

3. Special topics

3.a The determining factors of the housing supply in Mexico

Introduction

In the issue for the First Half of 2015 of **Mexico Real Estate Outlook** we mentioned the importance that construction costs have had for the amplitude of house price cycles. This feature is also explained by the fact that in the short term the housing supply tends to be rigid, so that the adjustment in its value would be affected to a greater extent by costs or demand shocks.

In Mexico, the most appropriate indicator for monitoring housing projects is the National Housing Register, better known as the RUV, which began issuing information in late 2006. However, studies related to the supply cycles have been scarce. That is why, in this issue of **Mexico Real Estate Outlook**, we conduct an analysis to ascertain its economic determining factors, taking as a reference expected prices and construction costs. In other words, profit margins and the interest rate as a fundamental part of the real estate business cycle.

First, we explore the supply cycle in its most important stages. Subsequently, we present empirical evidence of the main factors according to economic theory and some benchmark studies. In this area, we also consider the amount of housing subsidies issued by the federal government as a distorting element in market expectations.

Finally, we present a sensitivity analysis of housing supply with respect to profit margins and the interest rate, elements recognised by economic theory, and also the impact of subsidies in recent years and the ensuing conclusions.

Recent cycles of housing construction

The National Housing Register was set up in 2006 and was created with the purpose of accounting for the number of new homes that were being channelled through some type of financing from Infonavit. Subsequently, the homes that were placed through Fovissste were included and, since 2016, the RUV has allowed the incorporation of housing construction projects that are financed through commercial banking. Unlike building projects offered through public institutes, those financed by commercial banking are not required to be registered. However, since its creation and to date, it has been established as a benchmark, since it includes around 80% of all new homes that have been placed on the market.

In terms of the volume of construction projects registered, we could divide production into three cycles. The first was between 2007 and 2011, when building levels reflected more clearly the real estate boom prior to the crisis of 2008. In those years, about 700,000 homes were built, while in the post-crisis period some 500,000 were built per year.

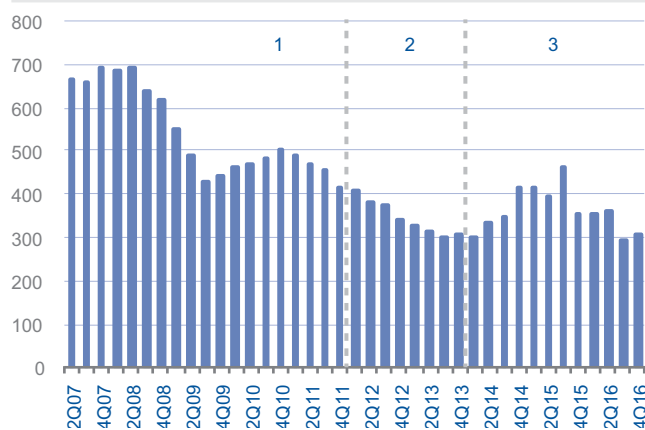
Subsequently, between 2011 and 2013, there was a downward supply trend, as the market matured, other types of housing solutions were required (remodelling, enlargement and purchase of used homes) and new housing started losing ground. It was not until the third cycle, from 2014-2016, when levels close to those registered at the end of 2010 were reached, with 450,000 annualised projects. However, as we have also mentioned in previous numbers, in the current construction model a stable level of projects has oscillated around 350,000 houses in annual terms.

Given the above, the extraordinary uptick in supply observed between 2014 and 2015 could be explained more by supply-side incentives, through purchase subsidies. Although recently the cycle of employment growth at rates above those of the economy explained higher sales of new homes, especially with mortgages, the economic slowdown visible

since last year would explain the fall in plans by builders, as we are seeing at year-end 2016, although the reduction of more than 30% in subsidies would also explain the contraction in supply.¹

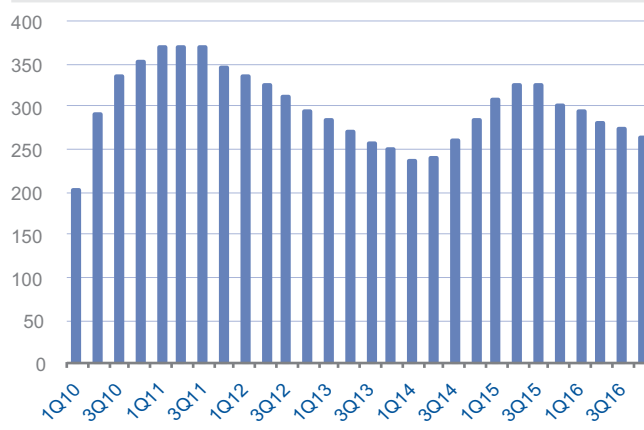
Another indicator that also reflected the increase in production in recent years is the inventory, which consists of the number of houses on which construction has been completed and also have basic services (water, electricity and drainage). Although this indicator uses information since mid-2009, it reflects a trend similar to the number of registrations, showing a considerable increase during 2015 and then a downward trend in 2016, so that there are no signs of over-supply in the market with respect to what it can absorb.

Figure 3a.1 Registrations for housing construction in the RUV, thousands of annualised units



Source: BBVA Research based on data from the RUV

Figure 3a.2 Inventory of new housing, thousands of annualised units



Source: BBVA Research based on data from the RUV

The determining factors of the housing supply

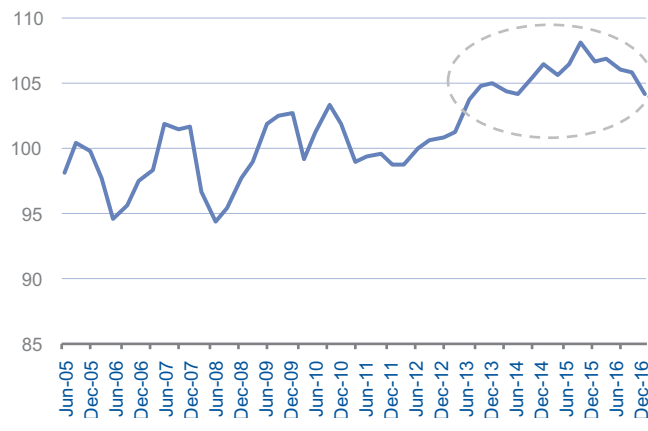
According to economic theory, the decision to invest in housing construction is largely determined by the costs incurred by the builders and those which directly modify the profit margins. The relationship between the SHF housing price index and the producer price index is this indicator, as suggested by numerous studies on the factors that influence the housing supply. Therefore, in the long-run equilibrium, the relationship between house prices and construction costs should be close to 100. This is consistent with the fact that under competitive conditions the decision to build additional housing should not be determined by the increase/decrease of either of these two factors.

Grimes and Aitken (2006) found that profit margins and interest rates determine construction investment decisions, depending on price expectations, since, in the face of demand shocks, the housing supply does not react overall, as the quantities are restricted by the amount of land and the search costs faced by builders. This behaviour is typical of urban areas where the supply of land for construction is limited. On the other hand, Gattini and Ganoulis (2012) agree that, in a competitive market, the long-term housing supply would not be far from being perfectly elastic and would be determined by construction costs. Meanwhile, Wang and Chan (2012) estimate supply as a positive function of margins and a negative function of interest rates.

1: See Housing situation. First Half 2017..

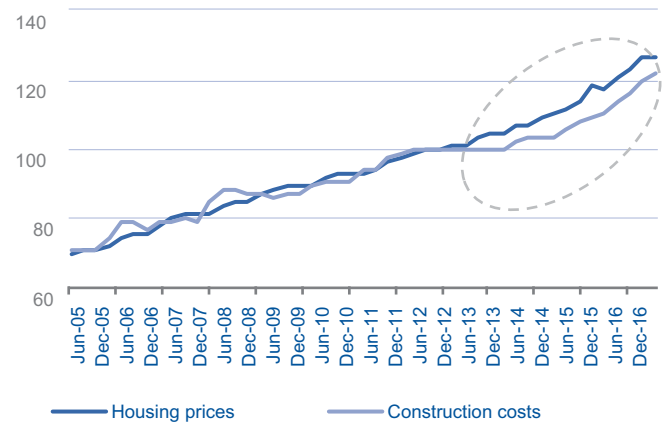
In Figure 3a.3, we can see that the profit margin ratio hovered around 100 between 2005 and 2010. Between 2011 and 2013, when the change in consumer preferences and the over-bidding episode occurred, the index remained stable, as we saw in the previous section, and a slowdown in the growth of the value of real estate also suggested a slowing down of residential construction costs. However, from the end of 2013 until the close of 2016, the profit index was above the average for previous years.

Figure 3a.3 Index of the profit margin of builders, Index 2012 = 100



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

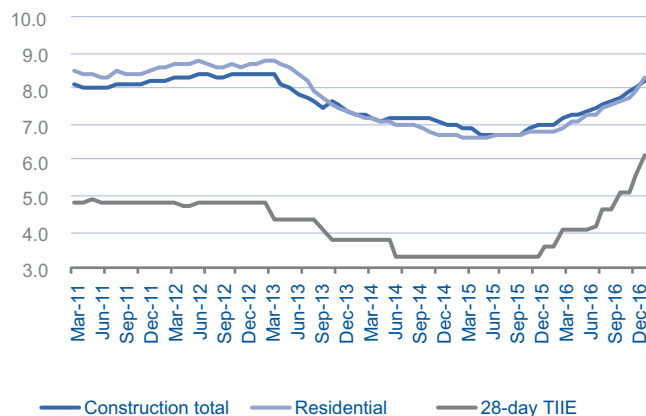
Figure 3a.4 Housing prices and construction costs, Index 2012 = 100



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

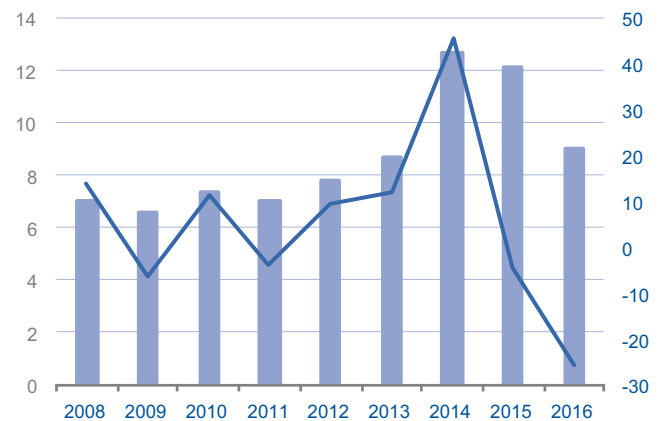
Another way to appreciate the imbalance in the margins is to directly analyse the trends in the indices involved. Figure 3a.4 shows that between 2005 and 2012 the SHF housing price index and the producer price index for residential construction showed similar behaviour. It was in mid-2013 when a gap opened, which was marked by a sustained increase in the value of houses compared to the costs for materials, as well as machinery and equipment rentals, which, as we saw in the previous section, had stalled in previous years.

Figure 3a.5 Short-term and construction interest rates, Annual percentage



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

Figure 3a.6 Amount of subsidies for housing Billions of constant pesos and YoY % change



Source: BBVA Research based on data from CONAVI

This could be explained by the fact that as of 2013, the benchmark rate of the Bank of Mexico began to decline after maintaining an upward trend for several years. As we mentioned in the **Mexico Real Estate Outlook** issue for the second half of 2014, money transfer to construction loans is immediate, which also explains the greater demand for this type of financing, especially bridging loans. (See the article entitled Market Conditions in this issue.)

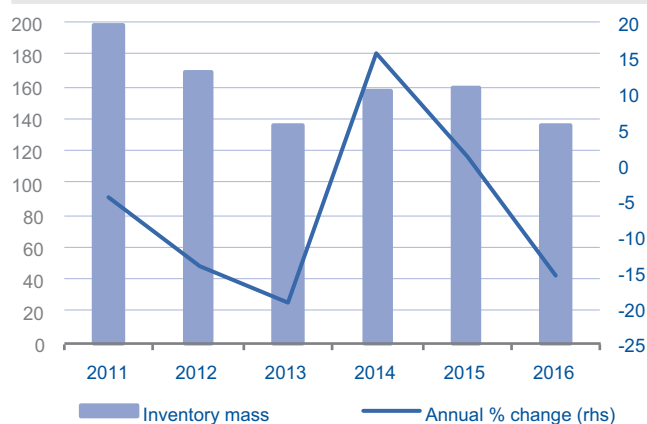
In addition, a fall in the short-term interest rate accompanied an extraordinary increase in the housing subsidies granted by the federal government through the National Housing Commission (Conavi). While it is true that the aid was intended to cover a much wider range of housing solutions, we have commented that about 90% of the amount has been earmarked for the purchase of new housing.

In 2013 the subsidies increased by 12% in real terms compared to 2012, although the most significant increases occurred in 2014 and 2015, when the amount was double the average between 2007 and 2012, 5.4 billion pesos, as can be seen in Figure 3a.6. It was not until 2016 that the subsidies returned to a volume similar to the historical average, although this has not yet been reflected in a clear decrease in profit margins.

The impact of these subsidies on the recovery of construction can be seen in the annual evolution of the mass of value created by the housing inventory, particularly in 2014, when the amount of aid grew 45% in real terms. Figure 3a.7 shows that, between 2011 and 2013, this inventory showed a downward trend, with negative rates that were accentuated with magnitudes of -14.5% and -15.7% in 2012 and 2013 respectively.

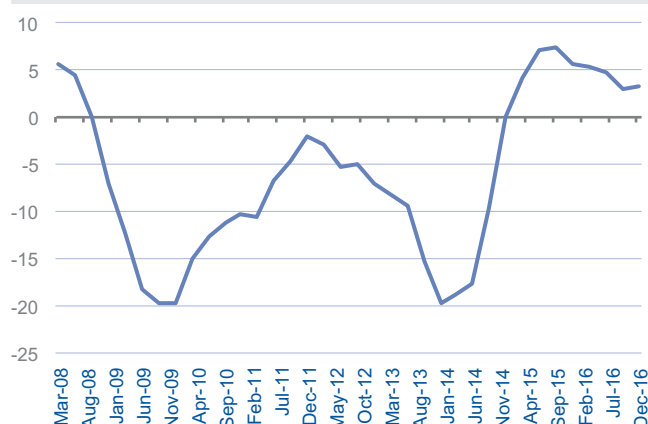
The situation was also reflected in the value generated by the construction companies, which were affected not only by the change in consumer preferences, but by a process in which the market was reconfigured to fill the gap left by the exit of big companies. The impact of subsidies on the recovery of the industry was so significant that, in the same year that it grew more than 15% in real terms, the value of housing production grew, after almost four years of being mired in negative territory.

Figure 3a.7 Monetary weight of the RUV inventory
Billions of pesos in real terms and % YoY change



Source: BBVA Research based on data from the RUV and SHF

Figure 3a.8 Production value of construction companies in housing. YoY % change



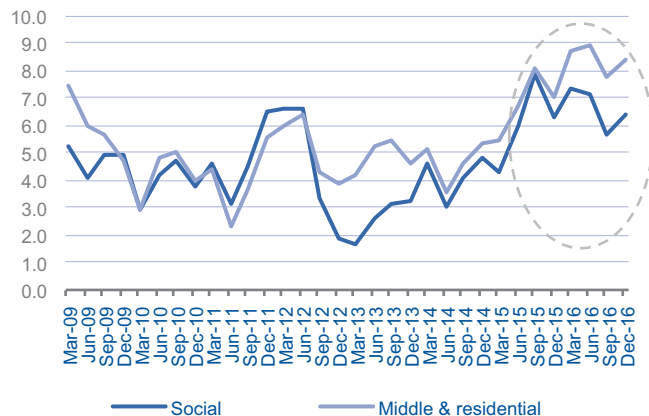
Source: Source: BBVA Research based on data from the ENEC. INEGI

With the above, the expectation of greater profits would encourage builders to raise house prices. This was reflected more clearly in 2015, once the demand for housing in the previous year consolidated. The increase in prices even held for the middle-income and residential segments, where they increased almost 9% in the second quarter of 2016.

The other element on the supply side that responded positively to the increase in subsidies were costs, since the expectation of a consolidated demand also meant a greater need for inputs. This explains why, starting in 2015, one year after the reactivation of the mass of value for inventory, the costs of materials and machinery rentals went from a rate of 4% in annual terms in December 2014 to 8% at the end of 2015.

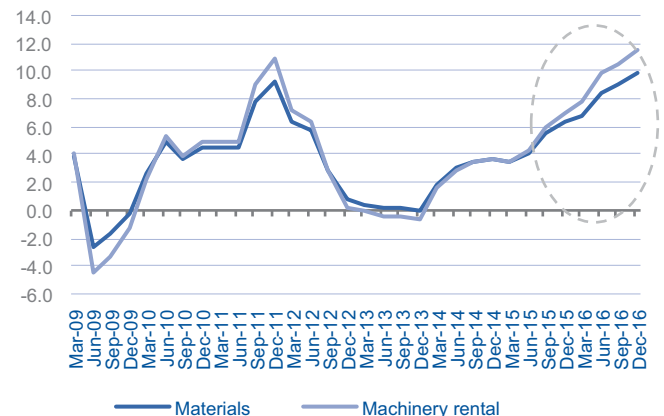
The fact that housing production reflected the distortion in prices and costs more clearly after 2015 than in 2014 is explained by the fact that the expectations of builders changed once most of the subsidies were in fact used for the purchase of new homes, shutting out the other housing solutions (construction, remodelling and extensions).

Figure 3a.9 SHF housing prices by segment
YoY % change



Source: BBVA Research based on data from the INEGI

Figure 3a.10 Prices for the construction producer
YoY % change



Source: BBVA Research based on data from the INEGI

It is true that the amount of subsidies showed a downward trend during 2016 after the highs of 2014 and 2015 and inventories are already reflecting this slowdown. Despite this, price growth at the end of 2016 still maintained high margins to offset the high costs. So, we can say that the distortion generated by the subsidies affected the entire housing production chain.

We can therefore conclude that after the industry's long period of stagnation, the combination of lower interest rates and the extraordinary injection of subsidies led to a wide gap between housing prices and construction costs, from 2013 to the present day.

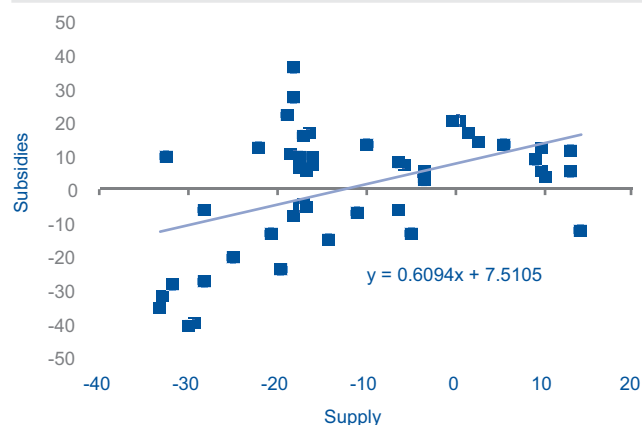
Construction of the model and sensitivity analysis

In the previous section we performed an empirical analysis of the role played by builders' profit margins, interest rates and subsidies in the decisions by builders to increase or decrease housing construction.

In order to confirm the economic relationship between the housing supply and the rest of the variables suggested by economic theory, in this section we will calculate the degree of sensitivity of the former to each of the previously explored elements. The data used in the construction of the model include the number of housing construction registrations in the National Housing Register (RUV), the SHF housing price indexes, the producer's price index for residential construction, the short-term interbank interest rate (28 days) and the amount of subsidies granted through Conavi.²

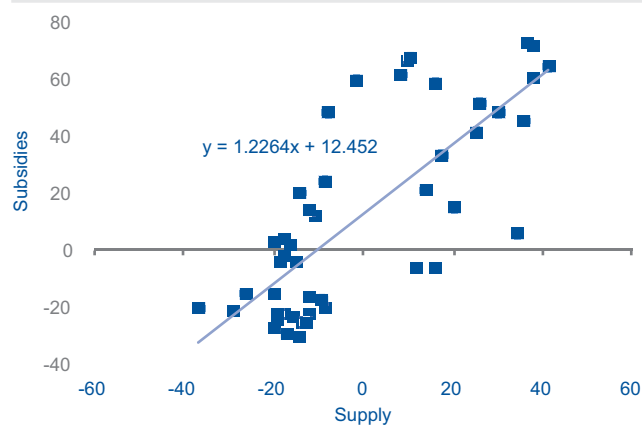
As suggested in other studies, we have estimated the economic relationship that captures the long-term equilibrium of the housing supply, based on RUV data, as a function of the margin (relationship between house price indices and housing costs). Construction) and the 28-day interest rate. We then calculated the short-term magnitudes to confirm that the economic relationship has been conserved and we also captured the significance of the amount of the subsidies, mainly in the years 2014 and 2015.

Figure 3a.11 Housing supply and amount of subsidies 2009-2012, YoY % change in scatter diagram



Source: BBVA Research

Figure 3a.12 Housing supply and amount of subsidies 2013-2016, YoY % change in scatter diagram



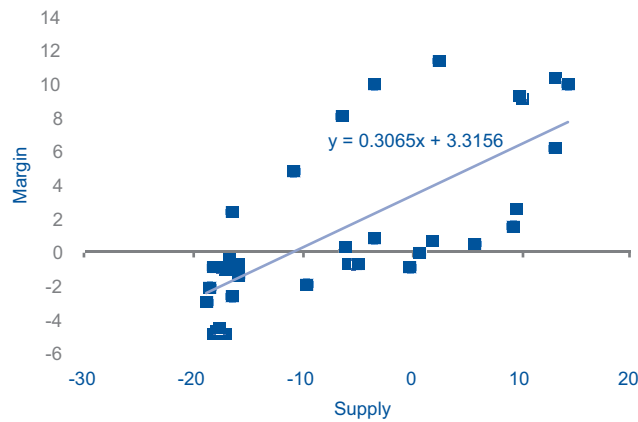
Source: BBVA Research

Figure 3a.11 shows that there is a positive relationship between the housing supply and the amount of subsidies allocated during the study period. However, if we separate the relationship into two samples, it is even more evident that starting in 2013 the slope of the regression line goes from 0.60 to 1.22, confirming the relevance of the subsidies in the distortion that can be seen in profit margins.

Similarly, in Figures 3a.13 and 3a.14 it can be seen that although the positive relationship between the builders' profit margin and the housing supply continued, it lost importance starting in 2013, when the amount of subsidies began to increase. The slope of the regression line goes from 0.30 in the period 2009-2012 to only 0.04 in the period 2013-2016. This confirms that although the significance of the expectation of profits is valid for the entire period, in the later years the effect lessened due to the influence of the subsidies.

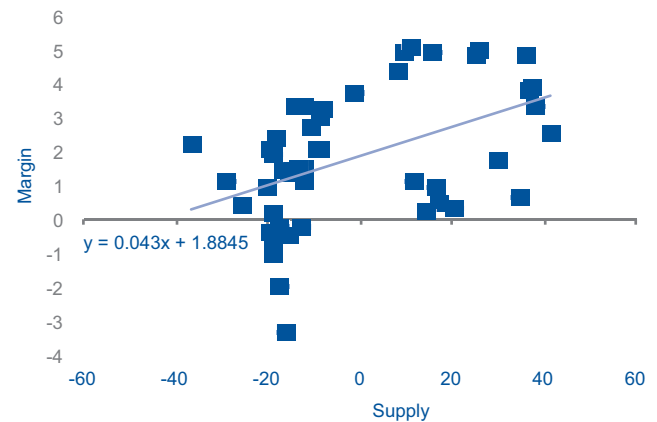
2: The 28-day TIIE is used because it is closely correlated with the interest rate for construction loans, which we have omitted from this analysis because no data are available for the entire study period.

Figure 3a.13 Housing supply and profit margin 2009-2012, YoY % change in scatter diagram



Source: BBVA Research

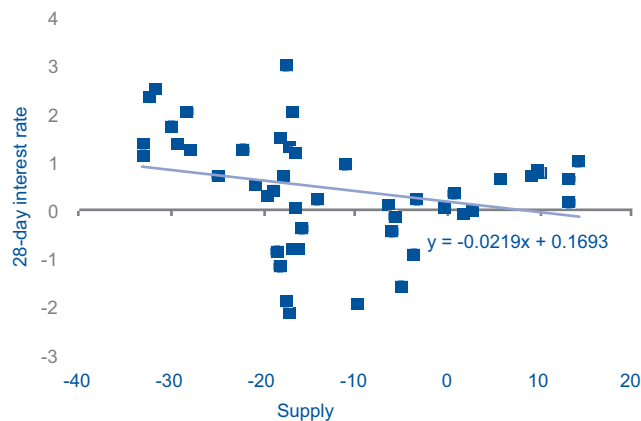
Figure 3a.14 Housing supply and profit margin 2013-2016, YoY % change in scatter diagram



Source: BBVA Research

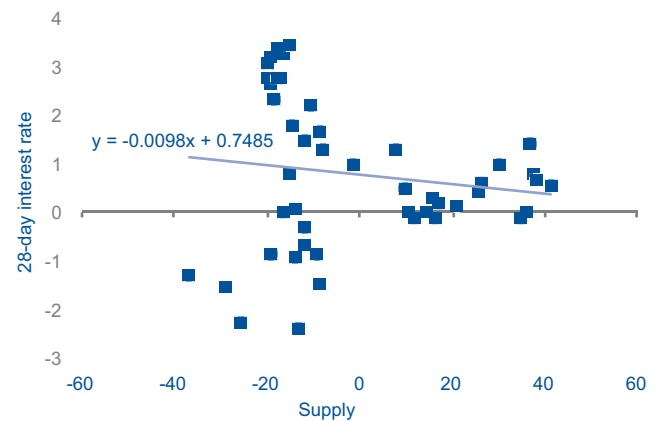
In the case of interest rates, their economic relationship with the housing supply is confirmed as being negative, as economic theory suggests. However, unlike the role of the margin and subsidies, for which there was a confirmed change in the pattern as of 2013, the effect of the short-term interest rate using the TIIE seems to be much more stable in the two periods. This tells us that the increase in subsidies from 2013 to 2016 did not significantly change the multiplier effect of the financing costs.

Figure 3a.15 Housing supply and interest rate 2009-2012, YoY % change in scatter diagram



Source: BBVA Research

Figure 3a.16 Housing supply and interest rate 2013-2016, YoY % change in scatter diagram



Source: BBVA Research

While the scatter diagrams in Figures 3a.11 to 3a.16 have been useful in determining the key moments when the structural change caused by the subsidies changed the expectations of the investors, this is not a measure that quantifies in percentage terms the sensitivity of each of these indicators to the short- and long-term momentum.

As economic theory suggests, in the short term the housing supply remains relatively fixed in the face of demand shocks, since it takes some time for them to be reflected in prices and/or costs. That is why up until 2013, the trajectories of housing price indices and costs were similar, as the amount of subsidies remained stable for several years and did not generate a radical change in expectations.

Nevertheless, once this structural change is taken into consideration, the economic relationship was not only maintained in terms of margins and the 28-day interbank interest rate, but it was also confirmed that the effect of the subsidies was positive, both in the short and the long term. The results of the sensitivity analysis are presented in the following table.

Table 3a.1 Sensitivity of housing supply

Determining factors	Response of supply in percentage points for each unit of change in determining factors	
	Short term	Long term
Margin	1.37	1.91
28-day interest rate (TIIE)	-1.31	-0.95
Subsidies	0.15	0.27

Source: BBVA Research

Conclusions

The results in Table 3a.1 show the percentage change in the housing supply for each percentage point of increase/decrease in the explanatory variables. As in studies conducted for other countries, we found that housing development projects are highly sensitive to profit margins. In the short term, home construction projects increase by 1.37% for each percentage point increase in the builders' margin, while in the long term the response rate is almost 2%.

In the case of the interest rate, the short-term effect is of a magnitude similar to that of the margin, but in the opposite direction, as suggested by economic theory. For every percentage point of increase in the cost of financing, the housing supply contracts by 1.31% in the short term. In the long term, the sensitivity decreases, but is still close to 1%. This would suggest that, although the impact is highly elastic, as time goes by it decreases, as neoclassical theory suggests in terms of the neutrality of money.

Finally, we find that subsidies have a positive effect, although it is of a smaller magnitude than the other variables. In this case, for each percentage point increase in subsidies, supply increases by 0.15% in the short term, while in the long term the magnitude of the effect increases to 0.27% for each percentage point.

While it is true that the effect of the subsidies was less than that of the margin and interest rate, it was enough to generate a distortion in the market. When combined with a decline in the cost of financing that had been visible since 2013, the expectations of a consolidated demand by builders because they had a priori information on the amounts earmarked as aid for the purchase of new houses was enough to keep the margins at higher levels during the period analysed.

This increase in margins will decrease during 2017 as demand for housing decreases, in line with economic growth and employment, which, although positive, will be more moderate, while the amount of subsidies has shrunk by more than 30%. This should not be a cause for concern, as inventories have remained stable and the growth of the SHF price index could converge at levels similar to those of inflation.

References

- Grimes & Aitken (2006). **Housing supply and price adjustment**. Motu Working Paper 06-01. Motu Economic and Public Policy Research.
- Gattini & Ganoulis (2012). **House price responsiveness of housing investments across major European economies**. WP Series. No. 1461. European Central Bank.
- Wang & Chan (2012). **The estimation and determinants of the price elasticity of housing supply: evidence from china**.

3.b Infrastructure still awaits reform effect

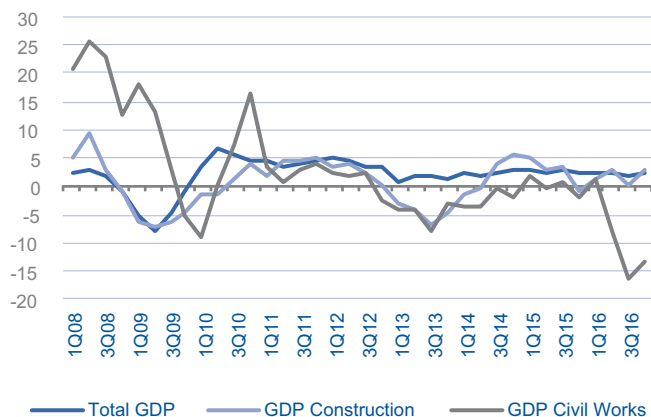
GDP of Civil Works down 9% during 2016

It is commonly known that construction is one of the most procyclical sectors in the economy. Through this activity, the authorities usually enact countercyclical policies to stimulate the economy, mainly through investment in infrastructure. In addition, these types of projects have a positive impact on potential GDP, by increasing productive capacity. Nevertheless, in the last five-year period the performance of civil engineering in the Mexican economy has been very modest. This component of construction includes infrastructure projects, which have not had a great impact despite the fact that the most ambitious national infrastructure programme of the last 20 years was announced in 2014. For this reason, in this section of **Mexico Real Estate Outlook** we conduct a review of the performance of these types of projects so far this decade.

Civil engineering, the component in which infrastructure is found, collaborates with about 30% of the construction sector, which in turn contributes just over 7% to the economy as a whole. So far this decade, this sub-sector has not grown and has had an average fall of 1.2%. By comparison, during 2008 and 2009, years within the economic crisis, civil engineering grew at an average rate of 13.9%. This was due to the growth trend observed since the turn of the millennium, but the fact that it came particularly during a time of economic crisis was the result of a countercyclical policy that helped the entire construction sector to recover faster after the economic stagnation of 2009.

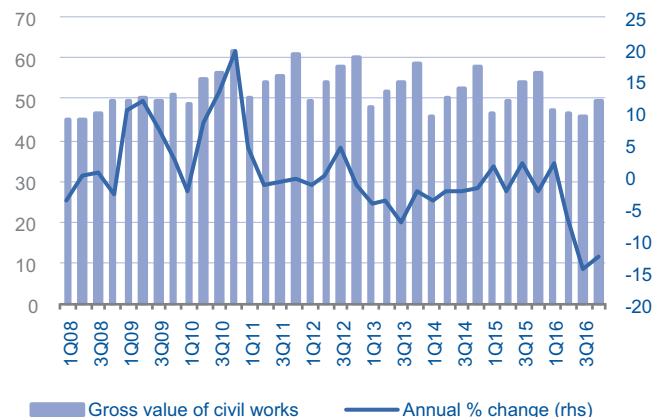
In terms of the gross value reported by construction companies for civil engineering projects, no drop was observed until 2016. In line with GDP, the gross value of civil engineering projects grew faster during 2008 and 2009, while from 2010 it slowed down until it reached negative territory in the year just ended.

Figure 3b.1 Real Gross Domestic Product
YoY % change



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

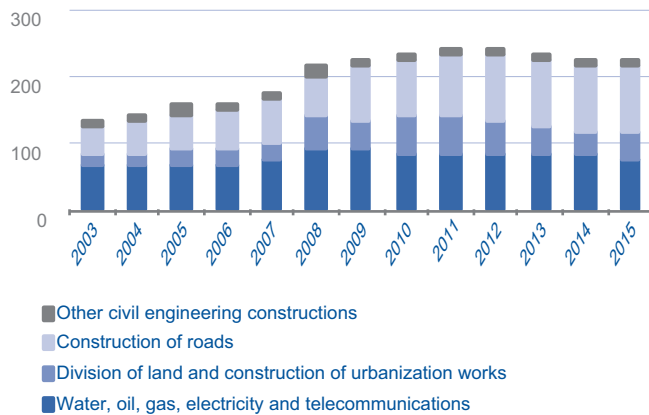
Figure 3b.2 Gross value of civil engineering
Billions of pesos in real terms and YoY % change



Source: BBVA Research based on data from ENEC, INEGI

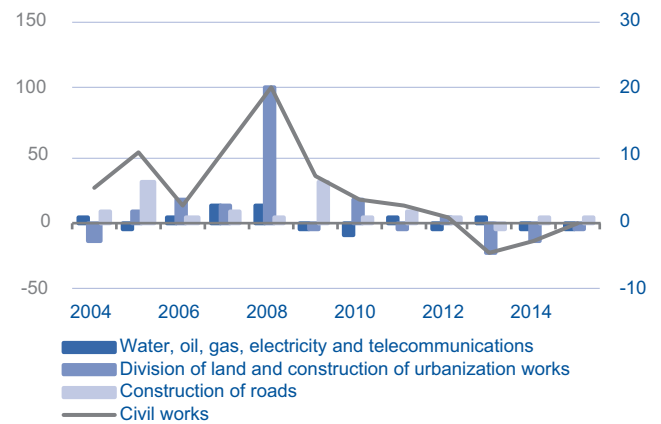
Within the GDP of Civil Engineering, it is energy infrastructure and communication links that have had the greatest share. It can be seen from the following graphs that these two types of infrastructure, plus urban planning projects, grew markedly after 2008, but at the beginning of the 2010s they fell and at best maintained the same level of added value. Energy infrastructure and communication links begin to lose their impact on the performance of the GDP of Civil Engineering, to such an extent that the variations in the latter are more influenced by the progress of urban planning projects. This is because while the two main types of infrastructure remain stagnant, only the land and urban planning division grew until 2010; once this trend was abandoned, the GDP of the sub-sector began to fall.

Figure 3b.3 GDP of Civil Engineering by Components
Billions of constant pesos



Source: BBVA Research based on data from SCNM, INEGI

Figure 3b.4 GDP of Civil Engineering by Components
YoY % change



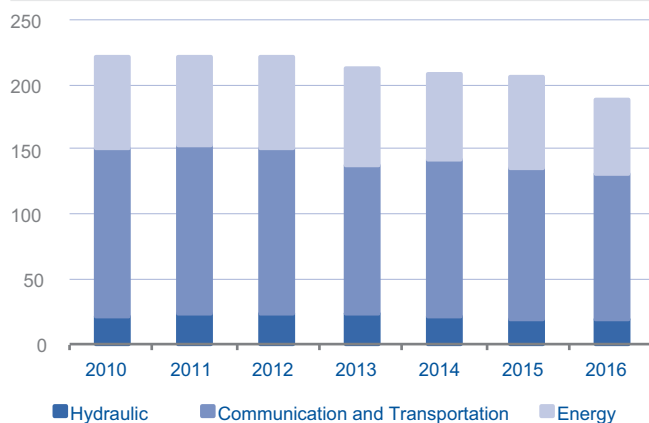
Source: BBVA Research based on data from SCNM, INEGI

Communication links and energy: the infrastructure that sustains the sector

The downward trend in infrastructure in recent years is confirmed by observing the development of the value reported by construction companies. Gross value exceeded 220 billion pesos between 2010 and 2012 before beginning to fall the following year. By type of project, communication links and transport had the largest share, followed by those associated with energy. In the first case, less activity was reported after 2012, while the value of energy-related projects began to decline from 2014.

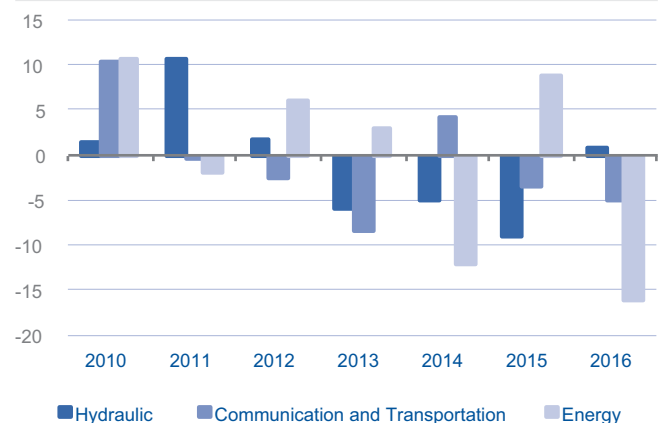
Although in the latter case there have been years with positive growth rates, the trend in the last four years has been negative, going from 74 billion pesos in real terms to 59 billion pesos. This could be explained in part by the fall in oil production and oil prices that led to lower revenues for the main company demanding these kinds of projects. This situation intensified from 2014 onwards when production, which had averaged just over 2,900 barrels a day between 2010 and 2013, fell even more until in the ensuing years it stood just above the figure of 2,600.¹

Figure 3b.5 Gross value of civil engineering projects
Billions of constant pesos



Source: BBVA Research based on data from the INEGI

Figure 3b.6 Gross value of civil engineering projects
YoY % change

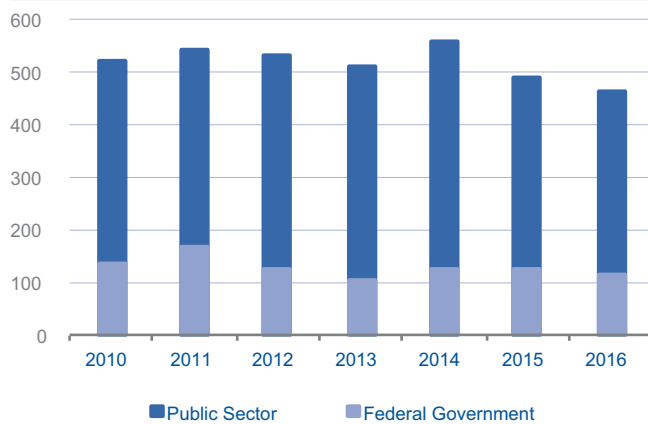


Source: BBVA Research based on data from the INEGI

1: Production of liquid hydrocarbons at www.inegi.org.mx/sistemas/bie

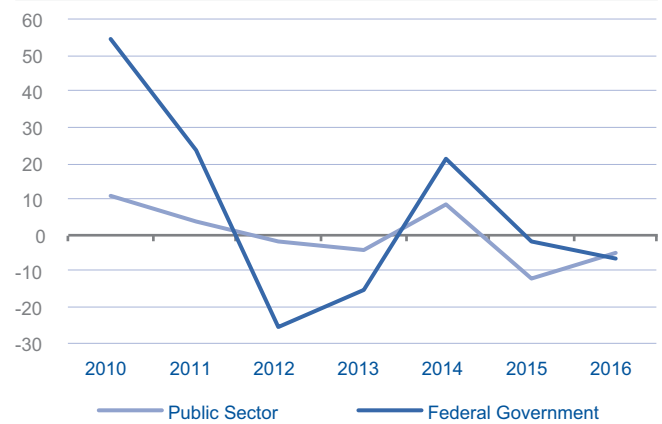
The lower rate of activity in infrastructure can be explained by the lower amount of public sector investment. One indicator of this investment is expenditure on physical capital by the entire public sector and the Federal Government in particular.² Between 2010 and 2014, the amount allocated to physical capital in the entire public sector exceeded 500 billion pesos in real terms. The maximum amount of the Federal Government was 166 billion pesos in 2011. During 2015 and 2016, for the first time in the decade, the total amount allocated to this type of capital was less than 500 billion pesos. With the exception of 2014, as of 2011 the variations in these resources have been negative in the case of the Federal Government and the entire public sector.

Figure 3b.7 Expenditure on Physical Capital
Billions of constant pesos



Source: BBVA Research based on data from the INEGI

Figure 3b.8 Expenditure on Physical Capital
YoY % change



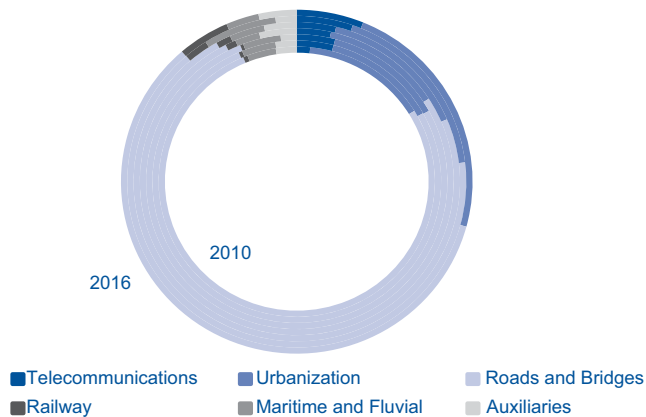
Source: BBVA Research based on data from the INEGI

Communication links on a downward path

Within communications and transport infrastructure, roads and bridges cover a greater proportion of the constructed value, at least 60% during the period analysed. In second place are urban planning projects and in third place telecommunications. In the first case, public intervention is paramount: although more projects are carried out by the private sector, the public sector is the main source of demand for this infrastructure. In the case of urban planning, local governments can also be associated as a key factor in the implementation of this infrastructure, but the private sector also has an influence, for example, through residential developments, which need to have urban services. Finally, in the case of telecommunications infrastructure, although there are projects led by the public sector, most of these projects are likely to be requested by the companies that provide these services, although the weight of telecommunications is less than 6% on average.

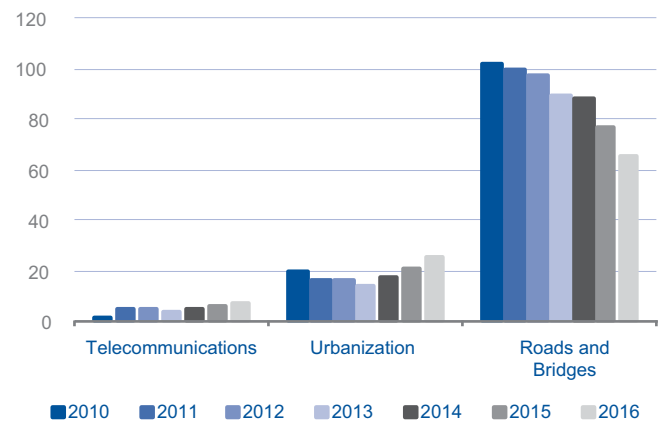
² Although not all expenditure on physical capital goes to public works or infrastructure projects, the greater part does, and this tends to explain changes in the civil engineering sub-sector.

Figure 3b.9 Gross infrastructure value in communication links, % share



Source: BBVA Research based on data from ENEC, INEGI

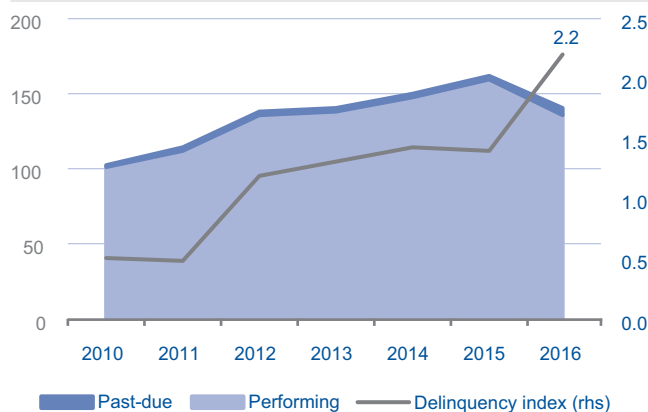
Figure 3b.10 Gross infrastructure value in communication links, Billions of constant pesos



Source: BBVA Research based on data from ENEC, INEGI

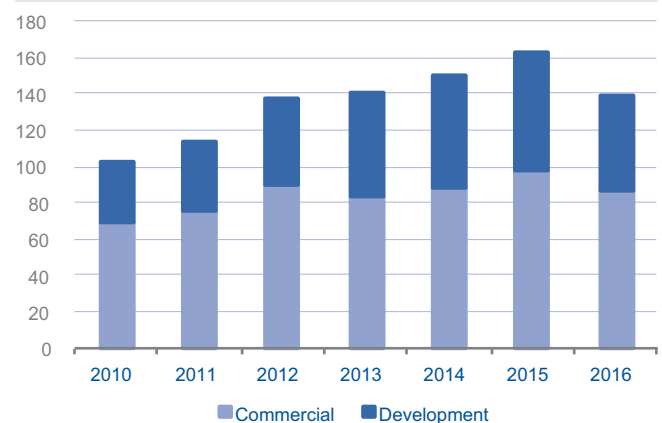
The construction of roads and bridges had an impact of 60% to 77% of the total gross value of infrastructure for communications and transport. As it is the infrastructure with the greatest weight, it is clear that less activity in it has a direct influence on the negative performance of civil engineering, and in other markets, such as bank credit. Although the credit portfolio continued to rise until 2015, after 2016 it started to decline and after having surpassed 160 billion pesos, at the end of 2016 it stood at 140 billion pesos. This credit dynamic is common to both commercial and development banks. In both cases the amount of the portfolios with which these projects are financed has decreased.

Figure 3b.11 Balance of bank credit to communication links
Billions of constant pesos and %



Source: BBVA Research based on Banco de Mexico data

Figure 3b.12 Balance of bank credit to communication links
Billions of constant pesos



Source: BBVA Research based on Banco de Mexico data

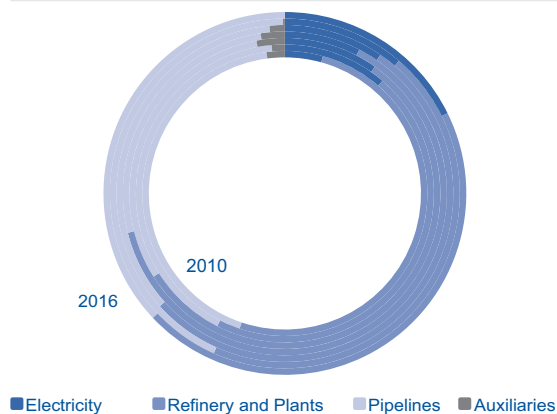
Energy infrastructure loses power

Investment in energy infrastructure fell more than 5% at year-end 2016

downwards.

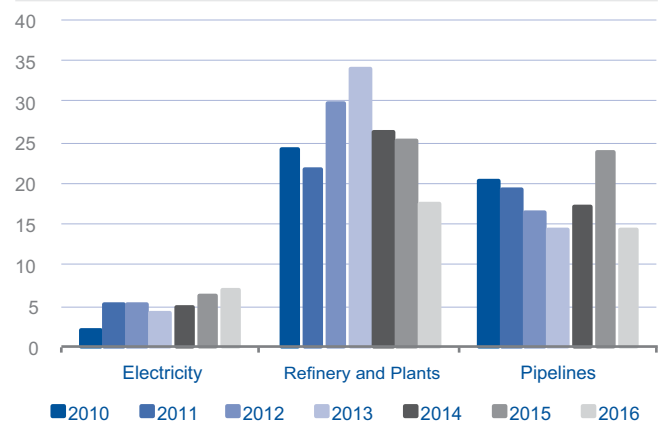
In the case of infrastructure projects for the energy sector, the constant drop in investment has led to a reconfiguration of the share of construction types based on their gross value. During the first five years of the present decade, refineries and oil plants contributed most of the value of construction. However, by the end of 2016, the construction of oil and gas pipelines had become the main energy infrastructure measured by this variable. This was partly driven by the higher demand for natural gas. Even so, the general trend for the overall value of energy infrastructure is also

Figure 3b.13 Gross value of energy infrastructure % share



Source: BBVA Research based on data from ENEC, INEGI

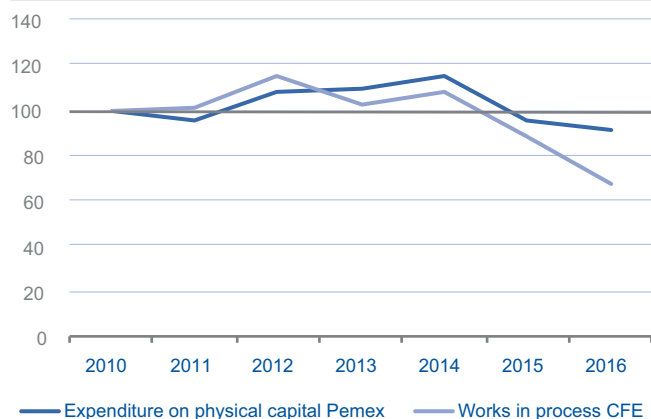
Figure 3b.14 Gross value of energy infrastructure Billions of constant pesos



Source: BBVA Research based on data from ENEC, INEGI

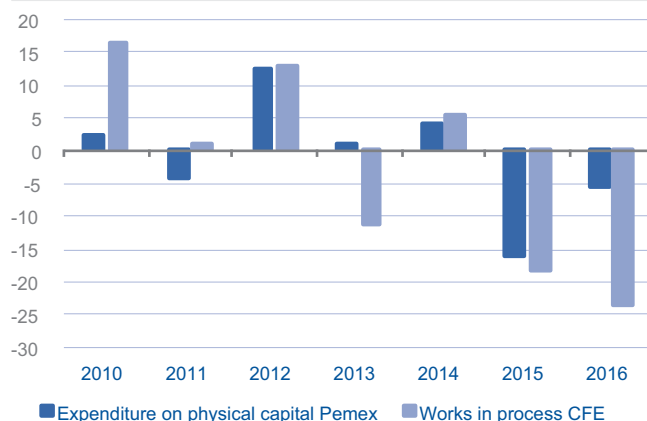
This result is explained to a great extent by lower investment by the main requesters of these projects. Petróleos Mexicanos and the Federal Electricity Commission have reduced the resources dedicated to infrastructure, as can be seen based on the amount of physical capital and the number of projects in progress. An index constructed with this information, whose base is 2010 for comparison purposes, indicates that no relevant growth was observed, and the result to 2016 was negative. In the same way, the growth rates for these investments were negative during the last two years. This trend could be maintained as a result of the greater participation of the private sector due to the energy reform, but the total amount directed to this infrastructure could reverse its negative trend as private investments begin to flow.

Figure 3b.15 Physical Capital and Work in Progress
Base 2010 = 100



Source: BBVA Research based on data from INEGI and CFE

Figure 3b.16 Physical Capital and Work in Progress
YoY % change



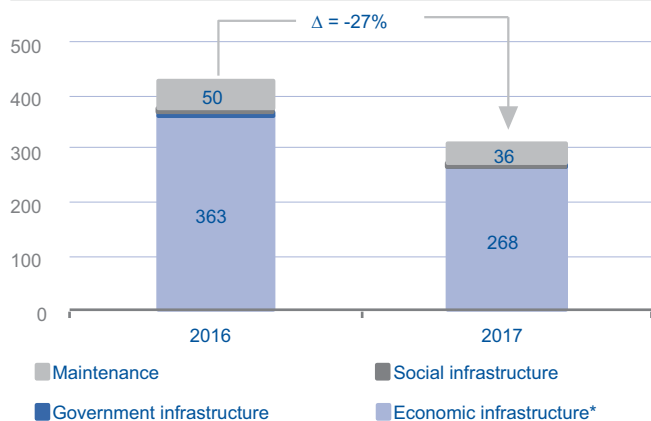
Source: Source: BBVA Research based on data from the CFE

In the short term civil engineering will continue without creating structure

The expectations for the recovery of civil engineering cannot be positive in the short term. The Federal Expenditure Budget further reduced the amount allocated to infrastructure. A reduction of 27% to the almost 450 billion pesos allocated in 2016 does not offer much scope for many projects. The existing pressure on public finances leaves no room for an early change in this trend. On the contrary, there is a latent probability of an even greater cut. Based on the 2017 Federal Budget, the states that will obtain greater resources, and therefore where economic activity is expected to increase, are first and foremost the State of Mexico with resources of almost 15 billion pesos, followed by Tabasco and Guanajuato with 10 billion and 7.6 billion pesos respectively. The states of Jalisco and Veracruz occupy the rest of the first five places with 7.6 billion and 6 billion pesos respectively. These infrastructure plans will be particularly relevant to the states whose state finances have not been able to push the construction of public works.

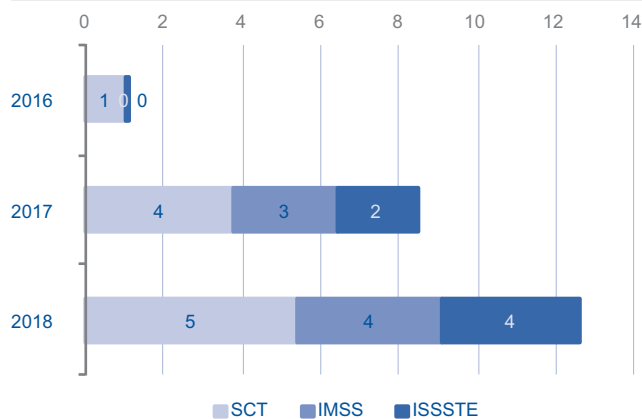
The alternative for the increasingly smaller participation of the public sector in infrastructure is precisely the private sector through entities such as Public Private Partnerships. The increase in these projects for 2017 is more than triple the previous year and almost 50% more for 2018, at least until now. Although for the time being it is not enough to compensate for the budget cut, the growing trend of these projects could be a viable option in the medium term for the recovery of civil engineering.

Figure 3b.17 Federal Expenditure Budget
Billions of constant pesos



Source: BBVA Research based on data from the SHCP

Figure 3b.18 Budget Public Private Partnerships
Billions of constant pesos



Source: BBVA Research based on data from the SHCP

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