

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

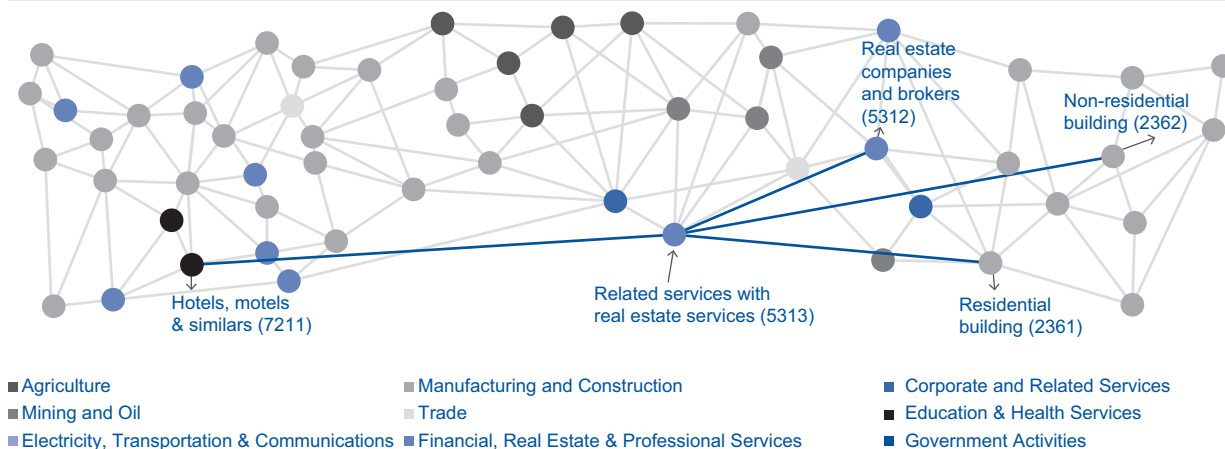
Although the manufacture of cement and concrete products is the biggest contributor to demand for commercial building construction among secondary activities, there are other types of economic activity with significant contributions, whether through the industry or through real estate services, linked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

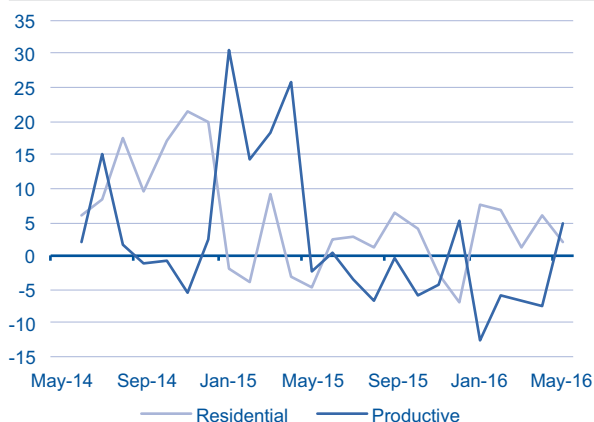
Price cycles of commercial building construction

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

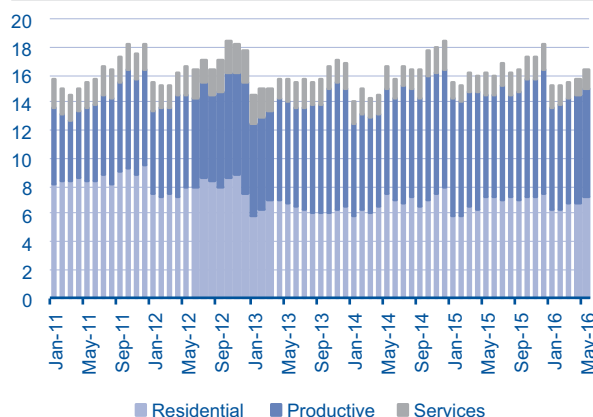
Value of construction companies' output YoY % change



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

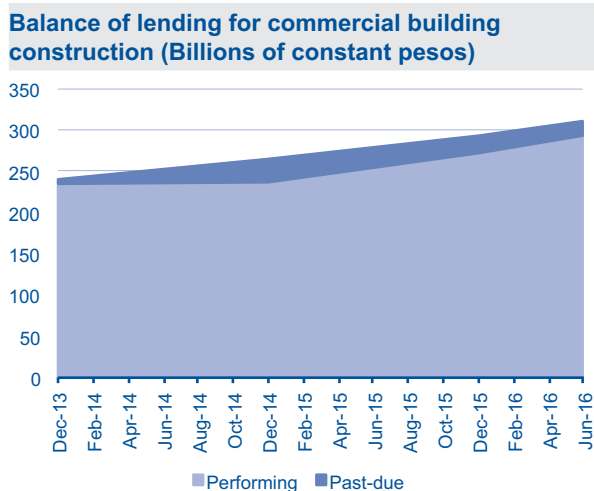
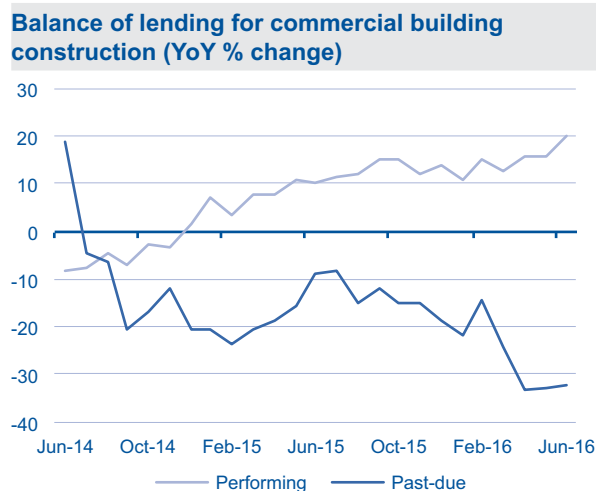


Figure 3a.4



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

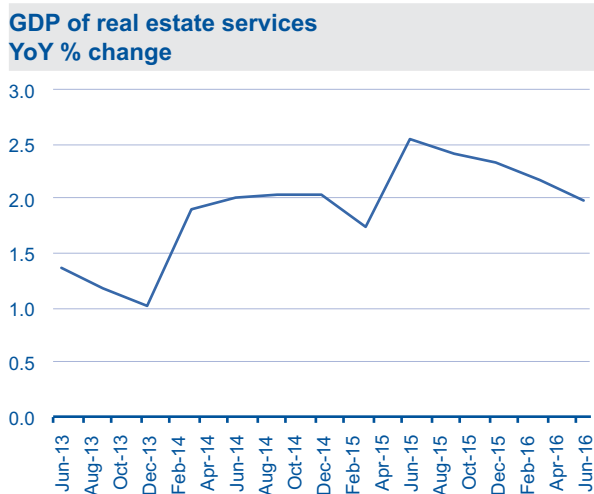
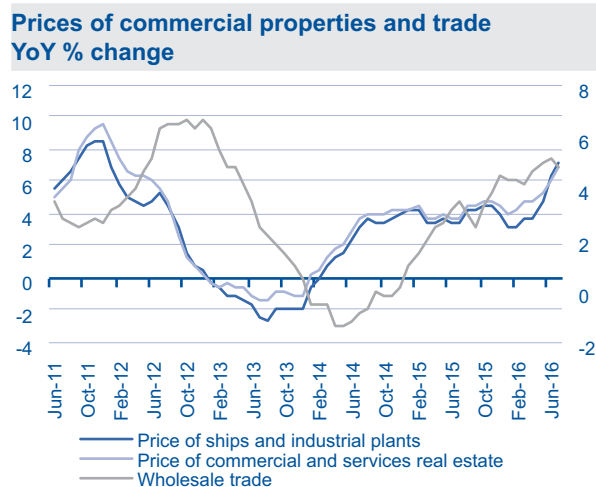


Figure 3a.6



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

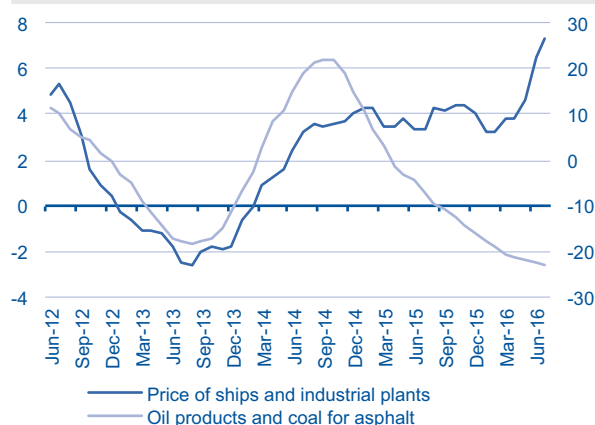
Prices of commercial properties and rental services (YoY % change)



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%

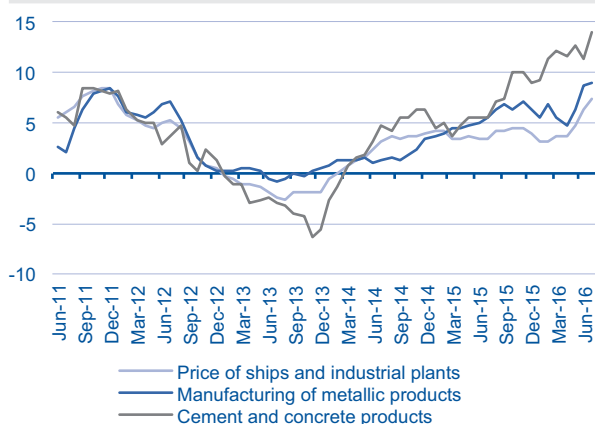
It is important to note that the speed of increase in the value of these properties has continued to increase until now, in spite of a possible stabilisation in demand. This is because since 2013, the prices of the main inputs used in the production chain have increased, which in the short term exerts 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

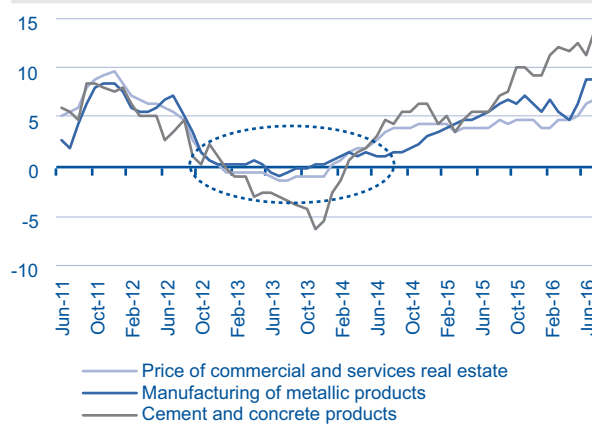
Prices of industrial premises and inputs YoY % change



Source: BBVA Research based on data from the INEGI

Figure 3a.10

Prices of commercial properties and inputs YoY % change



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.

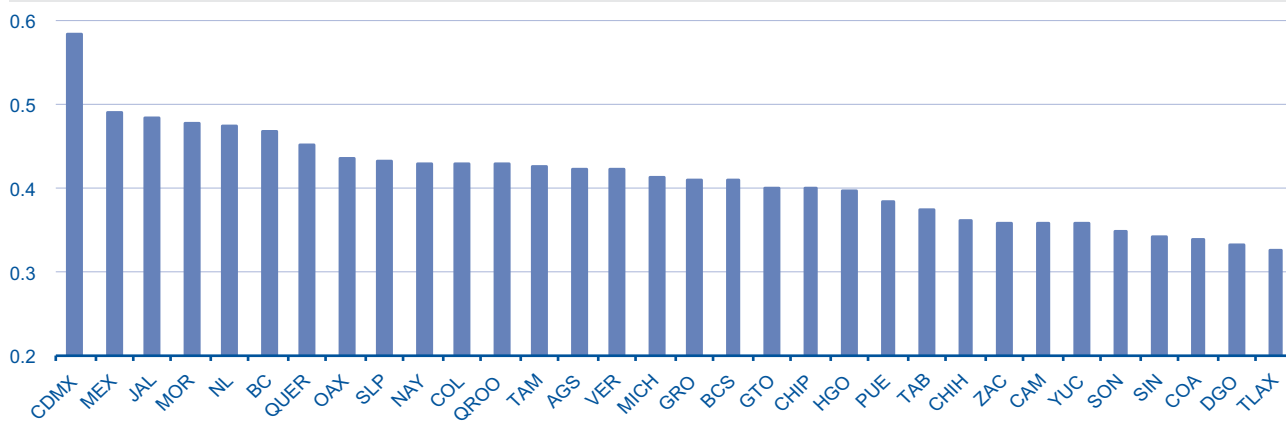
1: The market value of housing is stipulated in the notarised appraisal.

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

Index of margin in housing prices Ratio of margin to house price



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.

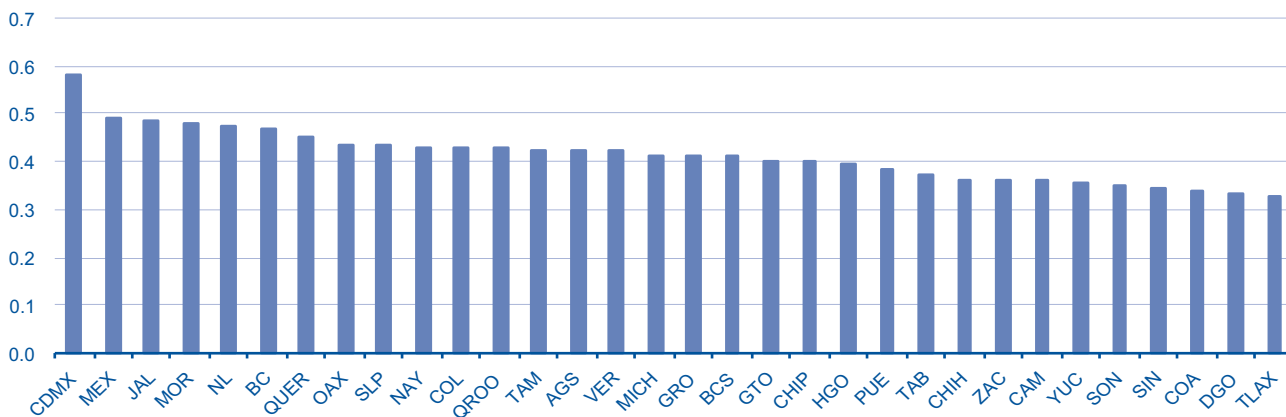
The cities with the highest margin indices are reflecting the economic attraction of Mexico City; when combined with the greater metropolitan area these cities show sustained increases in demand for housing, mainly in the middle and residential segments. The states of Jalisco, Nuevo León and Quintana 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

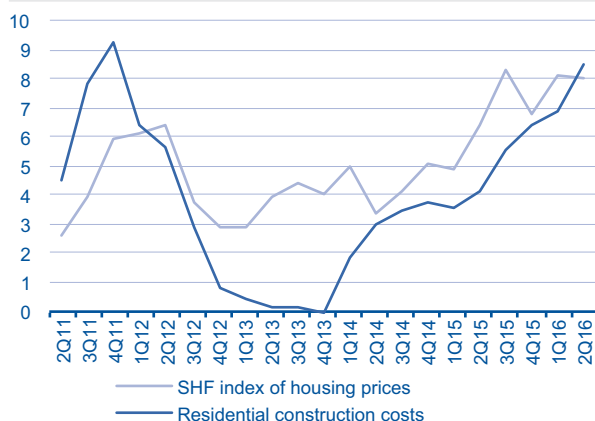
Price margins and the cycle of construction costs

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

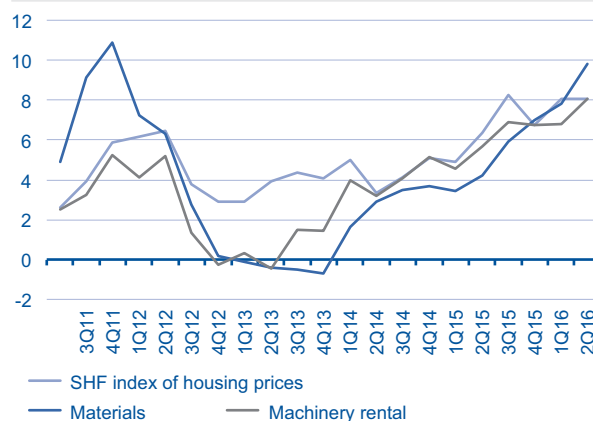
Housing prices and construction costs YoY % change



Source: BBVA Research based on data from SHF and INEGI

Figure 3b.4

Housing prices and price of inputs YoY % change



Source: BBVA Research based on data from SHF and INEGI

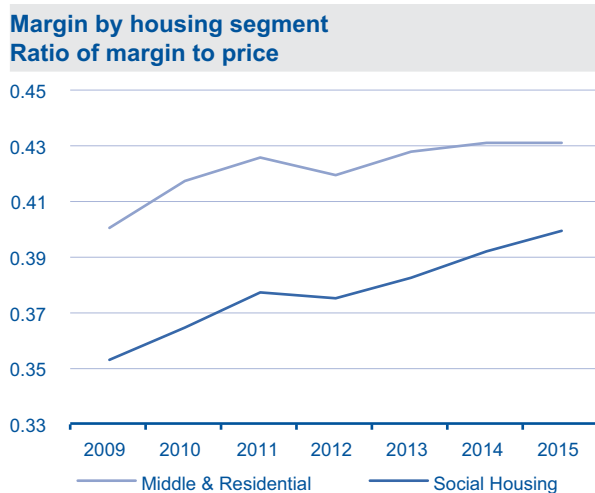
The annual growth rate of the SHF's price index for the first two quarters of the year was 8.1% on average compared to the same period in 2015. In step with this, the INPP for residential construction increased by 7.7% over the same period. This would seem to confirm that, at a national level, the increase 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

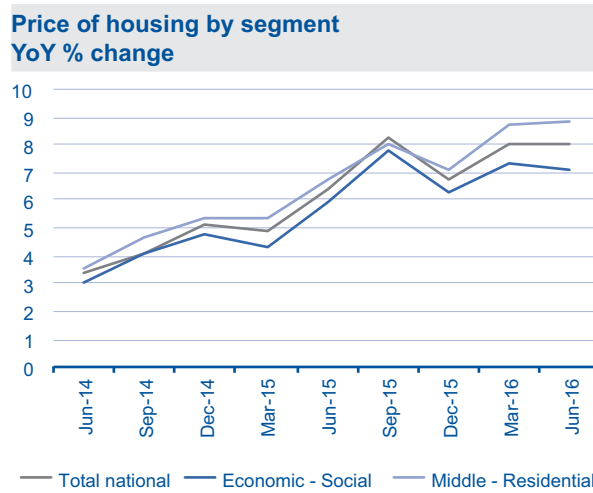
It could be that costs are not the whole reason for the appreciation in the various segments of the housing market. Since 2014, middle and residential housing has shown stronger growth than the social housing segment thanks to improved public and private sector credit conditions. This has stimulated 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

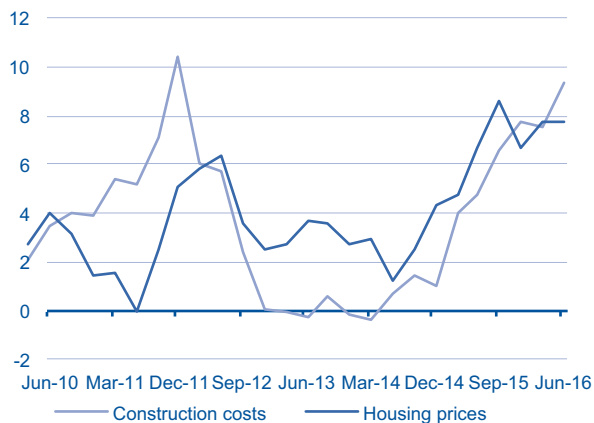
Source: BBVA Research with data from the National Appraisals Database

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.

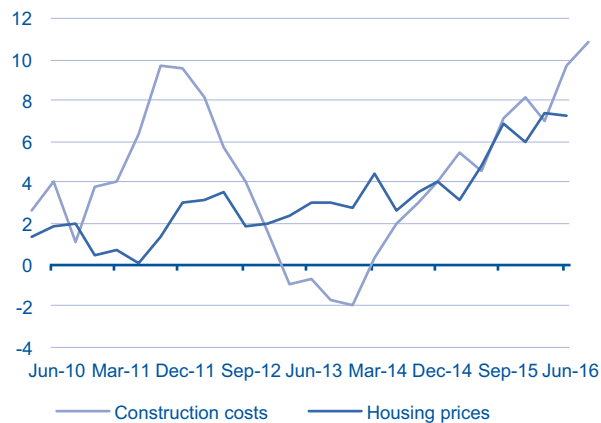
If we consider in particular the cases of Nuevo León, Jalisco, the State of Mexico and Quintana Roo, being the states receiving most in subsidies, we find that in the first two, which we know have concentrated around 20% of the support for home purchases at national level, construction costs have increased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

Figure 3b.7

**Nuevo León: prices and costs of housing
YoY % change**

Source: BBVA Research based on data from SHF and INEGI

Figure 3b.8

**Jalisco: prices and costs of housing
YoY % change**

Source: BBVA Research based on data from SHF and INEGI

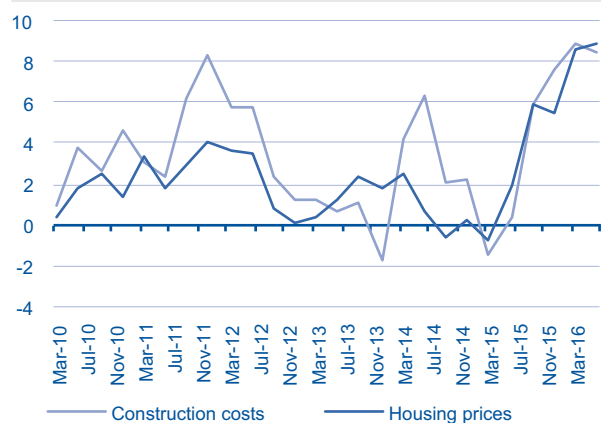
Apart from this, in the State of Mexico the gap between price margins is much narrower than in the states in the sample. Since 2013, construction costs have increased much more slowly than housing prices. As regards Quintana Roo, the gap prevailed between 2010 and 2014, although since 2015 the appreciation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

Figure 3b.9

**State of Mexico: prices and costs of housing
YoY % change**

Source: BBVA Research based on data from SHF and INEGI

Figure 3b.10

**Quintana Roo: prices and costs of housing
YoY % change**

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.

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