	0.4	-0.1	0.2	
Consumer prices (end of period, annual % change)	3.8	6.5	3.6	4.4	3.8	3.6	4.0	4.1	2.1	
TIIE 28 average (%)	7.7	8.1	6.7	4.9	4.8	4.8	4.3	3.5	3.3	
10-year interest rate, 10 year Govt bond (M10)	7.8	8.3	8.0	6.9	6.8	5.7	5.7	6.0	5.9	

1: Seasonally adjusted series.

2: Thousands of people

Source: BBVA Bancomer with Bank of Mexico, Conasami, Inegi & IMSS data.

Table 4.2

Annual construction and housing indicators										
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016p
Real GDP (annual % change)	4.7	3.8	-6.1	-0.5	4.1	2.5	-4.8	2.0	2.6	1.0
Building	3.5	2.0	-11.1	-0.4	4.3	2.7	-5.2	2.5	3.2	2.2
Civil engineering and major works	11.2	20.0	6.7	3.6	2.9	1.0	-4.7	-2.2	0.2	-4.6
Specialized construction work	2.8	-12.4	4.8	1.9	5.6	4.3	-2.5	8.6	3.5	3.8
Construction employ. (IMSS, thousands people, avg.)	1,203.8	1,209.5	1,103.6	1,145.5	1,199.5	1,275.2	1,289.8	1,383.5	1,504.0	
Annual % change	6.3	0.5	-8.8	3.8	4.7	6.3	1.1	7.3	8.7	
Hydraulic cement prod. (tons, ann. % change)	0.9	-2.8	-3.1	-2.9	1.5	2.1	-5.9	5.1	7.4	
Nat'l. cement consumption (tons, ann. % chge.)	0.0	-3.7	-6.1	-5.3	1.4	2.5	-6.0	4.9	7.4	
Construc. comp.¹ (real prod. value, ann. % chge.)	2.2	-2.2	-8.6	3.3	3.2	3.4	-3.7	-0.1	0.1	
Building	6.5	-2.3	-18.6	-5.3	6.3	2.0	-5.6	2.7	1.6	
Public works	-2.1	-1.5	8.0	9.8	0.3	0.5	-4.4	-3.1	0.2	
Water, irrigation and sanitation	-23.4	4.3	4.9	3.7	10.5	1.9	-6.0	-7.4	-7.0	
Electricity and communications	-12.6	15.4	8.2	27.0	21.4	-6.8	-2.2	-10.5	9.1	
Transportation	6.6	6.3	9.5	8.0	-2.8	-2.7	-7.8	2.6	-4.0	
Oil and petrochemicals	-4.2	-24.3	5.3	9.5	-7.7	14.7	3.6	-9.9	9.5	
Other	-3.2	-6.0	-31.5	21.5	6.2	36.4	10.6	2.2	-6.7	
Resid. construc. prices, general (ann. % change)	2.9	13.1	-1.0	4.8	9.3	0.4	-0.7	6.5	2.3	
Construction materials (annual % change)	2.6	15.5	-1.8	5.2	10.6	-0.2	-1.4	4.5	4.5	
Labor (annual % change)	4.4	3.5	3.1	3.3	3.8	3.2	2.9	3.5	4.2	
Equipment rental (annual % change)	2.9	6.9	1.8	3.2	5.3	-0.2	1.4	4.1	7.8	

1: Considers companies affiliated and not affiliated to the Mexican Chamber of the Construction Industry.

Source: BBVA Bancomer with Bank of Mexico, Conasami, Inegi, IMSS, Infonavit and Fovissste data

Table 4.3

Annual housing credit indicators											
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016*
Number of loans granted (thousands)											
Total	670.8	725.7	746.5	632.8	637.7	599.3	607.0	583.7	609.2	599.2	279.5
Infonavit	421.7	458.7	494.1	447.5	475.0	445.5	421.9	380.6	387.0	393.0	181.6
Fovissste	76.6	68.4	90.1	100.1	87.8	75.2	64.3	65.9	63.1	64.4	33.1
Commercial banks and others	172.5	198.6	162.3	85.2	74.9	78.6	120.7	137.1	159.0	141.8	64.8
Reduction ¹	73.7	79.2	80.8	39.4	18.6	23.4	45.4	58.7	82.2	56.7	23.4
Individual credits	597.1	646.5	665.6	593.4	619.0	575.9	561.6	525.0	527.0	542.5	256.1
Financing flow (billion pesos, June 2016 prices)											
Total	138.0	166.4	196.9	172.7	178.1	286.7	279.8	279.3	306.7	314.8	146.7
Infonavit	64.3	142.6	144.0	145.3	150.0	153.4	134.5	117.2	124.5	126.9	56.6
Fovissste	17.7	31.2	39.5	66.3	57.1	44.2	40.0	40.0	43.3	42.2	20.7
Commercial Banks and others	56.0	128.4	106.7	80.5	76.9	89.2	105.2	122.0	138.9	145.6	69.4
Commercial banks current loan portfolio											
Balance end of period (billion pesos, June 2016 prices)	235.2	267.9	286.9	287.0	332.7	370.4	415.9	445.7	503.9	581.2	616.5
Past-due loans index (%)	2.0	2.5	3.2	4.4	3.4	3.2	3.1	3.5	3.3	2.8	2.8

1: 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.

* As of second quarter

Source: BBVA Bancomer with Bank of Mexico, ABM & CNBV data

Table 4.4

SHF Quarterly Housing Price Index by state (annual % change)														
	13'I	II	III	IV	14'I	II	III	IV	15'I	II	III	IV	16'I	II
National	2.9	3.9	4.4	4.1	5.0	3.4	4.1	5.1	4.9	6.4	8.3	6.7	8.1	8.0
Aguascalientes	2.2	3.3	4.9	5.0	6.4	5.2	5.4	6.7	5.8	7.1	9.0	6.9	8.3	7.5
Baja California	2.1	3.2	4.0	3.3	4.2	2.7	3.5	4.2	4.0	5.1	7.0	5.8	7.2	7.4
Baja California Sur	4.8	5.1	4.6	3.1	2.7	0.8	1.3	2.4	2.8	4.3	6.8	5.9	8.8	10.3
Campeche	5.7	6.2	6.0	4.9	4.4	2.4	3.3	4.7	5.3	6.7	8.6	6.8	8.9	9.7
Coahuila	3.6	4.4	4.4	3.9	4.8	2.9	3.8	4.7	4.5	6.4	8.4	6.8	8.2	7.9
Colima	3.1	4.5	5.1	4.5	4.2	1.9	2.4	3.9	4.3	6.3	8.3	6.3	7.3	7.4
Chiapas	3.7	4.5	4.9	4.3	4.8	3.3	4.5	5.5	5.5	6.7	8.4	6.8	8.0	8.0
Chihuahua	2.7	3.7	4.1	3.9	5.1	3.5	4.2	5.0	4.5	6.0	7.8	6.1	7.5	7.4
Mexico City	5.3	6.6	7.2	7.0	8.2	6.8	7.8	9.2	9.0	9.3	10.2	7.9	9.0	9.4
Durango	2.0	3.6	4.7	5.4	7.1	5.6	7.0	8.1	7.8	9.1	10.4	7.9	8.6	7.7
Guanajuato	3.0	3.9	3.9	3.4	3.6	1.9	3.0	4.3	4.8	6.5	8.3	6.3	7.4	7.5
Guerrero	2.9	4.0	4.7	4.9	6.3	5.1	5.3	5.2	4.2	5.0	6.9	6.2	8.3	8.8
Hidalgo	1.4	2.8	3.3	3.3	3.9	1.5	2.3	3.7	4.6	7.5	10.2	8.0	8.2	6.9
Jalisco	2.3	3.0	3.1	2.8	4.5	2.7	3.5	4.0	3.1	4.8	6.8	6.0	7.4	7.3
México	2.7	3.8	4.6	4.7	6.1	4.8	5.2	5.4	4.7	5.8	7.7	6.6	7.8	7.7
Michoacán	2.5	4.0	4.5	4.3	4.4	2.1	2.9	4.1	4.7	6.9	9.1	7.2	9.0	8.7
Morelos	2.1	3.8	5.1	5.0	5.8	3.9	3.6	3.7	3.4	4.8	7.3	6.7	8.7	9.1
Nayarit	2.6	3.1	2.6	1.1	1.1	-0.8	-0.2	1.5	2.1	4.5	7.2	6.0	7.6	8.2
Nuevo León	2.8	3.7	3.6	2.7	3.0	1.2	2.6	4.3	4.7	6.7	8.6	6.7	7.8	7.7
Oaxaca	2.3	4.4	5.8	5.6	6.0	3.9	4.4	5.5	5.6	7.0	9.1	7.4	8.5	8.2
Puebla	2.3	4.3	5.7	5.0	5.9	3.9	4.2	5.0	4.9	6.3	8.5	7.6	8.7	8.5
Querétaro	2.4	3.9	4.9	5.3	6.7	5.2	5.6	5.4	4.5	5.5	7.2	6.6	8.5	8.8
Quintana Roo	0.4	1.2	2.3	1.8	2.6	0.7	-0.6	0.2	-0.8	1.9	6.0	5.4	8.6	8.9
San Luis Potosí	3.3	4.1	3.9	3.2	3.3	1.3	2.3	3.6	4.1	6.2	8.1	6.5	8.3	8.4
Sinaloa	3.6	4.0	3.6	2.7	2.9	0.9	1.7	2.9	3.3	5.3	7.3	5.8	7.5	8.0
Sonora	3.1	3.8	4.1	3.8	5.0	3.4	4.3	5.3	4.9	6.5	8.3	6.5	7.7	7.6
Tabasco	2.9	4.1	4.9	4.8	5.9	4.8	6.3	7.2	6.8	7.7	9.1	7.6	8.8	8.5
Tamaulipas	1.3	2.4	2.7	3.1	5.0	4.2	6.5	8.2	8.2	9.6	10.7	8.2	8.8	8.3
Tlaxcala	0.9	3.3	5.0	5.6	7.2	5.3	6.1	7.7	7.2	8.6	10.4	7.9	8.5	7.4
Veracruz	4.0	4.6	4.3	3.8	4.5	2.5	3.5	4.6	4.7	7.0	9.2	7.6	8.9	8.2
Yucatán	4.3	4.9	5.3	4.4	4.6	3.0	3.7	5.2	5.0	6.1	7.6	5.7	6.9	7.2
Zacatecas	3.8	4.2	4.8	4.2	4.9	3.5	4.5	6.5	6.5	7.8	9.4	7.0	8.2	7.8

Source: BBVA Bancomer with SHF data.

Table 4.5

Quarterly macroeconomic indicators													
	13'II	III	IV	14'I	II	III	IV	15'I	II	III	IV	16'I	II
Real GDP (annual % change)	0.7	1.6	1.1	1.1	3.0	2.3	2.6	2.5	2.3	2.6	2.4	2.4	1.5
Real private consum., (annual % change)	2.5	2.4	1.0	0.1	2.3	2.0	2.5	3.3	2.6	3.0	3.5	2.7	1.9
Real gov. consumption, (ann. % change)	0.3	1.6	2.4	1.8	1.9	3.4	1.5	3.3	2.7	1.4	2.2	-0.2	1.8
Real const. investment, (annual % change)	-3.7	-6.3	-4.5	-1.4	-1.1	3.8	3.8	4.0	2.1	0.5	-2.6	0.8	1.1
Residential	-3.9	-7.2	-5.3	-2.5	0.2	5.9	8.5	3.9	2.9	5.1	0.1	4.4	7.4
Non-residential	-3.5	-5.7	-3.9	-0.6	-2.0	2.3	0.4	4.1	1.4	-2.9	-4.6	-1.8	-3.8

Source: BBVA Bancomer with Inegi data

Table 4.6

Quarterly construction and housing indicators													
	13'II	III	IV	14'I	II	III	IV	15'I	II	III	IV	16'I	II
Construction GDP, real (ann. % change)	-4.0	-6.9	-4.7	-1.5	-0.5	4.1	5.6	4.7	3.1	3.5	-0.5	2.0	3.1
Building	-4.4	-7.1	-6.0	-2.2	-0.5	4.7	7.6	5.7	4.0	4.0	-0.3	2.1	6.8
Construc. engineering and major works	-4.3	-7.6	-2.4	-3.6	-3.6	0.0	-1.9	1.5	-0.3	1.0	-1.0	1.7	-8.7
Specialized construction work	-1.4	-4.4	-1.9	8.5	6.1	9.3	10.6	5.0	4.4	6.1	-1.2	-0.4	4.4
Construc. companies ¹ (real ann. % change)	-1.5	-6.3	-4.9	-2.2	-2.2	1.7	1.8	3.4	0.7	-0.5	-2.4	0.1	-1.2
Building	-4.8	-7.1	-6.9	-2.1	0.1	5.2	7.2	7.9	2.7	-0.5	-2.6	-2.1	2.1
Public works	-3.9	-7.3	-2.4	-4.1	-4.3	-1.5	-2.8	1.1	-0.3	1.3	-1.0	2.4	-6.2
Water, irrigation and sanitation	3.9	-7.1	9.7	14.8	-22.5	-9.5	-6.8	-9.2	-0.5	-7.8	-9.6	1.6	-2.6
Electricity & communications	-11.4	7.6	6.6	-11.1	-6.5	-17.3	-6.3	0.3	8.4	11.9	14.6	16.0	33.2
Transportation	-9.3	-13.6	-4.1	-0.5	0.4	9.2	1.0	2.1	-2.3	-4.7	-9.6	-1.4	-5.8
Oil and petrochemicals	11.8	-0.2	-7.8	-15.9	-4.5	-11.7	-7.9	4.9	-0.4	15.2	17.0	4.8	-31.3
Other	37.0	3.9	-7.7	6.5	-1.5	3.3	1.2	-5.7	-3.5	-9.2	-8.1	-0.2	7.0

Source: BBVA Bancomer with Inegi and Bank of Mexico data

Table 4.7

Quarterly housing market indicators													
	13'II	III	IV	14'I	II	III	IV	15'I	II	III	IV	16'I	II
Home sales by organization (thousands of credits)													
Infonavit	99.9	92.1	106.0	71.8	92.8	100.2	122.3	86.4	102.5	90.7	113.4	78.0	103.6
Fovissste	18.0	16.0	19.2	13.7	16.8	11.1	21.5	15.4	20.4	17.1	11.5	13.9	19.3
Banks	18.9	20.3	23.2	17.0	17.8	20.0	22.1	18.9	20.4	22.4	23.4	19.2	22.2
Total	136.7	128.4	148.5	102.5	127.4	131.3	165.9	119.3	143.2	130.2	148.4	111.0	145.1
Financing (billions of June 2016 pesos)													
Infonavit	30.2	27.9	33.1	22.4	29.4	32.0	40.7	29.0	33.3	29.7	35.0	24.4	32.2
Fovissste	10.9	9.7	11.9	8.8	11.4	7.6	15.5	10.2	13.5	11.2	7.3	8.6	12.1
Banks	29.6	31.4	37.9	31.6	32.6	34.5	40.2	31.6	35.0	37.7	41.3	32.0	37.5
Total	70.7	69.1	82.9	62.8	73.4	74.1	96.4	70.8	81.8	78.6	83.6	64.9	81.8
Infonavit: number of credits to buy a house (thousands)													
Economic + Popular ²	70.1	62.2	72.1	51.3	61.3	69.8	87.5	63.0	72.9	59.1	83.0	54	71
Traditional	20.5	19.9	21.7	14.1	19.0	19.0	21.5	13.8	17.4	18.7	18.7	14	19
Middle income	7.4	7.8	9.4	5.0	10.1	9.0	10.5	7.6	9.5	10.2	9.7	8	11
Residential	1.6	1.9	2.3	1.2	2.1	2.1	2.3	1.7	2.2	2.3	1.7	2	2
Residential Plus	0.3	0.3	0.5	0.2	0.4	0.4	0.4	0.3	0.4	0.4	0.3	0	0
Total	99.9	92.1	106.0	71.8	92.8	100.2	122.3	86.4	102.5	90.7	113.4	78.0	103.6

Source: BBVA Bancomer with Bank of Mexico, CNBV, Infonavit, Fovissste & ABM data.

*As of this period includes loans with CNBV co-participation.

Table 4.8

Quarterly housing credit indicators													
Commercial banks current loan portfolio													
Past-due loans index (%)	3.4	3.5	3.5	3.5	3.5	3.5	3.3	3.2	3.1	2.9	2.8	2.8	2.8

1: Considers the value of production of firms affiliated and not affiliated to the Mexican Chamber of the Construction Industry.

2 Includes new and existing homes.

Note: Price ranges expressed in times the minimum monthly wage (VSMM); Economic and Popular Segment (118-200), Traditional (201-350), Middle income (351-750), Residential (751-1500) and Plus (1500 and more) SMM=2,046 pesos in 2014 in the "A" zone.

Source: BBVA Bancomer with Inegi, Infonavit, Fovissste & Bank of Mexico data.

Table 4.9

Monthly macroeconomic indicators

	M.15	A	M	J	J	A	S	O	N	D	J.16	F	M	A	M	J
IGAE (annual % change)	2.7	2.1	1.4	3.1	1.9	2.7	3.3	2.2	2.5	2.4	2.2	4.0	1.0	3.0	2.1	2.2
Real constr. vol. (ann. % change)¹	6.2	5.6	1.2	2.4	4.4	2.5	3.6	1.1	-1.2	-1.4	2.8	3.5	-1.0	3.5	2.8	2.2
Building	7.5	9.4	1.0	1.8	4.9	2.5	4.4	1.1	-0.1	-1.8	3.9	3.9	-1.4	6.5	5.2	7.1
Civil engineering and major works	1.9	-4.2	0.8	2.5	1.9	0.4	0.8	0.3	-4.0	0.8	0.9	2.7	1.4	-2.9	-8.3	-14.2
Specialized construction work	7.2	3.7	3.2	6.4	6.3	6.6	5.3	2.4	-2.0	-4.3	-0.8	3.1	-3.2	-4.0	10.0	6.6
Formal private empl. (IMSS, mills)²	17,538	17,603	17,596	17,674	17,719	17,791	17,909	18,055	18,188	17,884	17,953	18,095	18,155	18,237	18,258	18,326
Annual % change	4.5	4.5	4.2	4.4	4.4	4.5	4.2	4.1	4.1	3.7	3.8	3.8	3.5	3.6	3.8	3.7
Average salary quote³	303.8	304.0	307.5	306.3	310.4	309.9	305.3	304.3	305.9	306.7	318.2	317.7	315.6	314.8	319.6	318.8
Real annual % change	1.0	0.9	1.4	1.2	1.5	1.8	1.5	1.7	1.8	1.9	1.1	0.9	1.2	1.0	1.3	1.5
Real total wages (IMSS, ann. % chg.)	5.5	5.5	5.7	5.7	6.0	6.3	5.8	5.8	6.0	5.7	5.0	4.7	4.8	4.6	5.1	5.3
Min. general wage (daily, pesos)	68.3	69.3	69.3	69.3	69.3	69.3	69.3	70.1	70.1	70.1	73.0	73.0	73.0	73.0	73.0	73.0
CPI (end of period, ann. % change)	3.1	3.1	2.9	2.9	2.7	2.6	2.5	2.5	2.2	2.1	2.6	2.9	2.6	2.5	2.6	2.5
TIIE 28 (average, %)	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.6	3.8	4.1	4.1	4.1	4.1
10-year Gov. bond int. rate (M10)	5.9	5.9	6.0	6.1	6.0	6.1	6.0	6.0	6.2	6.3	6.0	6.1	5.9	5.9	6.1	5.9

1: industrial activity index

2: Thousands of persons

3 Nominal pesos per day for the number of IMSS-registered workers.

Source: BBVA Bancomer with Bank of Mexico, Inegi & IMSS data

Table 4.10

Monthly construction and housing indicators

	M.15	A	M	J	J	A	S	O	N	D	J.16	F	M	A	M	J
Constr. emp. (IMSS, thousands)	1,463	1,484	1,487	1,516	1,536	1,553	1,554	1,571	1,561	1,445	1,471	1,497	1,490	1,512	1,525	1,542
Annual % change	11.1	11.5	9.7	10.4	9.5	9.4	7.5	5.7	4.7	3.0	3.2	3.1	1.9	1.9	2.6	1.7
Cement sales (tons, ann. % chge.)	10.4	13.5	7.2	10.1	8.3	6.3	12.7	5.0	1.2	0.0	0.8	3.2	-6.2	2.5	4.2	6.2
Cement cons. per inh. (ann. % chg.)¹	10.4	13.5	7.2	10.1	8.3	6.3	12.7	5.0	1.2	0.0	0.8	3.2	-6.2	2.5	4.2	6.2
Construction prices (ann. % chge.)	3.7	3.8	3.9	3.7	3.7	4.5	4.1	4.6	4.6	4.4	3.8	3.8	4.5	4.4	5.1	6.0
Materials (annual % change)	3.6	3.7	3.9	3.6	3.5	4.6	4.1	4.6	4.7	4.4	3.8	4.0	4.8	4.7	5.5	6.6
Labor (annual % change)	4.1	3.9	3.7	3.8	4.0	3.9	3.9	3.8	3.8	3.8	3.1	2.0	2.5	2.5	2.7	2.7
Mach. Rental (annual % change)	4.5	5.1	5.7	5.7	6.0	6.4	6.9	6.7	7.6	6.8	7.8	8.2	6.8	6.5	7.0	8.1

1: The volume of cement production is used as a proxy for consumption.

Source: BBVA Bancomer with Bank of Mexico, Inegi & IMSS data

Table 4.11

Monthly housing credit indicators

	M.15	A	M	J	J	A	S	O	N	D	J.16	F	M	A	M	J
C. banks loan port. (bal., bn pesos*)	522.6	525.6	528.3	533.3	539.5	545.0	554.1	563.1	572.5	581.2	590.3	594.9	601.6	604.8	610.9	616.5
Annual % change	12.6	13.3	13.0	13.9	15.3	15.1	15.4	15.7	15.2	15.3	15.6	15.9	15.1	15.1	15.6	15.6
Total annual cost (CAT, average)	13.2	13.2	12.5	12.6	12.6	12.6	12.5	12.5	12.6	12.6	12.6	12.6	12.7	12.7	12.6	12.5

Note: As of March 2013 Mortgage Sofoles transformed into Sofomes

* June 2016 pesos

Source: BBVA Bancomer with Bank of Mexico, Conasami, INEGI, IMSS & CNBV data

5. Special topics included in previous issues

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