

A photograph of a modern skyscraper with a roller coaster on top, set against a clear blue sky. The building has a sign that says "BBVA Bancomex". The roller coaster is green and yellow. The building is surrounded by a cityscape and mountains in the background.

BBVA Research

Mexico Regional Sectoral Outlook

Second half 2018

Mexico Unit



Creating Opportunities

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Closing date: **31 October 2018**

1. Summary

In the first half of 2018, the Mexican economy grew at a lower rate than expected, with the service sector contributing 86.9% of GDP growth, less than the 92.1% observed in 2017. Manufacturing industries recovered in 2017, contributing 11.8% of growth,¹ although uncertainty in the first half of the year affected their growth potential.

The sectoral situation shows manufacturing and trade as pillars of the Mexican economy. Additionally, we see that mining continues to decline as a proportion of total economic activity, with an estimated contraction for 2019 of 2.8%, and a trend that the energy reform has failed to reverse. Production of both hydrocarbons and other minerals has contracted; however, if the objectives of the government's new (and ambitious) energy policy are met, the hydrocarbon component could reverse the sectoral dynamics of recent years. On the other hand, we see the dynamic of the financial services and insurance sector, which has consistently grown at higher rates than the economy in recent years and in which insurance and pensions show greater penetration and substantial dynamism, contributing to an expected sectoral growth of more than 9% in 2019. Another sector with notable growth is that of mass media, with an expected growth of 7.6%, thanks in particular to its telecommunications component.

Next, the regional situation is presented with emphasis on manufacturing entities and their growth, with disparities still increasing in 2018. The growth rates predicted for 2018 have been adjusted downward for several states, the result of an environment of uncertainty that has been experienced both with the negotiation of the trade agreement with the US and Canada, and with federal elections in the first half of the year. Credit dynamics are analysed, with a commercial portfolio that remains healthy for most states, while foreign direct investment shows interregional disparities and high concentration. With regard to employment indicators, we see that so far this year efforts to shift the labour force into formal employment, while by no means lacking, show a parallel dynamic to that of GDP, with signs of movement in the opposite direction in various states.

A special section in this issue of ***Mexico Regional Sectoral Outlook*** is devoted to analysing the electricity generation, transmission and distribution subsector, which together with water and gas distribution represents 1.5% of GDP. The composition and evolution of the subsector are studied, emphasising its importance, despite its small share of GDP. We describe the situation, which has been influenced by increased prices of fuel - an essential input for most electricity-generating technologies - following the price liberalisation in 2017. In addition, we study the evolution of electricity generation and distribution and their composition by technology and tariff sector, respectively, as well as the income and expenses of the Federal Electricity Commission (CFE in its Spanish initials), the state-owned production company. Subsequently, we present the results of a model for analysing productive chains, both forwards and backwards, described by the input-output matrix. Likewise, the advantages in terms of stability of electricity generation through clean energies in the subsector are stated and a growth forecast of 2.6% is determined for the electricity, water and gas sector.

As a second special topic, we analyse the situation of the production of light vehicles for the greater part of the year, which has not been very encouraging, apart from the growth of exports, which continue to increase. Even so, the outlook for exports is not entirely encouraging. The US market is weakening and there is little optimism about the behaviour of its sales. In addition, the middle class, the main buyers of new vehicles in the US, is being cautious due to

¹: It should be noted that the sum of contributions to the growth of the services and manufacturing sectors may be greater than 100%, because some sectors, such as mining, made negative contributions.

higher interest rates. As regards the domestic market in Mexico, it will be negatively affected by higher interest rates and the high maintenance costs associated with ownership. This will lead some brands established in Mexico to adjust their manufacturing levels in the face of an external market with low growth and a declining domestic market. However, two new facilities (BMW and Toyota) will start producing vehicles in 2019, which could offset this situation.

Additionally, with a focus on the automotive sector, a third special topic is presented with the description and effects of the changes in the rules of origin in the "T-MEC" as it is known in Mexico (USMCA in the US), applied to light vehicles and auto parts, which may result in higher costs and inefficiencies for companies. The "Section 232" side letter and the non-originating car protection clause are also presented. In general, it is expected that in the medium term foreign direct investment by the industry in Mexico could increase in order to comply with the rules of origin of the new trade agreement, although in the long term, the cap of 2.4 million units on automotive exports from Mexico represents a disincentive to the expansion of investment in the country.

2. Sectoral and regional analysis

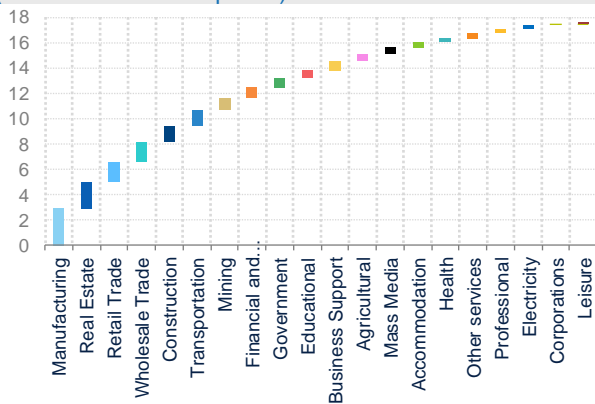
2.a Manufacturing and trade, pillars of the economy

Of the 2.1% growth in the economy, Retail Trade alone contributes 0.36%

In the nine months to the end of the third quarter of 2018 (3Q18), the Mexican economy grew by 2.1% based on INEGI (National Statistics Institute) figures. The sectors that contributed the most to the nearly MXN 18 billion of GDP were manufacturing, real estate services, trade, construction and transport, in that order. In terms of the growth rate, retail trade, manufacturing and financial and insurance services contributed the most. Retail trade contributed 0.36%,

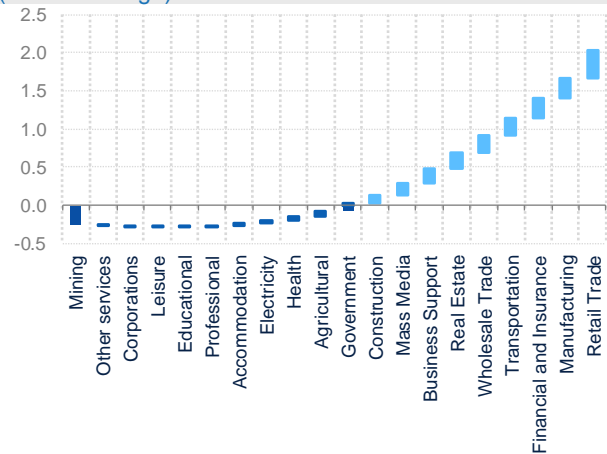
manufacturing 0.27% and financial and insurance services 0.25%. If we add the transport sector with 0.22%, we obtain more than 50% of the annual growth rate to the end of 3Q18. On the other hand, the mining sector continues to be the most negative with -0.25%, followed by other services and corporate services, the only ones with a negative contribution.

Figure 2a.1 YTD Sector GDP 3Q18 (Trillions of constant pesos)



Source: BBVA Research with data from the INEGI SCNM (National Accounts System)

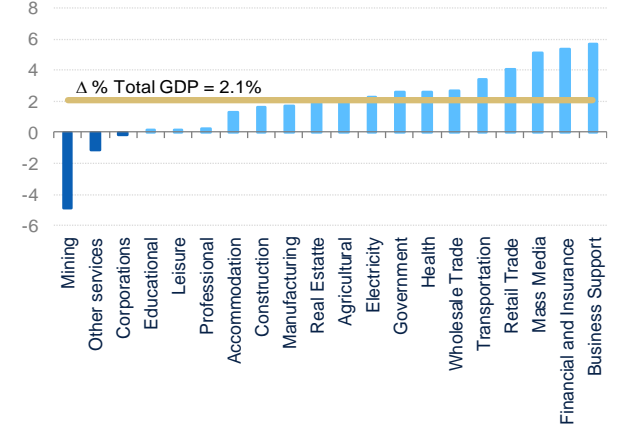
Figure 2a.2 Marginal contribution to 3Q18 GDP growth (YoY % change)



Source: BBVA Research with data from the INEGI SCNM

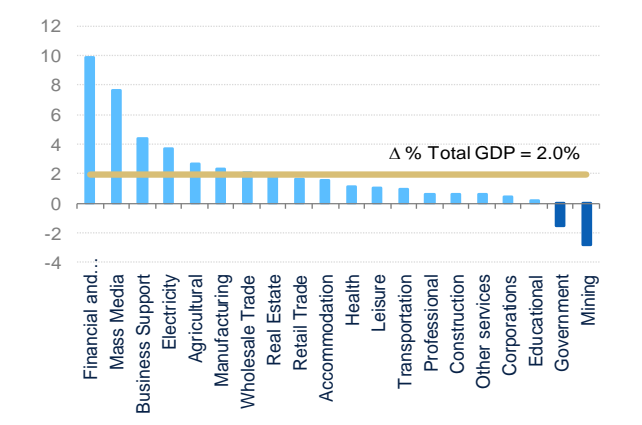
Of the total number of sectors, only three did not grow, as already mentioned. In terms of rate, business support, financial services and insurance, as well as mass media grew the most YTD 3Q18 with rates of 5.7%, 5.4% and 5.1% respectively. However, trade and manufacturing contributed more due to their greater weight in the Mexican economy. We estimate that in 2019 financial services could grow by more than 9%, followed by mass media with a rate of 7.6% and business support with 4.3%. In the following year only two sectors would not grow, legislative and government services and mining once again. The former would fall by 1.5% and mining by 2.8% (annual rates).

Figure 2a.3 YTD Sector GDP 3Q18 (YoY % change)



Source: BBVA Research with data from the ENOE (National Occupation and Employment Survey) and INEGI

Graph 2a.4 Sector GDP Forecast 2019 (YoY % change)



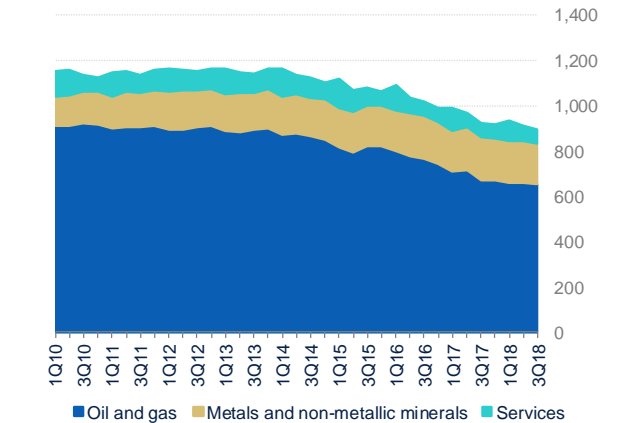
Source: BBVA Research with data from INEGI

These figures show some sectors with strong contrasts. Financial services and insurance, and mass media, have high growth rates, while mining continues to be the sector falling most. On other occasions, we have focused closely on the review of the mass media sector, so this time we will look at the contrast between mining and financial services.

Low production of hydrocarbons prevents mining from advancing

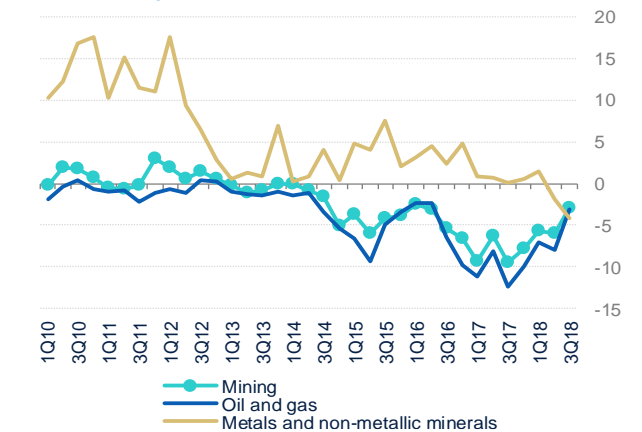
The mining sector has maintained a negative performance since the end of 2014, mainly due to a lower production of oil and gas as a consequence of the lower investment in infrastructure for this activity. However, by the second half of 2018, the extraction of metallic and non-metallic minerals, a component of mining that continued to grow in previous years, also began to decline. The oil and gas subsector contributes more than 70% of the sector GDP, so the recovery of the mining sector depends primarily on this activity. In other words, until we see a recovery in oil and gas production, mining will not see an increase in its GDP.

Figure 2a.5 Mining GDP (Billions of constant pesos)



Source: BBVA Research with data from the INEGI SCNM

Figure 2a.6 Mining GDP (YoY % change)



Source: BBVA Research with data from the INEGI SCNM

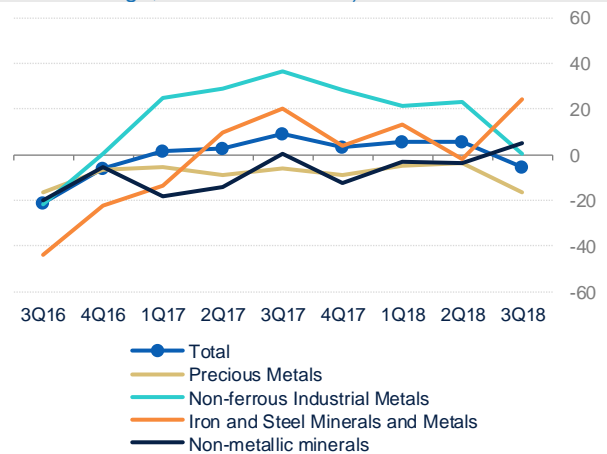
The extraction of minerals continued to rise until 2Q18, but already for the following quarter, we see a decrease in this production. Precious metals, gold and silver, as well as non-ferrous industrial metals are the most important contributors to this activity within the subsector. In the first case, production value in real terms has steadily declined over the past two years, while non-ferrous metals have performed remarkably well with high growth rates. However, during 2018 the latter group has slowed down significantly. Non-metallic minerals and iron and steel are currently growing, but their weight in the sector is smaller, so they will not be able to change the current trend.

Figure 2a.7 Production of minerals (Billions of constant pesos)



Source: BBVA Research with data from ENEC (National Construction Companies Survey), INEGI

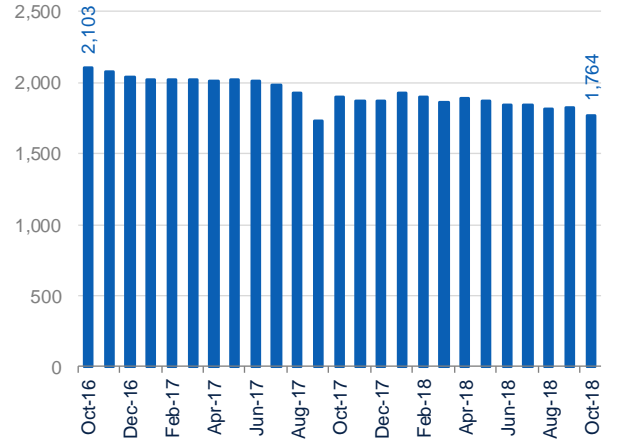
Figure 2a.8 Production of minerals (YoY % change, annualised series)



Source: BBVA Research with data from ENEC, INEGI

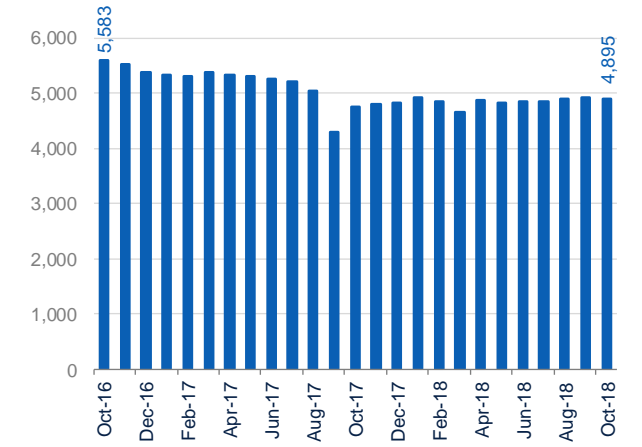
Oil production has been falling steadily for some years now. The energy reform was supposed to change this trend, but so far, it has not done so, for various reasons. In the last two years, the barrier of 2 million barrels per day (mbd) was broken, and currently extraction is around 1.8 mbd. In October 2018, there was a greater fall, to 1.7 mbd; but this is an exceptional figure due to a maintenance factor. Likewise, gas production continues to fall and it has been necessary to import more of this energy for domestic demand, which also affects the electricity sector. During the same analysis period, production fell by just over 500 million standard cubic feet per day (MMSCFD) from 5,583 MMSCFD in October 2016 to 4,895 in the same month of 2018.

Figure 2a.9 Oil
(Thousands of barrels per day)



Source: BBVA Research with data from INEGI

Figure 2a.10 Gas
(MMSCFD)



Source: BBVA Research with data from INEGI

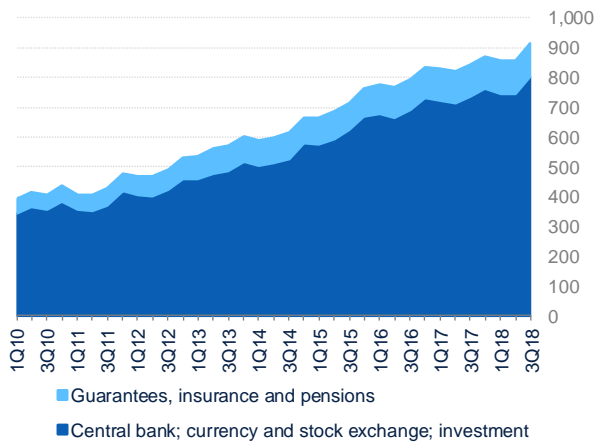
Financial and insurance services growing faster than the overall economy

YTD 3Q18, financial and insurance services grew by 8.5%

Except for 2Q11, the financial services and insurance sector has grown throughout the current decade. The YoY % changes of the GDP of this sector even exceed 10% on occasion; the current figure is 8.5%. Just over 85% of this sector's GDP comes from central banking, stock market and exchange activities and financial investment. This subsector already reached MXN 800 billion YTD 3Q18. The remainder comes from the insurance, bonds and pensions subsector, which has also been very dynamic during this review period, with

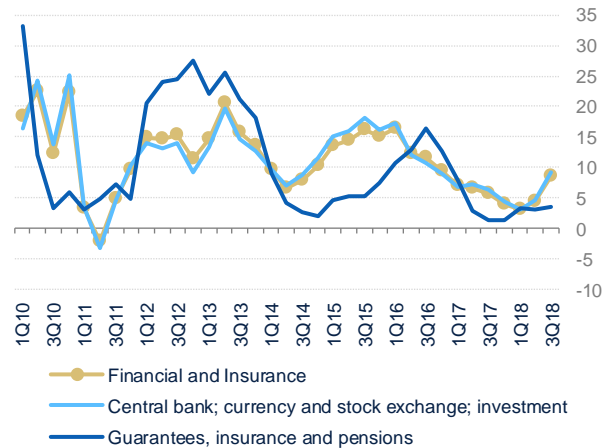
rates above 20% during 2012 and 2013 for example.

Figure 2a.11 Financial Services and Insurance GDP
(Billions of real pesos)



Source: BBVA Research with data from the INEGI SCNM

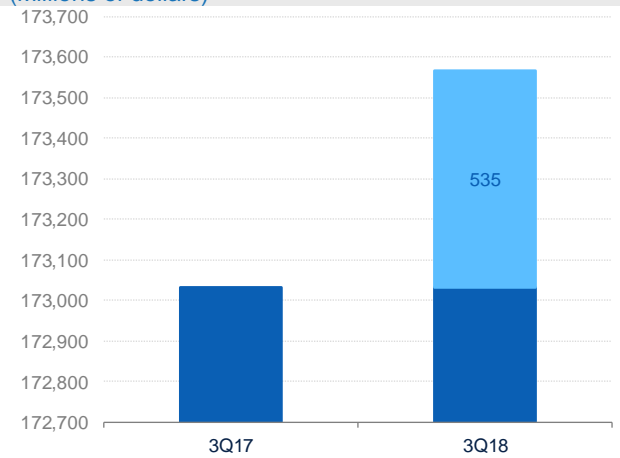
Figure 2a.12 Financial Services and Insurance GDP
(YoY % change)



Source: BBVA Research with data from the INEGI SCNM

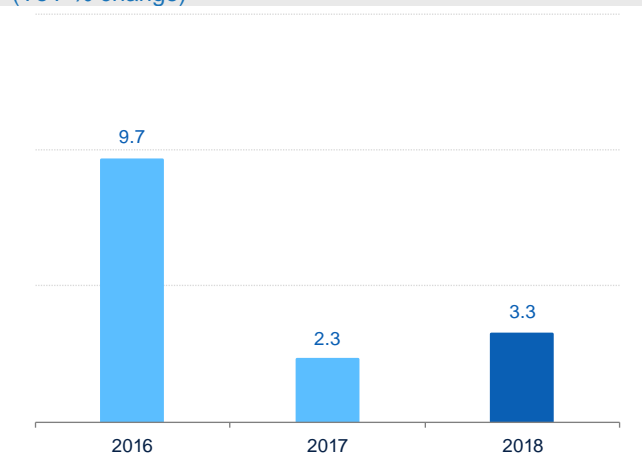
The analysis of the financial sector is very broad, so in this section we present just a few indicators to show why the sector is performing so well.² The first of these is last year's increase of more than US\$500 million in the balance of net international reserves, mostly explained by net flows of the Federal Government and Pemex. Another factor is that insurance penetration continues to advance. The growth of direct premiums in real terms reached a rate of 3.3% in the middle of 2018 (the date with the most recent official figures), a much higher rate than the growth of the economy as a whole.

Figure 2a.13 Balance of net international reserves (Millions of dollars)



Source: BBVA Research with data from Banco de México

Figure 2a.14 Insurance, direct premium (YoY % change)

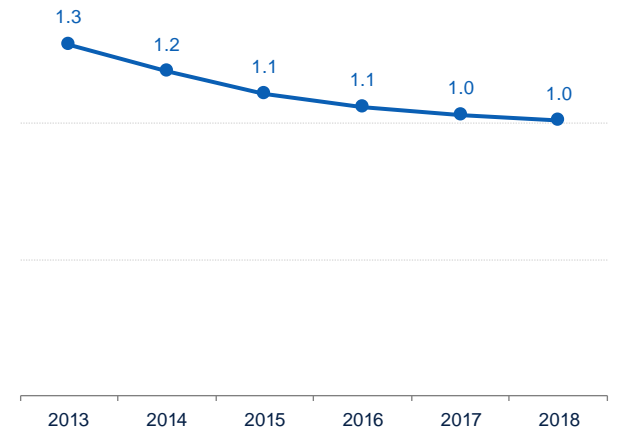


Source: BBVA Research with data from the CNSF (National Commission of Insurance and Bonds)

Apart from this, the pension system also shows signs of improved momentum. For example, voluntary retirement savings have increased substantially in recent years. From 2013 to mid-2018, just over MXN 55 billion were accumulated, while in previous years the total came to just MXN 13 billion. Another favourable feature of the pension system is the reduction in the commission on the balance that is charged to workers. In the same analysis period, the average commission went from 1.3% to 1.0%.

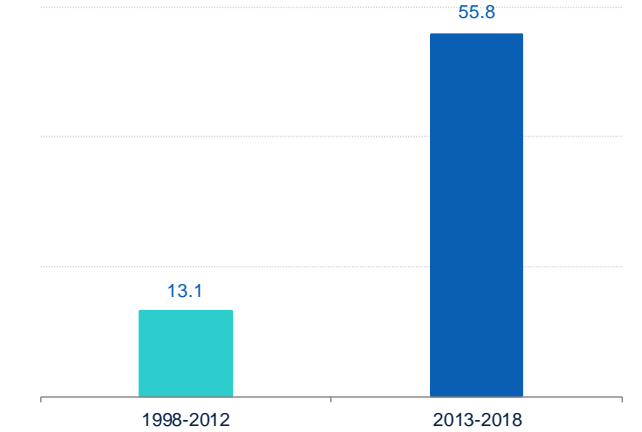
²: See Mexico Banking Outlook

Figure 2a.15 Commission on balance (Percentage)



Source: BBVA Research with data from CONSAR (Mexico's pension system regulator)

Figure 2a.16 Voluntary retirement savings (Billions of pesos)



Source: BBVA Research with data from CONSAR

Will energy policy reverse the trend in the mining sector?

3Q18 closed, and the full year is likely to close, without major changes in the sectoral distribution of the Mexican economy. Services are the most important contributors to the economy, and among secondary activities, manufacturing and construction are the only ones in leading positions. Mining, which used to be one of the strongest, has been relegated due to low hydrocarbon production, which mineral extraction is not enough to offset. Thanks to the export profile of manufacturing and the increase in US manufacturing activity, this sector continues to grow. Others, such as financial and insurance services, as well as mass media, also have sustained growth, the latter primarily due to its telecommunications component. In contrast, mining has not grown in several years and does not appear set to improve in the short term. The new energy policy is very ambitious and if it is implemented it could change the fate of the sector due to its hydrocarbon component in the long term. While energy self-sufficiency is desirable, the question is whether we want it to be clean and renewable energy or fossil energy.

2.b Sectoral forecasts

Table 2b.1 Mexico sectoral indicators and forecasts. Sectoral production base 2013 = 100, SWDA

											YoY % change	
	2016	2017	2018	2019	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Total GDP	2.7	2.3	1.9	2.0	2.1	1.6	2.6	1.5	1.0	2.0	2.2	2.6
Primary	3.5	3.1	1.9	2.6	2.9	1.7	2.3	0.8	-0.2	3.3	4.3	3.1
Secondary	0.2	-0.2	0.6	1.0	0.2	0.1	1.2	0.9	-0.2	0.7	1.5	2.1
Mining	-4.3	-8.2	-5.1	-2.8	-5.6	-6.1	-2.8	-5.7	-5.5	-2.2	-1.5	-2.0
Electricity, water and gas supply	0.1	-0.3	2.6	3.7	1.2	1.3	3.9	3.9	4.0	3.5	3.5	3.7
Construction	1.9	-0.9	1.2	0.6	2.4	1.2	0.9	0.3	-1.9	0.3	1.3	2.7
Manufacturing	1.3	3.2	1.8	2.4	1.1	1.6	2.3	2.1	2.4	2.3	2.0	2.8
Tertiary	3.7	3.3	2.6	2.4	2.8	2.3	3.3	1.8	1.7	2.5	2.5	2.8
Wholesale trade	1.9	4.5	2.2	2.1	5.0	1.4	1.7	0.7	0.8	2.8	1.7	2.9
Retail trade	2.8	3.5	3.5	1.6	5.2	1.3	5.7	1.8	0.2	2.4	1.7	2.2
Transport, mail and storage	2.7	4.7	2.6	1.0	3.7	2.8	3.9	0.1	-0.1	0.3	1.7	1.8
Mass media information	19.1	8.7	5.2	7.6	4.1	7.6	4.3	4.8	7.9	10.2	8.4	4.1
Financial and insurance services	12.2	5.8	6.5	9.9	3.1	4.7	8.3	9.7	11.5	10.8	7.6	9.8
Real estate & rental services	2.0	1.6	1.8	1.9	0.7	2.2	2.4	2.0	1.4	2.0	2.1	2.3
Prof., scientific & tech. services	8.2	0.4	0.0	0.6	-1.7	-1.4	3.3	-0.3	-1.0	-0.3	1.8	2.1
Corporate & business mgt.	-0.2	1.5	0.1	0.5	-2.5	1.1	0.7	1.0	1.4	-1.9	0.9	1.5
Business support services	4.2	5.9	5.5	4.3	4.6	7.3	5.5	4.8	5.0	3.9	3.8	4.7
Educational services	1.1	1.2	0.0	0.2	0.4	-0.5	0.6	-0.6	-0.6	0.2	0.7	0.5
Health and social services	2.8	1.3	2.2	1.1	2.4	2.1	3.3	0.9	1.0	1.5	1.1	1.0
Leisure, culture & sport services	3.9	2.1	0.1	1.1	0.4	-1.1	1.1	-0.2	0.3	1.3	1.2	1.4
Temp. accomm. & food & drink	3.6	4.1	1.1	1.5	2.7	0.7	0.6	0.6	0.7	1.4	1.9	2.2
Other services excl. gvt.	2.2	-0.2	-1.2	0.6	-1.3	-0.7	-1.4	-1.3	0.1	0.9	0.6	0.8
Government activities	0.1	0.2	1.6	-1.5	2.7	4.1	0.7	-0.9	-2.9	-4.0	0.1	0.9
	Structure, %				Contribution to growth, pp							
	2016	2017	2018	2019	2016	2017	2018	2019				
Total GDP	100.0	100.0	100.0	100.0	2.7	2.3	1.9	2.0				
Primary	3.2	3.2	3.2	3.2	0.1	0.1	0.1	0.1				
Secondary	30.4	29.7	29.3	29.0	0.1	0.0	0.2	0.3				
Mining	5.8	5.2	4.9	4.6	-0.3	-0.5	-0.3	-0.1				
Electricity, water and gas supply	1.5	1.5	1.5	1.5	0.0	0.0	0.0	0.1				
Construction	7.3	7.1	7.0	6.9	0.1	-0.1	0.1	0.0				
Manufacturing	15.8	15.9	15.9	15.9	0.2	0.5	0.3	0.4				
Tertiary	62.2	62.8	63.1	63.4	2.2	2.0	1.6	1.5				
Wholesale trade	8.2	8.4	8.4	8.4	0.2	0.4	0.2	0.2				
Retail trade	8.9	9.0	9.1	9.1	0.2	0.3	0.3	0.1				
Transport, mail and storage	6.3	6.5	6.5	6.4	0.2	0.3	0.2	0.1				
Mass media information	2.7	2.8	2.9	3.1	0.4	0.2	0.1	0.2				
Financial and insurance services	4.5	4.6	4.8	5.2	0.5	0.3	0.3	0.5				
Real estate and rental services	11.1	11.0	11.0	11.0	0.2	0.2	0.2	0.2				
Professional, scientific & technical serv.	2.0	2.0	1.9	1.9	0.2	0.0	0.0	0.0				
Corporate & business mgt.	0.6	0.6	0.6	0.5	0.0	0.0	0.0	0.0				
Business support services	3.4	3.5	3.7	3.7	0.1	0.2	0.2	0.2				
Educational services	3.8	3.8	3.7	3.6	0.0	0.0	0.0	0.0				
Health and social services	2.1	2.1	2.1	2.1	0.1	0.0	0.0	0.0				
Leisure, culture and sport services	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0				
Temp. accomm. & food & drink prep. serv.	2.2	2.3	2.2	2.2	0.1	0.1	0.0	0.0				
Other services excl. gvt. activities	2.0	2.0	1.9	1.9	0.0	0.0	0.0	0.0				
Government activities	3.9	3.9	3.9	3.7	0.0	0.0	0.1	-0.1				

All figures subject to review by the Institute; SWDA: seasonal and working-day adjustment; pp: percentage points
 Source: BBVA Research with INEGI data

Table 2b.2 Mexico sectoral indicators and forecasts, Manufacturing production base 2008 = 100, SWDA

	YoY % change											
	2016	2017	2018	2019	1Q18	2Q18	3Q18	4Q18	1Q19	2Q19	3Q19	4Q19
Total	1.3	3.2	1.8	2.4	1.1	1.6	2.3	2.1	2.4	2.3	2.0	2.8
Food	3.1	1.8	1.9	1.6	0.2	3.6	2.9	1.1	0.9	2.2	1.5	1.8
Beverages and tobacco	7.6	2.0	5.5	2.0	6.3	7.4	5.9	2.3	1.3	1.8	2.0	2.8
Textile inputs	-0.6	-0.8	1.8	-2.2	-2.1	4.1	3.0	2.3	-0.5	-3.9	-2.3	-2.3
Manufacture of textile products	3.2	-11.0	5.9	1.9	4.1	4.7	10.2	4.5	5.3	4.2	-2.1	0.7
Clothing	-1.4	0.5	0.9	-0.7	-1.9	2.5	0.1	2.8	0.7	-3.1	0.4	-0.6
Leather and fur products	-1.0	-1.3	-1.8	-1.6	-8.5	4.7	0.0	-3.0	3.6	-3.4	-5.1	-1.0
Timber industry	-4.6	4.7	-1.1	2.0	-1.9	-4.3	-2.1	4.1	0.7	3.9	1.5	1.7
Paper industry	4.1	2.1	1.4	3.4	-1.2	2.3	1.3	3.2	4.9	2.4	3.0	3.4
Printing and related industries	-0.1	-1.8	6.8	-0.4	7.2	15.4	1.9	3.0	-0.4	-5.5	2.0	2.7
Petroleum derivatives	-13.4	-18.7	-15.6	-0.6	-32.9	-18.3	-3.0	-1.6	-1.0	-1.2	-0.6	0.3
Chemicals	-3.1	-1.7	-0.7	-0.2	-2.8	0.4	-1.0	0.8	-1.7	-1.3	0.8	1.6
Plastic and rubber	-0.8	3.4	0.0	2.6	-4.9	2.2	3.2	-0.3	1.7	2.1	3.2	3.2
Non-metallic mineral products	0.2	2.4	1.5	0.8	1.4	2.3	1.9	0.4	-0.3	0.7	1.2	1.6
Basic metals	1.9	1.5	-0.9	1.3	-3.8	4.6	-1.6	-2.5	0.5	-2.1	3.2	3.9
Metal products	1.1	0.7	2.8	2.2	-1.8	7.4	1.9	4.1	2.4	1.1	2.9	2.3
Machinery and equipment	0.4	8.3	1.8	3.4	2.9	4.4	-3.3	3.4	3.6	3.1	3.3	3.5
Computers and electronics	6.7	6.9	3.5	4.5	3.6	3.3	3.8	3.4	2.7	3.9	5.1	6.2
Electrical equipment	4.0	1.0	1.8	3.3	-3.5	1.9	4.6	4.3	4.7	3.4	2.5	2.8
Transport equipment	0.9	8.3	4.2	4.7	1.7	4.7	4.8	5.5	7.1	6.4	1.9	3.8
Furniture and related	-3.8	-4.3	4.1	-1.6	1.7	7.6	6.1	1.4	-3.8	-0.6	-1.5	-0.4
Other manufacturing industries	11.0	6.1	-3.8	2.3	-3.5	-1.7	-2.2	-7.5	2.5	2.7	1.1	3.0

	Structure, %				Contribution to growth, pp			
	2016	2017	2018	2019	2016	2017	2018	2019
Total	100.0	100.0	100.0	100.0	1.3	3.2	1.8	2.4
Food	22.7	22.4	22.5	22.3	0.7	0.4	0.4	0.4
Beverages and tobacco	5.7	5.6	5.8	5.8	0.4	0.1	0.3	0.1
Textile inputs	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
Manufacture of textile products	0.5	0.4	0.5	0.5	0.0	-0.1	0.0	0.0
Clothing	2.1	2.1	2.0	2.0	0.0	0.0	0.0	0.0
Leather and fur products	0.8	0.8	0.8	0.7	0.0	0.0	0.0	0.0
Timber industry	0.9	0.9	0.9	0.9	0.0	0.0	0.0	0.0
Paper industry	1.8	1.8	1.8	1.8	0.1	0.0	0.0	0.1
Printing and related industries	0.7	0.6	0.7	0.6	0.0	0.0	0.0	0.0
Petroleum derivatives	2.1	1.7	1.4	1.4	-0.3	-0.4	-0.3	0.0
Chemicals	8.9	8.5	8.3	8.1	-0.3	-0.2	-0.1	0.0
Plastic and rubber	2.7	2.7	2.7	2.7	0.0	0.1	0.0	0.1
Non-metallic mineral products	2.6	2.6	2.6	2.5	0.0	0.1	0.0	0.0
Basic metals	6.7	6.6	6.4	6.3	0.1	0.1	-0.1	0.1
Metal products	3.5	3.4	3.5	3.5	0.0	0.0	0.1	0.1
Machinery and equipment	4.2	4.4	4.4	4.5	0.0	0.3	0.1	0.2
Computers and electronics	8.2	8.5	8.6	8.8	0.5	0.6	0.3	0.4
Electrical equipment	3.2	3.1	3.1	3.1	0.1	0.0	0.1	0.1
Transport equipment	18.7	19.6	20.1	20.5	0.2	1.6	0.8	1.0
Furniture and related	1.1	1.1	1.1	1.0	0.0	0.0	0.0	0.0
Other manufacturing industries	2.2	2.3	2.2	2.2	0.2	0.1	-0.1	0.1

All figures subject to review by the Institute; SWDA: seasonal and working-day adjustment; pp: percentage points
 Source: BBVA Research with INEGI data

2.c Slowdown in 2018, manufacturing entities growing faster than the average

During the first half of 2018, Mexico's economy went through a process of economic growth driven mainly by tertiary activities, while manufacturing contracted in the first quarter of 2018 (1Q18) and grew by only 1.3% in the second quarter (2Q18). The uncertainty surrounding the federal elections, as well as the renegotiation of the trade agreement with the United States and Canada, may explain much of this phenomenon. Domestic demand drove part of the growth, although in 1Q18 we observed a slowdown in private consumption, which seemed to pick up again in 2Q18, growing at a rate of 3.0%.

The inflation rate decreased during the first half of 2018 (1H18), with an average monthly year-on-year inflation of 4.9%, mitigating the fall in real wages observed in 2017. Additionally, a recovery in public consumption was observed at the national level, growing at an average rate of 2.0% in 1H18, while investment did so at 2.7%, after both components experienced a fall from the second to the fourth quarter of 2017. We also observed a reactivation of exports, with an annual growth of 8.3% in 2Q18, the highest rate observed since 1Q17. At the regional level, this growth represented a boost to the economy of exporting states and is largely due to the growth of demand in the United States.

At the same time, the dynamics of formal employment, growing at 4.3% in annual terms, resulted in a rise in consumption in the first half of the year and the average balance of credit to states presented a real growth rate of 5.0%, compared with 10.1% in 2017. Also, remittances saw growth of 6.6%, mitigating the effect of real wages on private consumption. After closing 2017 with a national growth of only 2%, a deceleration trend is forecast for 2018; this low growth is accompanied by disparities in growth among states.

The GDP of federal states in 2017 totalled MXN 17.35 trillion which, together with MXN 805.9 billion of net taxes, resulted in a total GDP of MXN 18.15 trillion.³ For 2017 and so far in 2018, the calculation of state GDP is based on the Quarterly Indicator of State Economic Activity (ITAE in the Spanish abbreviation). Although the estimated growth to the end of 2017 for the national gross value added (GVA) is 1.9%, we can see that production is still unevenly distributed, with the ten states with the lowest share accounting for barely 10% of economic activity. For 2018, total GVA growth is estimated at 2.1%.⁴

Outlook by States

In terms of gross value added, the high concentration of production at the national level has been maintained and CDMX (Mexico City) is the federal state with the largest economy in the country; CDMX, together with Estado de México, Nuevo León, Jalisco, Veracruz, Guanajuato and Coahuila, represent more than 50% of the sum of the states' GDP. As was already estimated in the last issue of *Mexico Regional Sectoral Outlook*, Campeche in 2017 lost its place among the first seven state economies, to close the year in eleventh place nationally, mainly due to the fall in oil extraction, which represents more than 80% of state GDP and in which Campeche participates with 57.8% of sector GDP. It is also estimated that a quarter of the state economies contracted in 2017; these states are (in descending order of fall in GDP): Campeche (-9.9%), Tabasco (-6.3%), Chiapas (-2.2%), Tlaxcala (-1.4%), Veracruz (-1.3%), Tamaulipas (-0.5%), Durango (-0.2%) and Hidalgo (-0.2%). According to these figures, we observe that the poor

³ The national GDP includes taxes net of subsidies, which cannot be allocated individually to the states.

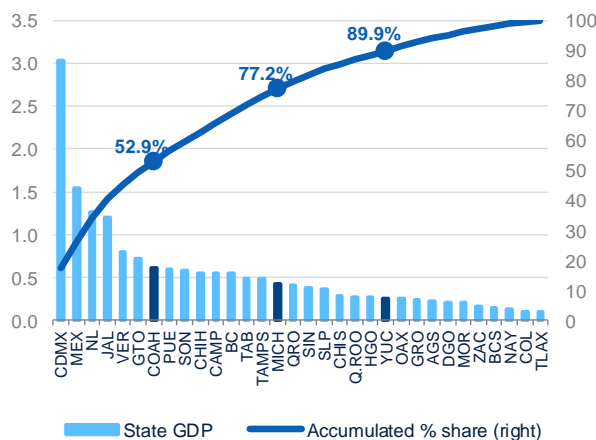
⁴ The figure differs from the forecast of total GDP growth in that it does not include the net taxes mentioned above.

performance of oil extraction also affected Tabasco, although to a lesser extent, due to a more diversified state economy, which attenuated the sectoral effect on the state.

In order to estimate state GDP in 2017, the Quarterly Indicator of State Economic Activity (ITAE), published by INEGI, was used as the basis. Baja California Sur led growth during 2017 with an annual advance of 12.4%, a rate surpassed in the last decade only by this same state with 13.3% in 2015 and by Coahuila, with 16.5% in 2010. Construction - especially private construction - is the main sector that drove the state's results. Additionally, Baja California Sur is expected to continue to lead growth in 2018, with an estimated growth of 11.8%.

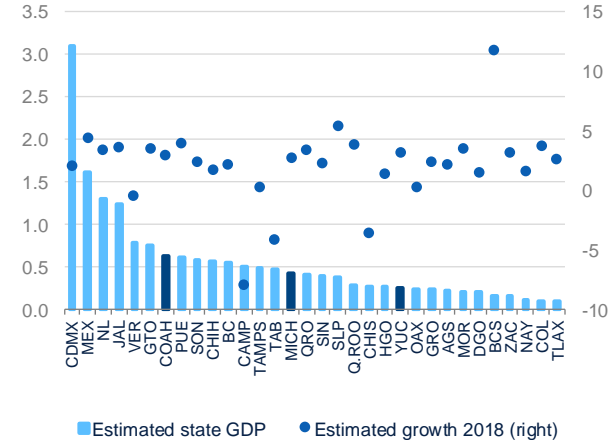
Puebla, with growth of 6.8%, Guanajuato, with growth of 5.4% and San Luis Potosí, with growth of 5.0%, occupy the second, third and fourth positions in terms of growth. A common characteristic of the three states is the dynamism of their manufacturing industries, especially the automotive industry with the opening of production lines for automobiles of various companies and the performance of the food industry in the case of Puebla. As mentioned above, the good performance of export manufacturing has been crucial for the positioning of these states as large producers at the national level. It is estimated that, of these three economies, only San Luis Potosí will present an acceleration of its economy in 2018, sustained by the average growth of 19.3% in manufacturing production in 1H18, due in part to the expansion of automotive plants and the increase in the production of auto parts in the state. In the case of Puebla and Guanajuato, growth will be lower than in 2017, but still above the growth of national GDP.

Figure 2c.1 State GDP 2017 (trillions of pesos and accumulated % share)



Source: BBVA Research with data from INEGI

Figure 2c.2 State GDP 2018 (trillions of pesos and YoY % change)



Source: BBVA Research with data from INEGI

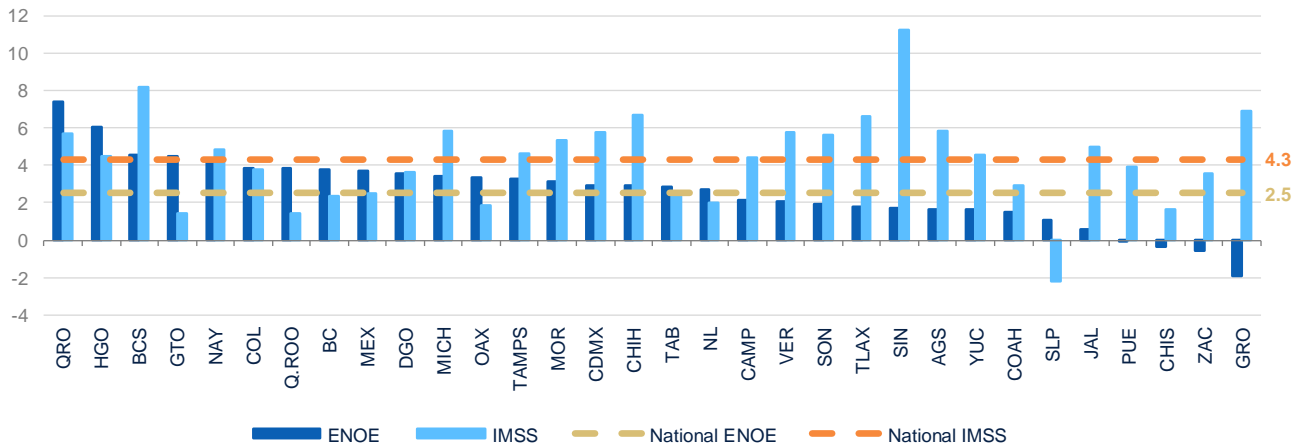
In order to have a comprehensive perspective of employment, data from the National Survey of Occupation and Employment carried out by INEGI were used.⁵ However, by comparing them with the IMSS (Mexican Social Security System) employment data, it is possible to analyse the behaviour of the informal labour market by state and at the national level. This can be seen in Figure 3. Employment has grown nationally at a rate of 2.5%; at the same time, formal employment has grown at a rate of 4.3%.

The former points to a formalisation of the labour force in 1H18, despite the fact that the phenomenon has not presented itself uniformly across regions. Querétaro, Hidalgo, Guanajuato, Quintana Roo, Baja California, Estado de

5: It should be noted that the IMSS figures reflect only a subset of employment: formal private employment.

Mexico, Oaxaca, Tabasco and Nuevo León and San Luis Potosí have presented a growth in employment that is greater than the growth in formal employment, along with a growth in total employment that is above the national average.

Figure 2c.3. Evolution of total (occupied workers, ENOE) and formal (total IMSS insured) employment by state 1H18 (YoY % change)

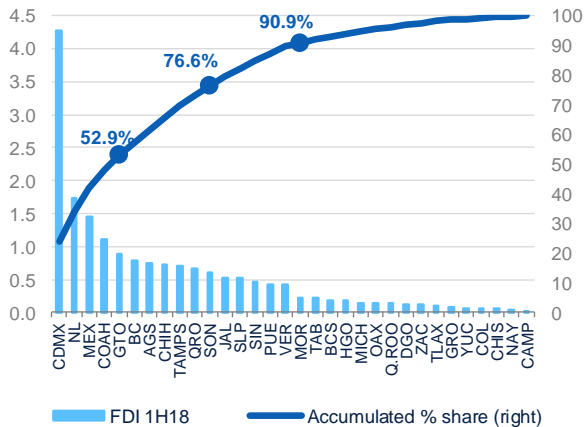


Source: BBVA Research with IMSS, ENOE and INEGI data

Also, now that NAFTA has been renegotiated, we expect the Bajío and Northwest regions of the country to benefit from the integration of their production in value chains with the USA, due to the clarification of the growth expectations of their main industries. The depreciation of the currency in the face of uncertainty about the adaptation process and the policies of the new administration could exacerbate regional disparities by increasing the volume of demand for Mexican agricultural, livestock and manufacturing products due to their relatively more competitive prices, while states based on trade and services would find their growth more affected in an inflationary scenario that led to a loss in purchasing power and a contraction of consumption in the domestic market.

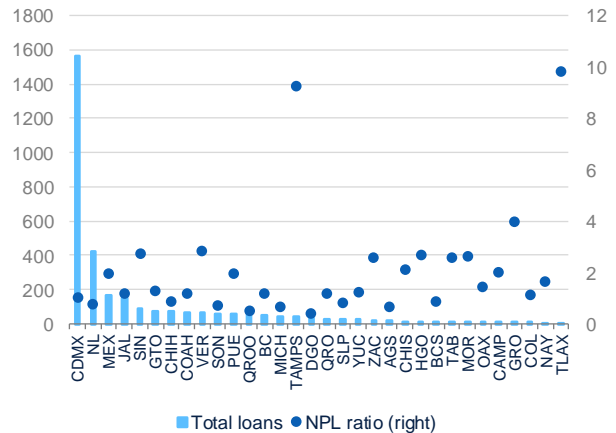
If we look at the dynamics of foreign direct investment (FDI), five states account for more than 50% of it: Mexico City, Nuevo León, Estado de Mexico, Coahuila and Guanajuato. In addition, Campeche has the lowest share of FDI at the national level. An additional phenomenon that reinforces our growth estimates is the distribution of FDI. Approximately 80% of it is concentrated in 15 states - the metropolitan area and the states more oriented towards manufacturing.

Figure 2c.4 Foreign Direct Investment (billions of dollars and accumulated % share)



Source: BBVA Research with data from INEGI

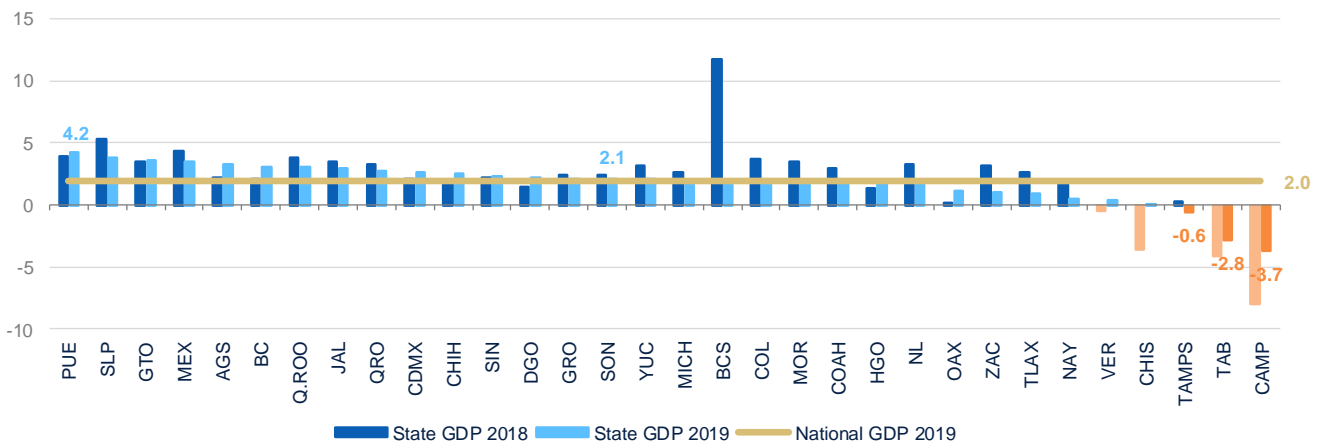
Figure 2c.5 Commercial banks: credit balance by state (billions of constant pesos and NPL ratio)



Source: BBVA Research with data from Banco de México

Analysing the commercial banking portfolio by state, CDMX continues to lead at the national level, with a commercial portfolio balance of MXN 1,633.9 billion at September 2018, representing 33.2% of the total balance of credit to states, which was MXN 4,924.3 billion.⁶ Nuevo León, Mexico and Jalisco rank second, third and fourth in balances, together with CDMX accumulating 48.6% of the balance. Regarding NPLs, Tamaulipas and Tlaxcala are the only states with an ratio higher than 4.0 (9.3 and 9.8, respectively), while the national average is 2.0, as can be seen in Figure 5.⁷

Figure 2c.6 Estimate of State GDP 2018 and 2019 (YoY % change)



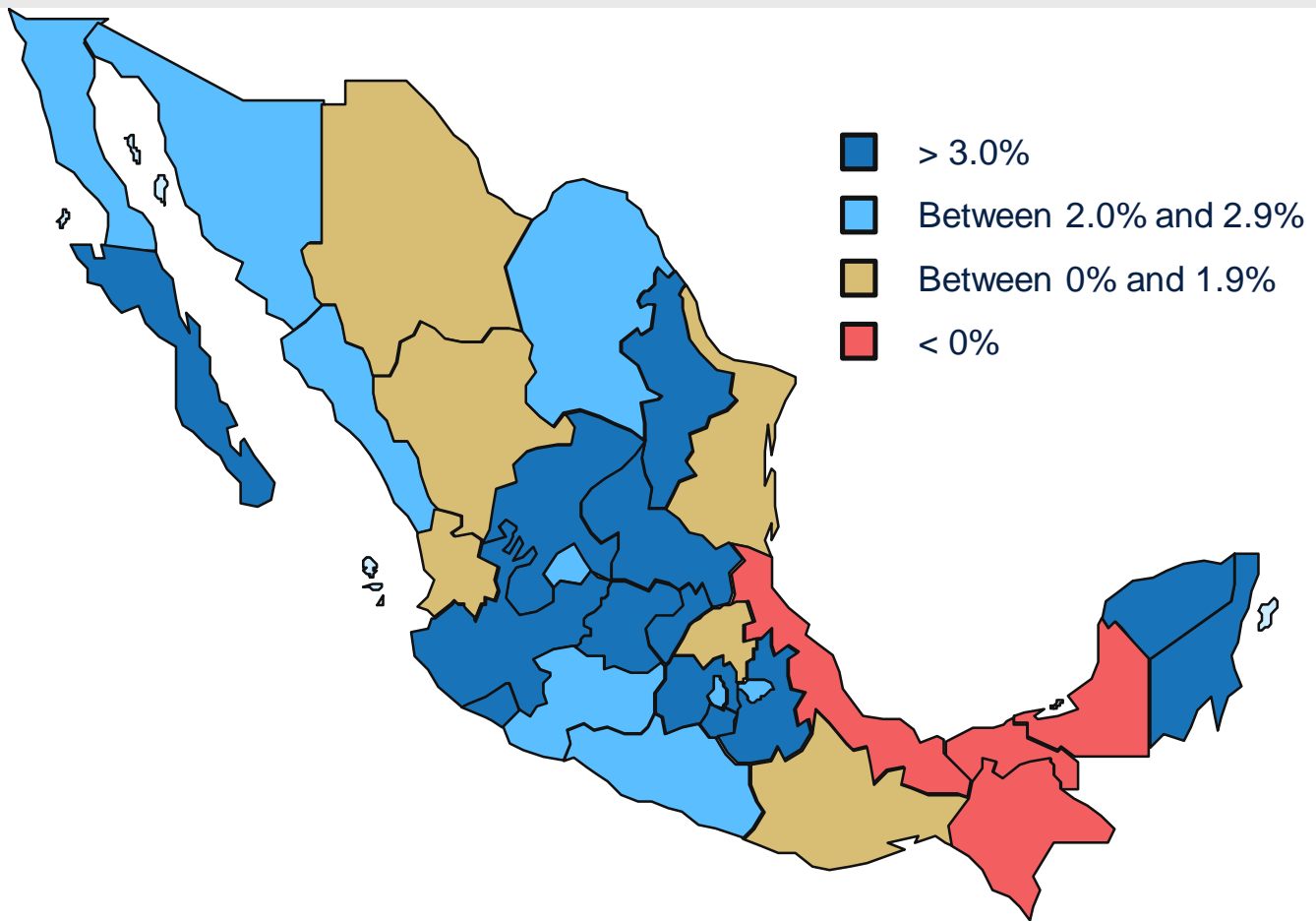
Source: BBVA Research with data from INEGI

6: Real September 2018 pesos

7: It should be noted that the previous indicator refers to the total portfolio including companies, the public sector and the financial sector; in other words, it corresponds to the actual balance of commercial credit by state.

It should be noted that state GDP for the second half of 2018 is based on an estimate using our own models (as opposed to state GDP for 2017 and 1H18, which is based on ITAEE data). The lower oil activity mainly affects Campeche and Tabasco, where an incipient acceleration of the primary sector and local trade could bring about a slight recovery. On the other hand, Puebla, Guanajuato and San Luis Potosí are likely to be three of the four states with the highest growth during 2018, with an industrial and export manufacturing focus, such as automotive, with higher expected growth rates now that the new trade agreement between Mexico, the United States and Canada has been signed. In first place we find Baja California Sur, with temporary housing services and food processing as the engine of the local economy. For 2019, a slightly higher growth than 2018 is expected at the national level, with a GDP growth rate of 2.0% and with three states - Tamaulipas, Tabasco and Campeche - still suffering the effect of the contraction in oil extraction, although with a smaller contraction than that experienced in 2018 in the case of Tabasco and Campeche. The highest growth rates for 2019 are estimated in Puebla (4.2%), San Luis Potosí (3.8%) and Guanajuato (3.6%), maintaining the trend of manufacturing as a driver of regional growth.

Figure 2c.7 Expected GDP growth of states in 2018



Source: BBVA Research, own estimates based on INEGI data

The landscape in Mexico has changed. On the one hand, the trade agreement between Mexico and the United States has entailed an increase in expectations for export production-intensive states, many of whose manufacturing systems are integrated into global value chains. Unlike the previous scenario, it is estimated that there will be a contraction in four states in 2018, and in only three of these in 2019. From a regional perspective, higher growth rates were observed in the north of the country, as well as in the regions of Bajío and Puebla, states located in manufacturing corridors that integrate national industry with the US and with the main marketing centres at national level. The exception would be Baja California Sur, which owes its growth mainly to hospitality services - temporary accommodation and food preparation - and which was consolidated in 2018, for the second consecutive year, as the state with the highest growth at the national level.

3. Topics for analysis

3.a Clean electricity: stable growth via linkages

The subsector of generation, transmission and distribution of electrical energy in Mexico has represented an average of 1.17% of the Gross Domestic Product (GDP) in the last decade, with a variation in its share from 1.01% in the fourth quarter of 2008 (4Q08) to 1.35% in the third quarter of 2014 (3Q14). Despite its small share in economic activity, when compared with sectors such as trade or manufacturing, the subsector constitutes an input for all other sectors at national level. The electricity subsector, in turn, represents 77.9% of the sector of generation, transmission and distribution of electrical energy, supply of water and gas through pipelines to the final consumer, and determines its dynamics, as can be seen in Figure 3. In turn, water and gas supply through pipelines together account for the remaining 22.1%.⁸ Electricity has become an indispensable input for the functioning of productive activities at national level and is the subject of constant debate as to its determining factors and uses. In addition, despite the existing substitution in electricity generation methods, electricity itself is an input that cannot be replaced by another in most productive activities, as will be evident throughout this article.

The structure of the national electricity market will be analysed from the supply and demand side. In terms of its structure, the characteristics of the subsector are studied, as well as its relationship with the water and gas subsectors and, subsequently, with the rest of the economy. Specifically, the input-output matrix is used to construct a measure of sectoral interdependence, which will make it possible to prioritise the indispensability of the sectors in the economy and to analyse the position of the electricity subsector in the overall map of national production. Specifically, an intersectoral propagation measure is presented to analyse the impact on the economy of changes in the supply of the electricity subsector, as well as the existing forward and backward linkages in the subsector.

In 2017, the sector presented a lack of dynamism, contracting by 0.4%, despite the growth observed in the sectors with demand for electricity.⁹ However, the contraction of real wages during the year would in part explain a contraction in final demand, which represents 22.1% of the uses of the electricity subsector, with 94.2% corresponding to private consumption and 5.8% to exports.¹⁰ On the supply side, the energy reform has mainly promoted private investment in electricity generation. Public and private investment affect the sector indirectly, with capital flows recorded in the GDP of the corresponding construction subsectors.¹¹ From a regional perspective, the GDP of the subsector is posted entirely in CDMX, mainly because it uses the records of the Federal Electricity Commission (CFE), the state producer.¹²

The analysis of the electricity subsector looks at the generation, transmission and distribution of electricity in Mexico. On the generation side, the various generation technologies are covered, as well as their effective capacity. This point is important in the face of a change in the economic paradigm regarding sustainability and it is crucial to talk about the dynamics of generation through renewable technologies, including technologies such as wind, solar and geothermal, which have won a share in electricity generation and which, as we shall see, represent an insurance policy against the volatility existing in the fossil fuel market.

8: Including the public and private sub-branches of water collection, treatment and supply.

9: Intermediate demand for electricity comes mainly from retail trade and manufacturing.

10: According to the input-output matrix 2013, INEGI.

11: As is the case with infrastructure, in the public works subsector of construction.

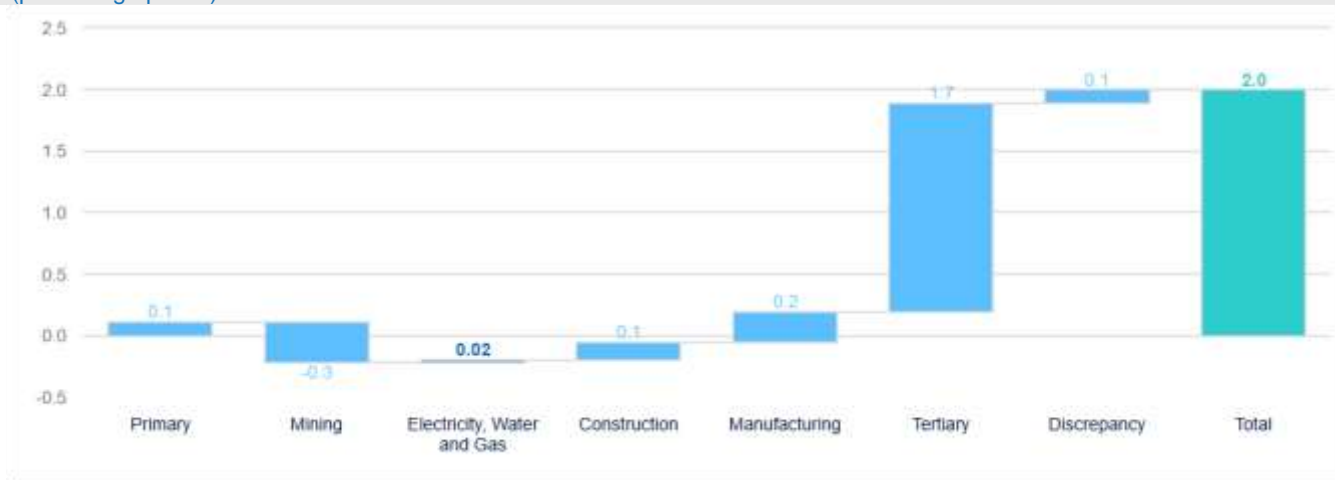
12: According to the input-output matrix 2013, INEGI.

On the transmission side, the characteristics of the national electricity grid and its transmission capacity are presented and the analysis of supply closes with the electricity distribution channels. With respect to this point, the net sales in each tariff sector and their cyclical dynamics are analysed, as well as the relationship with demand for electrical energy, either as an intermediate input or as a service to the final consumer.

The electricity subsector contracted by 0.4% in 2017

The activity of the electricity subsector fell by 0.4% in 2017, a contraction greater than was forecast given a GDP growth rate of 2.1%. In 1H18, within secondary activities, the generation, transmission and distribution of electricity, water and gas grew by 1.4% and represented approximately 1% of national GDP growth (contributing 0.02 of 1.9 percentage points) to the month of June, as shown in Figure 1. This low contribution does not make the effects of the subsector on growth very noticeable, due to the low share - in percentage terms - in the total of productive activities.

Figure 3a.1 Contribution to real (cumulative) GDP growth rate in 1H18 vs. 1H17 (percentage points)



Source: BBVA Research with data from INEGI

However, electricity represents an indispensable input for the functioning of the sectors with the highest share of GDP, such as manufacturing, construction, trade, and services in general. One of the objectives of this article is to develop a measure of interdependence between productive activities at the subsector level, thus obtaining a mapping of the forward and backward linkages of the electrical subsector, according to the complementarities described by the input-output matrix.

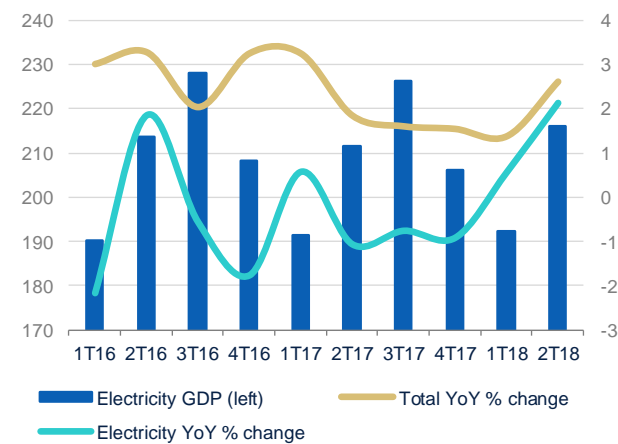
Note that manufacturing production, one of the main components of electricity demand, has recovered its growth rate, with growth of 2.8% in 2017, following a rate of 1.6% in 2016. In addition, wholesale and retail trade, another major component of electricity demand, experienced growth of 3.4%.¹³ Analysing the dynamics of the subsector, we observe that the changes in its growth rate behave in parallel with the variations of total GDP, albeit consistently growing at rates lower than those of the economy as a whole, as can be seen in Figure 2.

13: GDP in original figures, INEGI

In 2Q18, the recovery in national economic activity coincided with a reactivation of activity in the electricity subsector, as can be seen in Figure 2. This effect may be due to the increase in the productive activities that predominate in the composition of GDP and that use electricity as an input, generating greater demand and an increase in activity in the subsector, as well as to the lower average inflation observed in 1H18, which had an effect on real wages and final demand for electricity.

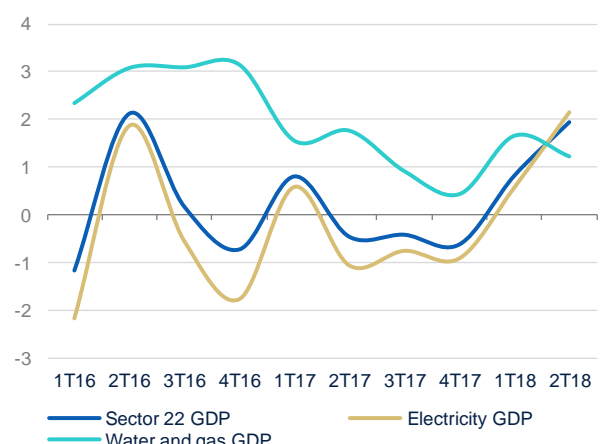
In addition, the electricity subsector, due to its large share in the electricity, water and gas generation, transmission and distribution sector, determines the sector momentum, as can be seen in Figure 3.

Figure 3a.2 Electricity GDP and Total GDP (billions of pesos and YoY % change)



Source: BBVA Research with data from INEGI

Figure 3a.3 GDP sector 22, electricity and water and gas (YoY % change)

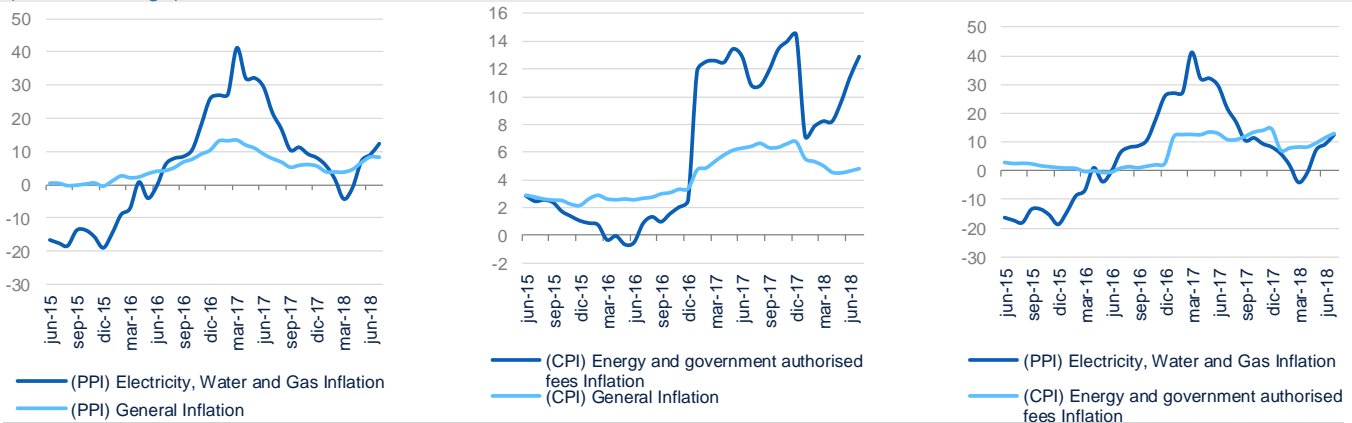


Source: BBVA Research with data from INEGI

As for prices, in 2017, energy prices and government-authorised tariffs experienced an average annual inflation of 12.6%, one of the highest among the components of the national Consumer Price Index (CPI) measured by object of expenditure¹⁴, as can be seen in Figures 5 and 6. The liberalisation of the price of gasoline and diesel had an effect on electricity generation costs, with an increase in the national Producer Price Index (PPI) of electricity, which presented an average annual inflation of 22.3%, as against 9.1% in the general index, as shown in Graph 4. Therefore, we observe that part of that increase in the price of subsector inputs was transferred to consumers, although to a lesser extent than the increase in producer prices.

14: The average annual inflation of the NCPI was 6.0%.

Figures 3a.4, 3a.5 and 3a.6 Electricity: producer and consumer prices and inflationary transfer (YoY % change)



Source: BBVA Research with data from INEGI

If we consider the existing technology for electricity generation, we can conclude that the demand for fuel by the electricity industry is inelastic because, in the short term, there is no substitution between inputs within each form of generation.

In the electricity market, an increase in the price of inputs leads to a contraction of supply. Therefore, the lower inflation in consumer electricity prices relative to input inflation, coupled with the relative inelasticity of demand for electricity, leads us to infer an even more inelastic electricity supply than demand.¹⁵

This inference stems from the fact that the contraction of supply leads to a lower rise in equilibrium prices, as long as demand is relatively more elastic. This assertion is consistent with the existence of an installed electricity generation capacity, which determines the maximum amount of electricity that can be produced per time unit and, therefore, determines the supply of electricity with relative rigidity.

An immediate conclusion is the importance of changing the technological composition of electricity generation towards renewable sources. Thermoelectric energy, with the largest share, depends on fossil fuels and therefore its cost structure is highly sensitive to fluctuations in fossil fuel prices. Geothermal, nuclear, wind, hydro and photovoltaic technologies still have a low share of electricity generation and, therefore, the sector in general relies heavily on fuels as inputs, mainly fuel oil, diesel and natural gas. The greater share by clean or renewable energies in electricity generation is one of the goals established in the Energy Transition Law (LTE), aiming at a generation of electricity through clean energies of 25% by 2018, 30% by 2021 and 35% by 2024.

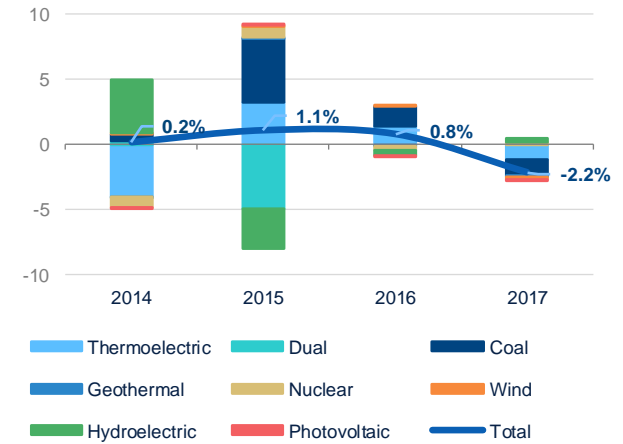
Clean energy: less volatility and dependence on fuels

With regard to electricity generation infrastructure, the new administration has declared that it will modernise the existing infrastructure, including hydroelectric plants. This technology has the largest share of “clean” or renewable

15: Consistent with the study by Galetovic and Muñoz, 2010.

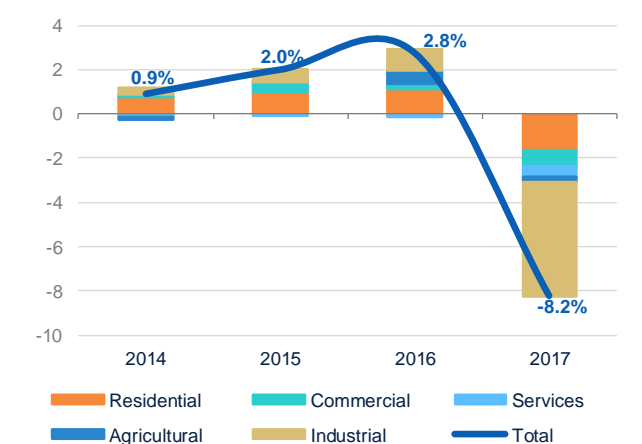
energies, with approximately 11.7% of generation in 2017. The development of this modernisation project involves an investment of MXN 20 billion in 2019 alone.¹⁶

Figure 3a.7 Gross generation by type of technology (contributions and YoY % change)



Source: BBVA Research with data from SENER (Secretariat of Energy)

Figure 3a.8 Distribution: sales by tariff sector (contributions and YoY % change)



Source: BBVA Research with data from SENER

As can be seen in Figure 8, the contraction in total sales by tariff sector occurred in the residential, commercial, service, agricultural and industrial sectors. However, we note that the largest contribution to this contraction in total sales occurred in the industrial tariff sector. Consequently, we can attribute part of the low performance of the electricity subsector to electricity distribution activities, as well as to the lower dynamism in electricity generation, which contracted by 2.2% in 2017, as we can see in Figure 7.

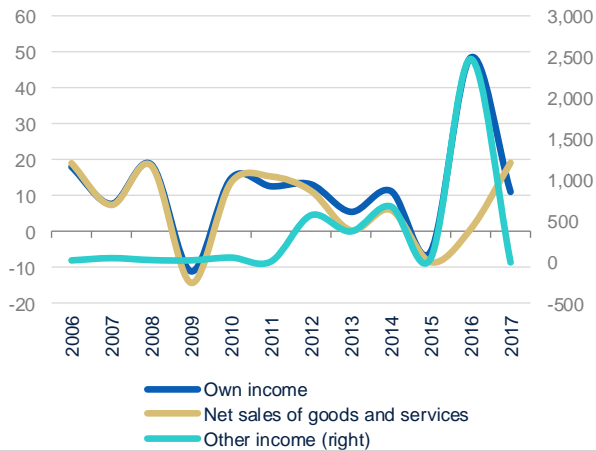
Electricity generation and distribution contracted in 2017

If we analyse the revenues of the CFE, we can see that net sales of goods and services recovered in 2017 and the same has been happening since 3Q18, after a half-year of sales contraction. However, the second component of the CFE's own revenues - miscellaneous revenues - presented an extraordinary growth rate in February 2018, mainly as a result of the launch of an energy and infrastructure investment trust specialising in the energy sector in Mexico (FIBRA-E) on 7 February, after having been in negative territory during 2017, as can be seen in Figure 9.

On the expenditure side, we can observe a significant slowdown in the consumption of natural gas, fuel oil and diesel, perhaps resulting from the rise in prices mentioned above. Coal consumption remained practically constant, as can be seen in Figure 10. Returning to the argument of the dependence of the electricity subsector on fossil fuels for electricity generation, it is necessary to note that the inflation seen in 2017, especially in the electricity PPI, was accompanied by a lower intermediate consumption of fuels by the subsector. The fall in generation observed in Figure 7 would have been mitigated if the share of clean energy in generation had been greater, since the price of fossil fuels would have had a lesser impact on electricity generation costs.

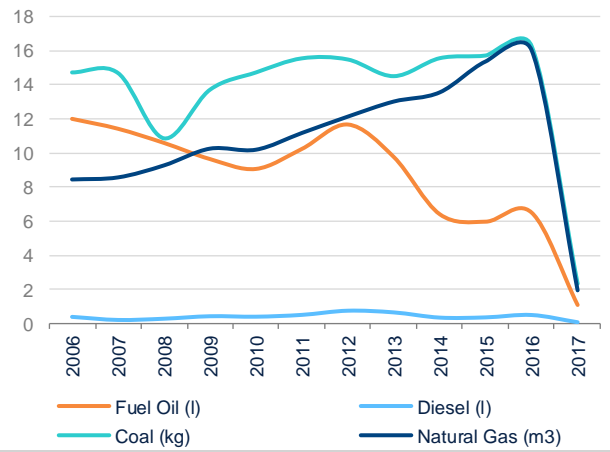
16: According to statements by the new administration posted on the website *energiahoy* on 27 July 2018.

Figure 3a.9 CFE revenues (YoY % change)



Source: BBVA Research with data from the SHCP (Secretariat of Finance and Public Credit)

Figure 3a.10 Consumption for electricity generation (billions of litres, kilos and cubic metres)



Source: BBVA Research with data from SENER

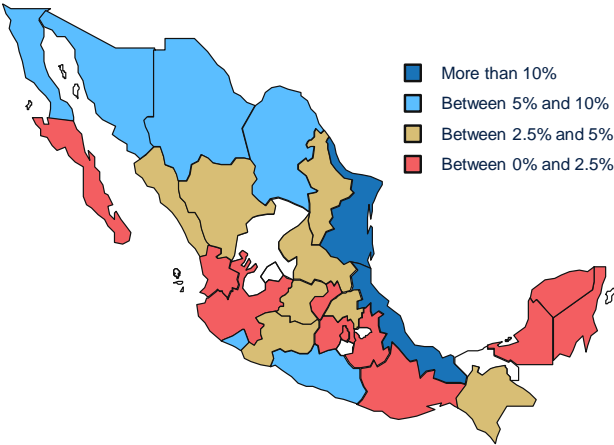
High regional concentration in generation and investment in transmission

The states with the highest volume of electricity generation are Veracruz and Tamaulipas, with 13.1% and 12.1% of total generation. From third to eighth position are Guerrero (7.7%), Colima (5.6%), Coahuila (5.6%), Chihuahua (5.6%), Sonora (5.2%) and Baja California (4.7%), with these eight states concentrating 59.6% of national electricity generation, as can be seen in Figure 11.

In the case of the share of electricity sales by state, we observe a correlation of 0.9 with the share of GDP. This correlation is a clear result of the use of electricity as an input in productive activities. Specifically, manufacturing, trade and construction are sectors with a GDP share of approximately 40% and are electricity-intensive.¹⁷

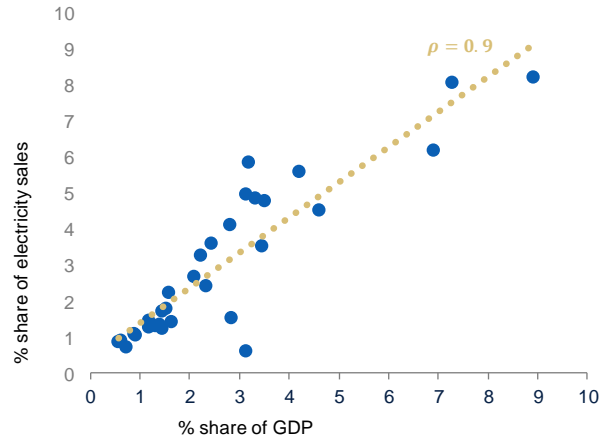
17: According to data from the input-output matrix 2013, INEGI.

Figure 3a.11 Generation by state 2017 (% share)



Source: BBVA Research with data from SENER

Figure 3a.12 State GDP and electricity sales, 2017 (% share)



Source: BBVA Research with data from SENER

In the case of electricity transmission, the third component of the electricity subsector, in 2018 the CFE launched the trust fund for investment in energy and infrastructure specialising in the energy sector in Mexico (FIBRA-E) which issued trust certificates for investment in energy and infrastructure, acquiring 6.8% of the collection rights of CFE Transmisión. The issue raised MXN 16.21 billion.

The main objective of the FIBRA-E is to raise resources for the modernisation of the national electricity transmission network, as shown in Figure 13. With data from the CFE as of the third quarter of 2017 (3Q17), the transmission network had a length of 107,000 kilometres of transmission and sub-transmission lines of various voltages, complemented with interconnections to foreign electric systems.

Figure 3a.13 Transmission regions of the national electricity grid by load capacity



Source: PRODESEN (National Electricity System Development Programme) 2017-2030

Electricity: small subsector with large interlinkages

In a study by Japan’s Ministry of Communication and Home Affairs¹⁸, two measures are calculated to index the linkages existing in the productive activities of an economy, both backwards and forwards, based on the national input-output matrix. In accordance with the methodologies described for the analysis, in the case of Mexico, we chose the model with endogenous imports, in which the effect of imports is controlled in order to analyse the input-output relationships that exist among the different components of intermediate demand in an economy.

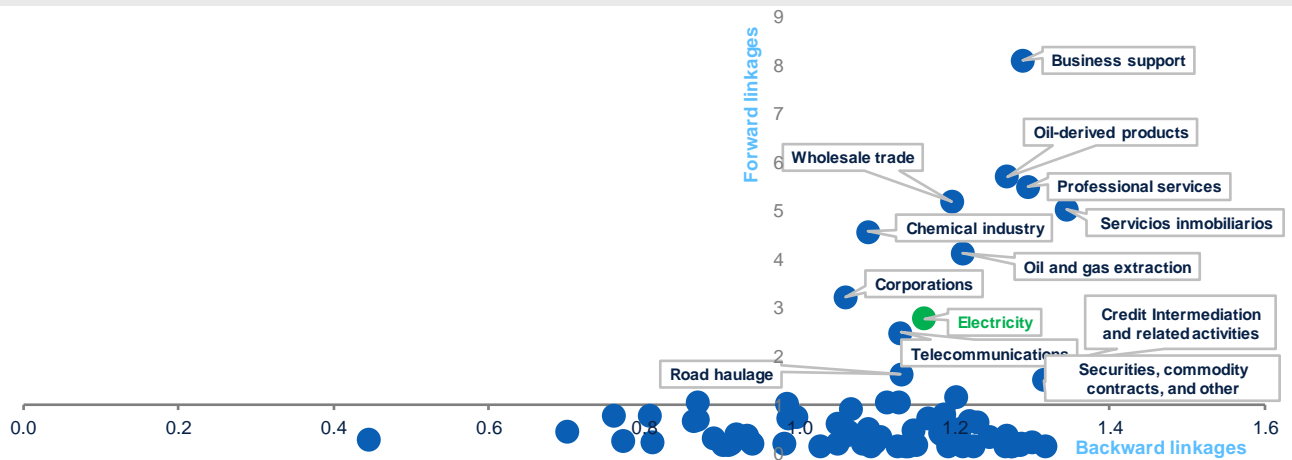
Productive linkages are also defined as the power of dispersion (backward linkages) and sensitivity of dispersion (forward linkages). In the case of the electricity subsector in Mexico, the power and sensitivity of dispersion indices were calculated based on the 2013 input-output matrix and on the analysis carried out at the subsector level of the North American Industry Classification System (NAICS).

18: The Japanese Economy and the 2005 Input – Output Tables.

In addition, it was considered necessary to put the resulting indices into perspective in order to analyse the linkages presented relative to the size of the subsector. The main results are summarised in Figure 14 and Tables 1 and 2 below:

The results of the exercise are summarised in the following tables:

Figure 3a.14 Production linkages (forwards and backwards)



Source: BBVA Research based on data from INEGI

Table 3a.1 Production linkages by subsector (power and sensitivity of dispersion)

Activity	Power of dispersion (backwards)	Sensitivity of dispersion (backwards)
Agriculture	1.09	0.49
Oil and gas extraction	1.21	4.12
Electricity	1.16	2.77
Water and Gas	1.17	0.71
Petroleum derivatives	1.27	5.70
Chemical industry	1.09	4.56
Wholesale trade	1.20	5.18
Professional services	1.30	5.50
Corporate	1.06	3.21
Business support	1.29	8.09

Source: BBVA Research with data from INEGI

Table 3a.2 Value added by subsector (billions of pesos and percentage of GDP)

Activity	GDP 2017 (billions of pesos)	Share in GDP (%)
Agriculture	365.3	2.0
Oil and gas extraction	692.2	3.8
Electricity	208.1	1.1
Water and Gas	59.5	0.3
Petroleum derivatives	48.9	0.3
Chemical industry	244.6	1.3
Wholesale trade	1,524.6	8.4
Professional services	356.5	2.0
Corporate	102.4	0.6
Business support	643.9	3.5

Source: BBVA Research with data from INEGI

Despite the size of the electrical subsector, we observe strong linkages in production. In considering the linkages relative to the size of the subsector, we need to reaffirm the importance of electricity as an input for economic activity.

There are sectors, such as professional services, the chemical industry, the petroleum derivatives industry and wholesale trade, among others, that also present strong productive linkages according to the power and sensitivity of dispersion index; however, we observe that there are only a few that would surpass the electricity subsector if it were standardised by subsector size, as described in Tables 1 and 2.

Therefore, it can be concluded that the linkages of the electricity subsector are among the highest at the national level and that each change in the value generated in the subsector affects the performance of the economy as a whole.

Greater employment in electricity, water and gas, with less underemployment

As a result of the sectoral contraction in recent years, employment has declined in parallel. However, the underemployed¹⁹ population shows significant contractions, even to a greater extent than total employment, pointing to a positive effect of formalisation programmes, according to data from the ENOE,²⁰ reflecting a reduction in the percentage of the population in this employment situation within the sector. On the other hand, we see that in 2017 and so far in 2018, the underemployed population compensates the lack of employment, generally, as is evident from the growth in underemployment observed in 2Q17.

Within the activity in the electricity subsector, the main inputs are: labour, plant, and raw material corresponding to the type of generation technology, on the part of the generating plants; electrical conduction infrastructure and labour for transmission; and labour and distributive electrical installations - wiring, meters, etc. - for distribution. Infrastructure, as in other sectors with network economies, represents a fixed cost that defines the capacity to provide electricity in a given period and is specific to each form of electricity generation. The degree of substitution among production factors is lower when there are strong complementarities and, therefore, infrastructure and raw materials largely define the labour force required in the subsector.

With respect to the sector in general, the labour force required - both in absolute terms and standardised by the value of production - is lower in the electricity subsector than in the water and gas subsector, according to the INEGI's 2013 input-output matrix.

The electricity, water and gas sector will grow by 2.6% in 2018

In conclusion, we can say that, faced with an electricity subsector strongly linked to national production and with a very high dispersion per unit of value recorded in it, having an efficient transmission and distribution network is a necessary condition for the consolidation of the growth of the economy as a whole. With respect to electricity generation, the shift to clean energy would promote less dependence on fossil fuels, as well as less exposure to fluctuations in their prices.

Investment in electricity infrastructure, as well as in new forms of electricity generation, would therefore be necessary ingredients both for greater economic growth and for relative stability in price dynamics and production value in the subsector and in the productive activities that depend on it. This stability, in turn, would constitute the second component of a virtuous circle, since it would be favourable to investment.

19: The underemployed population is the employed population that has the need and availability to offer more work time than their current occupation allows them.
20: National Survey of Occupation and Employment

It is estimated that the electricity, water and gas sector will grow 2.6% in 2018, more than the estimated rate of growth for the economy as a whole, and that, since the composition of the sector is historically constant, the share of the electricity subsector in GDP will remain constant.

References

- Caraballo, M. and García, J. (2017). Energías renovables y desarrollo económico. Un análisis para España y las grandes economías europeas. (Renewable Energy and Economic Development. An Analysis for Spain and the Major European Economies) *El Trimestre Económico*, vol. 84(3), no. 335. CDMX.
- Centre for Economic Studies in the Construction Sector (2017). Analysis of the impact of the price of Gasoline and Diesel on the Construction Industry. CEESCO, p. 8.
- CFE Capital (2018). CFE Fibra-E, at <http://cfecapital.com.mx/cfe-fibra-e/>
- Galetovic, A. and Muñoz, C. (2010). La elasticidad de la demanda por electricidad y la política energética. (The elasticity of electricity demand and energy policy.) *El Trimestre Económico*, vol. 77, no. 306. CDMX.
- Ministry of Foreign Affairs of Japan (2009). Chapter IV: Coefficients for Input-Output Analysis and Computation Tables, *The Japanese Economy and the 2005 Input-Output Tables*.
- Pulso Energético (2018). The energy opening is a great opportunity for Baja California, home of the presidential debate, <https://pulsoenergetico.org/la-apertura-energetica-es-una-gran-oportunidad-para-baja-california/>
- energíahoy (editorial staff) (2018). AMLO anuncia inversiones por 175 mil mdp para sector energético para 2019 (AMLO announces investments for MXN 175 billion for energy sector for 2019), <http://energiahoy.com/2018/07/27/amlo-anuncia-inversiones-por-175-mil-mdp-para-sector-energetico-para-2019/>
- García, K. (2018). Proyecta nueva administración 125 hidroeléctricas (The new administration plans 125 new hydroelectric plants), *El Economista*, <https://www.eleconomista.com.mx/empresas/Proyecta-nueva-administracion-125-hidroelectricas-20180710-0022.html>
- INEGI (2014). Economic Census 2014.
- INEGI (2014). Input-Output Matrix 2013.
- Department of Energy (2017). Prospectiva del Sector Eléctrico 2017-2031 (Outlook for the Electricity Sector 2017-2031), https://www.gob.mx/cms/uploads/attachment/file/284345/Prospectiva_del_Sector_El_ctrico_2017.pdf
- Department of Energy (2017). Reporte de Avance de Energías Limpias 2017 (Advance Report on Clean Energy 2017), https://www.gob.mx/cms/uploads/attachment/file/354379/Reporte_de_Avance_de_Energ_as_Limpas_Cierre_2017.pdf
- Ministry of the Interior (2013). National Development Plan 2013-2018, *Diario Oficial de la Federación*, 20 May 2013.
- Ministry of Finance and Public Credit (2018). Public Accounts 2017: Análisis del Ejercicio del Presupuesto de Egresos Comisión Federal de Electricidad (Analysis of the Expenditure Budget of the Federal Electricity Commission), https://www.cuentapublica.hacienda.gob.mx/work/models/CP/2017/tomo/VIII/Print.TVV.03.AEPE_A.pdf
- Zenón, E. and Rosellón, J. (2017). Optimal transmission planning under the Mexican new electricity market. *Energy Policy*, vol. 104, May 2017, pp. 349-360.

3.b The light vehicle industry in Mexico, with changes that will define its future

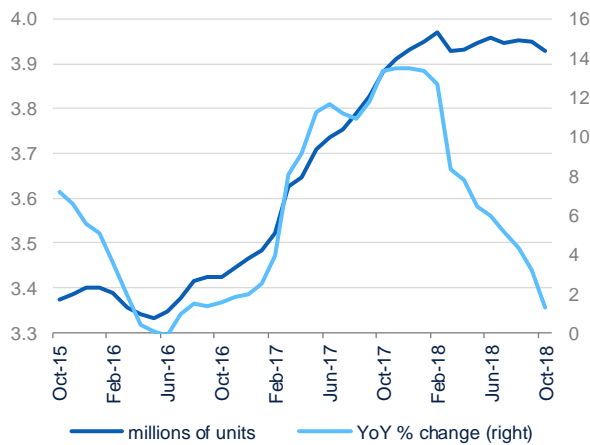
Introduction

This article will review the recent evolution of Mexico’s light automotive industry. The automotive industry in Mexico - composed of the production of light vehicles, heavy vehicles and auto parts - accounts for a large share in the economy (3.7% of GDP in 2017) and from January to October 2018 its exports were worth US\$118 billion, equivalent to 32% of total exports.

Changing consumer preferences and a declining domestic market affect light vehicle production

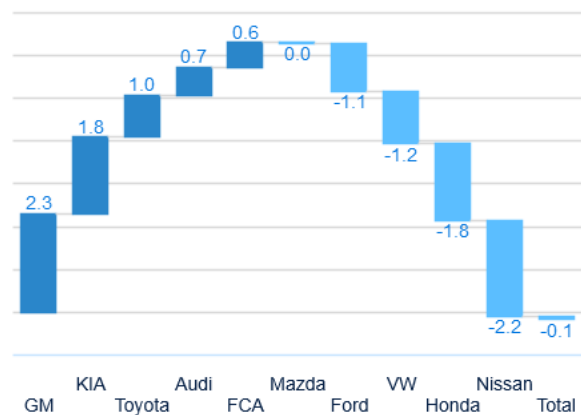
From January to October 2018 the production of light vehicles totalled 3.3 million units, with an annual rate of -0.1%. With this, production could be very close to 4 million units at year-end (0.5%) after an annual 13.5% in 2017. The main factors explaining this evolution are the greater preference of North American consumers for light trucks, but also sales in the domestic market weakened mainly by rising fuel prices. Although the existing plants in Mexico are mostly flexible, not all have been able to adapt their production to the needs of the US market, such being the case of Nissan and Ford, and to a lesser extent VW and Honda. In Mexico, 60% of production was oriented to the light truck market (including SUVs²¹, vans²², crossovers²³, and pick-ups), and the remaining 40% to cars in 2018.

Figure 3b.1 Light vehicle production in Mexico (Annualised figures in millions of units and annual % change)



Source: BBVA Research with INEGI data

Figure 3b.2 Contributions to growth in production, Jan-Oct 2018 (Percentage points)

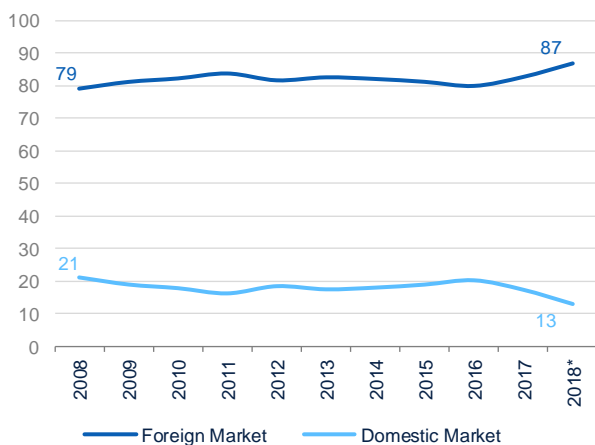


Note: For the Mazda brand, the accumulated information for 2018 corresponds to Jan.-Sept. Source: BBVA Research with INEGI data

21: SUVs: Sports Utility Vehicles
 22: Vans with extended chassis, used as small passenger buses
 23: Crossovers: vehicles built on passenger car platforms with SUV styling features

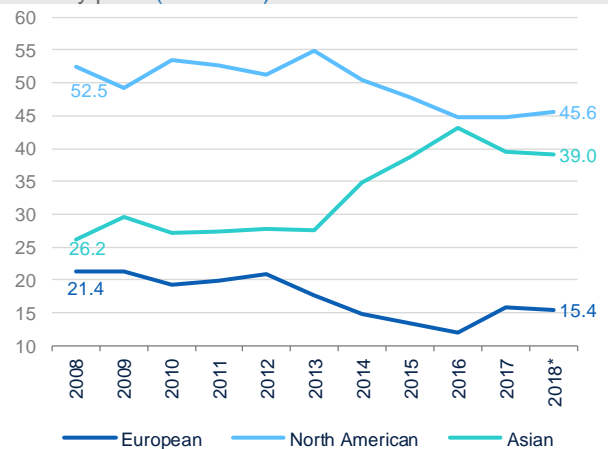
In 2008, 79% of light vehicle production was for export and the remaining 21% for the domestic market. Ten years on, the proportion of exports has risen by 8 percentage points (pp) to 87% and that for the domestic market stands at 13%. In 2008, 52% of production was carried out by North American manufacturers (Chrysler, Ford and GM), whereas in 2018 although they continue to concentrate the highest proportion (45.6%), it has fallen by 7 pp. European firms have also lost share in production from 21.4% in 2008 to 15.4% in 2018. The winners on the other hand were Asian firms with the incorporation of Hyundai/KIA, Mazda and the new Honda and Nissan plants.

Figure 3b.3 Light vehicle production: foreign and domestic market (% of total)



*2018 refers to Jan-Oct
Source: BBVA Research with INEGI data

Figure 3b.4 Contribution to production by origin of the assembly plant (% of total)

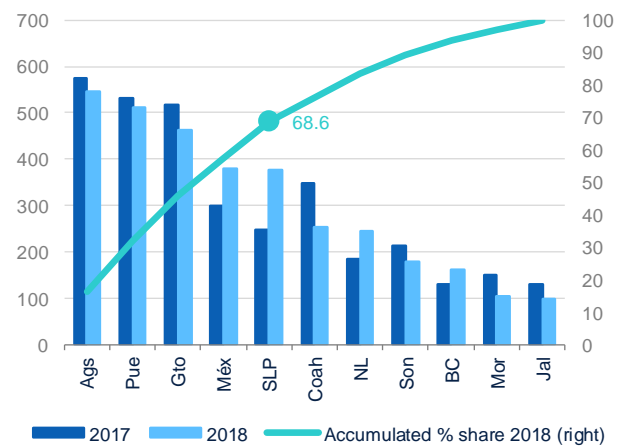


*2018 refers to Jan-Oct
Source: BBVA Research with INEGI data

By company, the positive evolution of GM, KIA, Toyota, Audi and FCA stands out with a contribution of 6.3 percentage points (pp) in the growth of total production. In contrast, Nissan, Honda, VW and Ford had a share of -6.4 pp in the total. So far it is known that Ford will probably reverse the negative trend by making an electric vehicle at its plant in Estado de Mexico. The same will happen with Honda, which after the flood it faced last June at its Celaya plant, halted production of its Fit and HR-V models until December 2018. In the case of Nissan, it is not yet known what the strategy will be to resume its growth. In the case of Mazda, its accumulated production report for 2018 corresponds to January-September 2018, so its evolution will improve when the missing October figure is added.

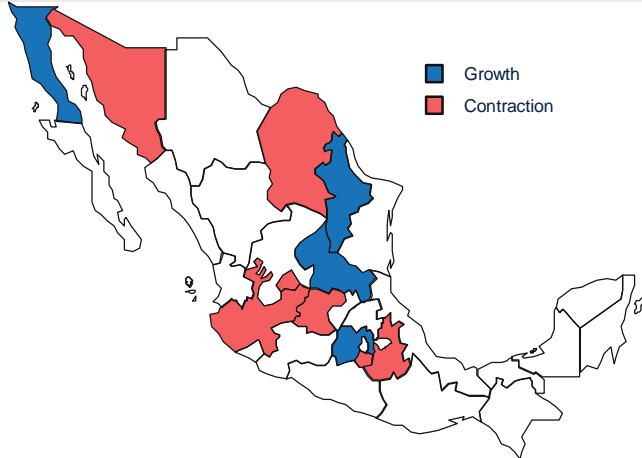
Light vehicle assembly plants in Mexico were distributed among 11 states in the country, but their relative weight in production was differentiated. From January to October 2018, five states accounted for 69% of total vehicle production: Aguascalientes (16.4%); Puebla (15.4%); Guanajuato (14%); México (11.4%); and San Luis Potosí (11.3%). The remaining 31.4% was distributed among six states. In terms of dynamism, the increases in San Luis Potosí, Nuevo León, México and Baja California were insufficient to reverse the evolution of total production.

Figure 3b.5 Automotive production by state*, Jan-Oct (Thousands of units and cumulative % share)



*Based on the models declared on the website of each plant
Source: BBVA Research with INEGI data

Figure 3b.6 Light vehicle production by state*, January-Oct 2018



*Based on the models declared on the website of each plant
Source: BBVA Research with INEGI data

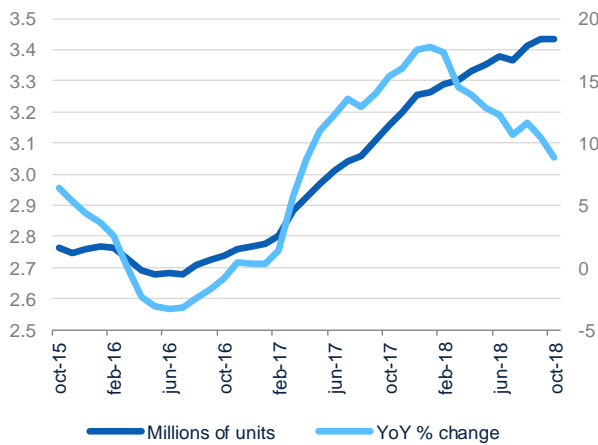
BBVA Research USA expects the US domestic market to maintain sales at 17.2 million units in 2019, similar to the level of 2018 (17.2 million); in 2020 sales would be at a level of 17 million units. This will cause some of the brands established in Mexico to adjust their manufacturing levels to the evolution of the external market and a declining domestic market. However, there are new investments, which will start producing vehicles in 2019 and 2020, which could offset this situation. It is estimated that the production of light vehicles in Mexico will add 3.9 and 4.1 million units in 2018 and 2019 respectively, these volumes being equivalent to advances of 0.5% and 4% for each year.

Exports, expanding despite uncertainty over the negotiation of the T-MEC (USMCA)

From January to October 2018 exports totalled 2.9 million units, which is equivalent to an annual growth of 6.8%, compared with the 17.5% annual growth observed in 2017. In 2018, four companies account for 69% of exports, with GM leading the export volume with 24.3%, followed by FCA with 18.4% of the total. In terms of dynamism, six companies are growing at positive rates and four at very high rates: KIA, GM, Toyota and Audi.

In terms of units, 87% of production goes to export markets. The brands that export a lower proportion than the average are Nissan (63.5%), KIA (76.7%) and VW (84.5%), due to a low orientation towards the segment of light trucks, which are preferred in export markets, especially the USA. In terms of units, 86% of production goes to export markets. The brands with a lower proportion than the average are Nissan (63.5%), KIA (76.7%) and VW (84.5%), due to a low orientation towards the segment of light trucks, which are preferred in export markets, especially the USA.

Figure 3b.7 Exports of light vehicles (Annualised figures in millions of units and annual % change)



Source: BBVA Research with INEGI data

Table 3b.1 Exports of light-duty vehicles by enterprise (Thousands of units)

	2018	Yoy % change	Share %	Export/production, %
GM	698.8	28.4	24.3	96.2
FCA	530.6	7.7	18.4	96.2
Nissan	413.1	1.8	14.4	63.5
VW	309.7	-4.4	10.8	84.8
Ford	222.7	-15.8	7.7	95.1
KIA	187.6	40.7	6.5	76.7
Toyota	157.4	24.8	5.5	97.6
Audi	140.5	18.4	4.9	95.8
Mazda	110.7	-11.5	3.8	92.7
Honda	105.5	-34.2	3.7	89.1
Total	2,876.5	6.8	100.0	86.7

Note: For the Mazda brand, the accumulated information for 2018 corresponds to Jan.-Sept.
Source: BBVA Research

From January to October 2018 of Mexico's ten major export destinations the most important was the US with 74% of shipments, followed far behind by Canada (7.5%), Germany (4.4%) and Brazil (2.3%). All export destinations show positive growth rates, except Canada and Argentina. The demand of the main export destinations is oriented to the segment of light trucks, with the exception of Colombia and Puerto Rico, which prefer cars. SUVs stand out among vehicles favoured by US customers. Exports increased by 76.1% thanks to a varied range offered by Mexico.

Table 3b.2 Exports* by main destination (Thousands of units, Jan-Oct 2018)

	Autos	Trucks	Total	YoY % change	% share	Trucks /total, %
United States	747	1,368	2,116	7.9	73.6	64.7
Canada	97	119	216	-1.2	7.5	55.1
Germany	28	100	127	67.0	4.4	78.2
Brazil	16	51	66	83.9	2.3	76.2
Colombia	29	17	46	2.1	1.6	36.6
Italy	1	37	39	260.2	1.3	96.2
Argentina	13	18	31	-11.6	1.1	57.3
Chile	12	19	31	45.2	1.1	61.9
Puerto Rico	17	4	21	69.4	0.7	18.1
China	16	0	16	84.6	0.5	0.0
Rest	62	106	168	-37.7	5.8	63.0
Total	1,038	1,838	2,877	6.8	100.0	63.9

*Refers to light vehicles
Source: BBVA Research with INEGI data

Table 3b.3 Exports* to the USA by segment (Thousands of units, Jan-Oct of each year)

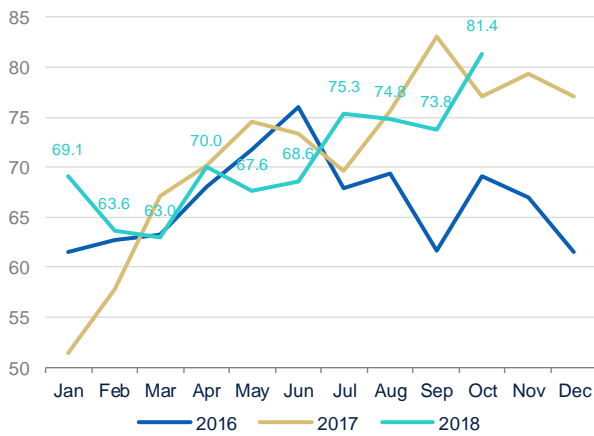
Segment	2017	2018	YoY % change	Share % 2018
Cars	891	730	-18.1	34.5
Sub-compacts	127	117	-8.1	5.5
Compacts	765	614	-19.7	29.0
Luxury*	31	17	-45.2	0.8
Trucks	1,038	1,368	31.8	64.7
Pick-ups	584	567	-2.8	26.8
SUVs	455	801	76.1	37.9
Total	1,961	2,116	7.9	100.0

*Refers to light vehicles
Source: BBVA Research with INEGI data

Domestic market for light vehicles and their financing

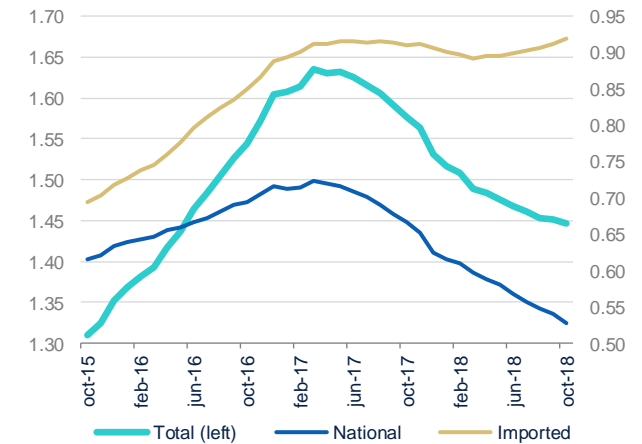
From January to October 2018, sales of light vehicles in Mexico totalled 1.2 million units, equivalent to an annual rate of -6.9%; in 2017 the fall was 4.6%. This marks almost two years of a slowing market. Among the factors that explain this situation in the last two years are basically: high maintenance costs and especially the high cost of gasoline, prices of which have been liberalised, the rise in price of new vehicles, and consumer confidence to purchase vehicles that remains at the same average level of 2017. This affected domestic vehicles more than imported ones. The domestic ones are mostly compacts and sub-compacts which are more price-sensitive, while the imported ones are more segmented and price-inelastic.

Figure 3b.8 Consumer confidence index: probability of buying a car (January 2003 = 100)



Source: BBVA Research with INEGI data

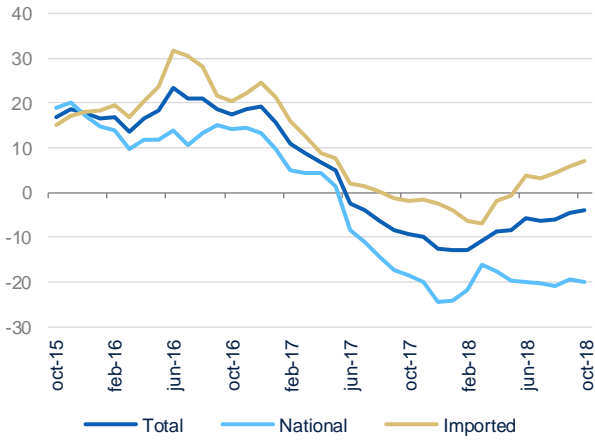
Figure 3b.9 Domestic market for light vehicles (Annualised figures, millions of units)



Source: BBVA Research with INEGI data

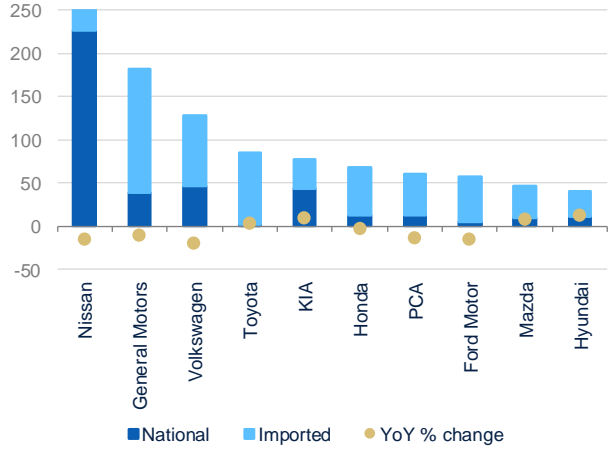
In terms of dynamism, from January to October 2018 sales of imported vehicles grew at an annual rate of 1.6% and with positive rates since June this year. On the other hand, sales of domestically produced vehicles remain stagnant; from January to October 2018 they registered a 19% annual fall with continuous declines in the last year. Vehicle sales in the Mexican market may not exceed 1.5 million units in the next two years, from 1.45 million units in 2018.

Figure 3b.10 Domestic market for light vehicles(Annual % change)



Source: BBVA Research with INEGI data

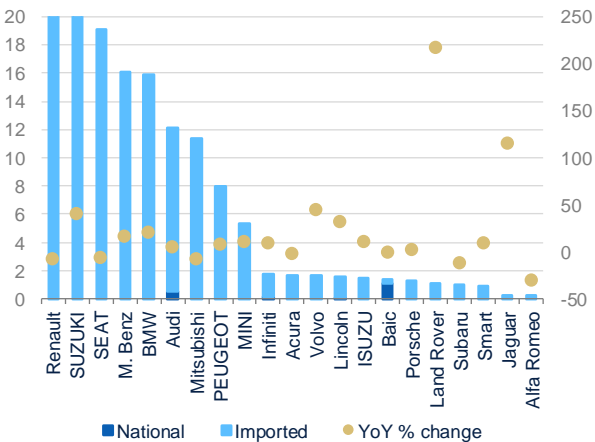
Figure 3b.11 Domestic market for light vehicles by brand (Thousands of units, Jan-Oct 2018)



Source: BBVA Research with INEGI data

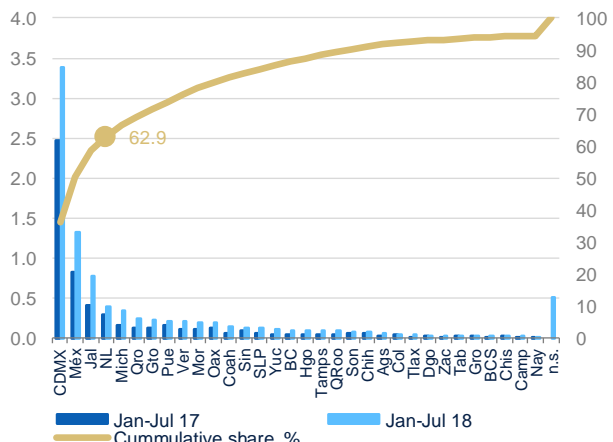
The domestic market for light vehicles in Mexico is small, with little dynamism, and to this is added the entry of new brands causing the higher-volume firms to suffer a drop in sales. North American brands have lost market share in the Mexican market, with 25.7% in January-October 2018 compared with 45% in 2008. European brands have more or less maintained their contribution, while Asian brands have been the winners, becoming the majority with 53.4% in 2018 vs. 37.1% in 2008. The Asians have been better at listening to consumers, with innovative designs and greater fuel efficiency, financing plans, longer warranty terms and better after-sales service than the Americans.

Figure 3b.12 Domestic market for light vehicles by brand (Thousands of units, Jan-Oct 2018)



Source: BBVA Research with INEGI data

Figure 3b.13 Domestic sales of hybrid and electric vehicles by state (Thousands of units)



Source: BBVA Research with INEGI data

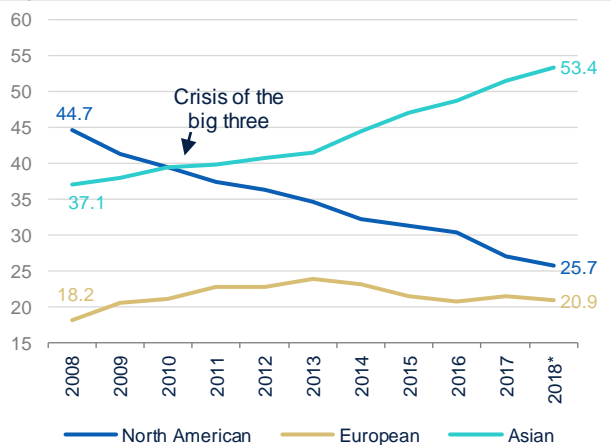
From January to October 2018, the Asian brands that dominated the light vehicle sales market were Nissan (22.2%), followed by Toyota (7.5%) and Hyundai/KIA (6.8%). In less than three years since its arrival, Hyundai/KIA has become the fifth-most sold in the country. As for the Americans, General Motors leads the pack with 16%, while Ford has lost share in the last two years (from 6.2% in 2016 to 5% in January-October 2018), placing it in eighth position in the preferences.

With regard to hybrid and electric vehicles, although the supply is currently very varied, the initial price is still high for the Mexican market (from MXN 400,000). In terms of sales, from January to July 2018, 9,326 hybrid and electric units were sold, equivalent to an increase of 63% with respect to the same period in 2017. These types of units have gained acceptance especially in urban areas of CDMX, Estado de Mexico, Jalisco and Nuevo León where 63% of the demand is concentrated. By segment, the preferred one is the hybrid EV (88%), followed by the plug-in hybrid²⁴ (11.2%) and the battery electric vehicle (1.2%).

Automotive financing: some banks with growth and more cautious finance companies

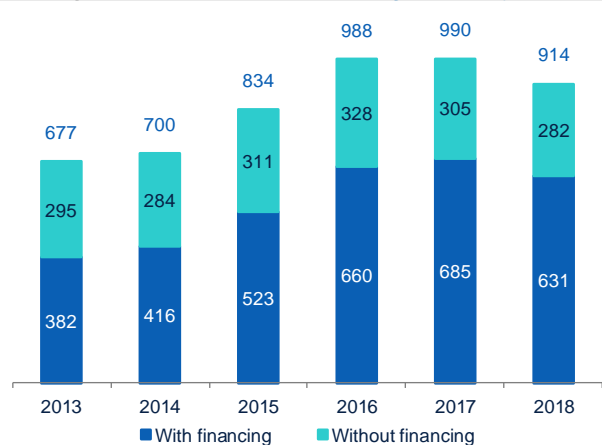
Automotive financing is key to boosting light vehicle sales in Mexico. From January to August 2018, 631,000 vehicles were sold through this method, equivalent to a 7.8% annual decrease; in 2017, total domestic sales and financing grew by 0.3% and 3.8% respectively. The dynamism of financing is already equivalent to that of sales in 2018. The adverse factors were the deterioration in consumer incomes due to higher inflation, higher interest rates, higher prices for new vehicles and their maintenance, as well as consumer confidence in purchasing them, which remains unchanged with respect to 2017.

Figure 3b.14 Domestic market for light vehicles by brand origin (% of total)



*2018 refers to Jan-Oct
Source: BBVA Research with INEGI data

Figure 3b.15 Domestic sales of light vehicles and their financing (thousands of units, Jan.-Aug. of each year)



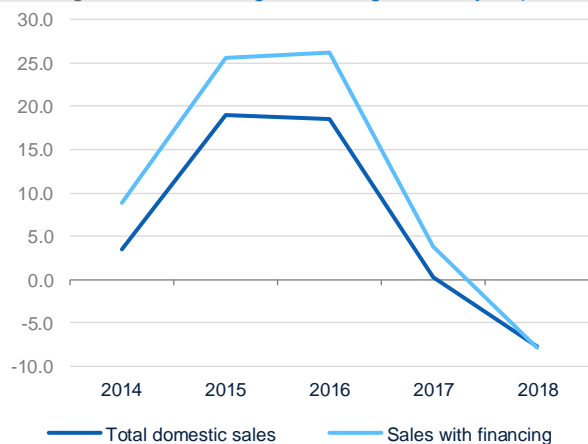
Source: BBVA Research with data from AMDA (Mexican Motor Distributors Association)

From January to August 2018 the brands' captive finance companies placed 68.7% of total vehicles, a rate that compares with 70.9% one year earlier; in terms of dynamism, placement decreased by 10.9% annually, reflecting greater caution. In contrast, after several years the banks have managed to reverse their declining share. In the period

24: The main obstacle to its expansion is the cost of batteries. While battery technology has advanced, a disruptive discovery is needed to make it competitive, and it is not something to be expected in the short term. Plug-in hybrids also have another disadvantage, namely the lack of charging infrastructure. Not all consumers have a garage or a place to plug these cars into at home. For this reason, it would be necessary to create electric charging stations on the streets and highways.

banks placed 28.1% of the total, a figure that compares favourably with 24.9% in the same period of 2017. Although in general all placement institutions have raised their interest rates, there is less differentiation between the banks and the finance companies.

Figure 3b.16 Domestic sales of light vehicles and their financing Annual % change, Jan-Aug of each year



Source: BBVA Research with data from AMDA (Mexican Automotive Distributors Association)

Table 3b.4 Financing by institution (thousands of units, Jan-Aug each year)

	2017	2018	YoY % change
Finance companies	486	434	-10.7
Banks	170	177	3.9
Self-financing	29	20	-28.7
Total	685	631	-7.8
% share			
	2017	2018	YoY % change
Finance companies	70.9	68.7	-2.2
Banks	24.9	28.1	3.2
Self-financing	4.2	3.2	-1.0
Total	100%	100%	

pp = percentage points
Source: BBVA Research with data from AMDA

Accumulated from January to August 2018, bank financing by Banorte, Scotiabank Inverlat and Banregio grew by 24.4%, 25.1% and 13.4%, respectively. Despite this performance, BBVA Bancomer continued to be the main underwriter, with 36% of the total. As for brands' captive finance companies, all show negative growth rates except KIA Finance, Hyundai Finance and BMW Finance Service, with growth rates of 24.6%, 38.2% and 18.7% respectively. This is also to some extent a reflection of the success that Korean firms have had in the Mexican market.

Table 3b.5 Banks' automotive financing

	Jan-Aug		Chge. % Annual	% Share	
	2017	2018		2017	2018
BBVA Bancomer	70.7	64.4	-8.9	41.5	36.4
Banorte	38.4	47.7	24.4	22.5	26.9
Scotiabank	31.6	39.5	25.1	18.5	22.3
Banregio	14.7	16.7	13.4	8.6	9.4
BNP Paribas	7.8	4.5	-42.1	4.6	2.6
Inbursa	5.2	3.4	-34.4	3.1	1.9
BAM*	2.1	0.9	-57.1	1.2	0.5

Banks	170.48	177.14	3.9	100.0	100.0
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* Mi Banco Autofin

Source: BBVA Research with data from AMDA

Table 3b.6 Brands' captive finance companies' automotive financing

	Jan-Aug		Chge. % annual	% Share	
	2017	2018		2017	2018
NR Finance México	139.7	120.5	-13.8	28.8	27.8
GMFinacial	111.5	97.3	-12.8	22.9	22.4
Volkswagen Financial	88.5	73.5	-16.9	18.2	16.9
Toyota Finance Services	36.3	35.5	-2.1	7.5	8.2
KIA Finance	22.7	28.3	24.6	4.7	6.5
FC Financial	38.1	27.4	-28.2	7.8	6.3
Ford Credit	26.7	22.5	-15.8	5.5	5.2
Hyundai Finance	13.7	18.9	38.2	2.8	4.4
BMW Financial Service	6.4	7.6	18.7	1.3	1.7
Mini Financial Service	2.5	2.4	-1.9	0.5	0.6
Brands' captive finance companies	486.0	433.8	-10.7	100.0	100.0

Source: BBVA Research with data from AMDA

In summary, the economic situation for most of the year was not very encouraging, except for the growth in light vehicle exports, which continue to grow. Even so, the outlook for exports is not entirely encouraging. The US market is weakening and there is little optimism about the behaviour of its sales. In addition, the middle class, the main buyers of new vehicles in the US, is being cautious due to higher interest rates. As for Mexico's domestic market, the higher interest rates and high maintenance costs associated with ownership will also have a negative impact. This will lead some brands established in Mexico to adjust their manufacturing levels in the face of an external market with low growth and a declining domestic market. However, two new facilities (BMW and Toyota) will start producing vehicles in 2019, which could offset this situation.

3.c New rules of origin in the T-MEC (USMCA) increase the domestic value requirement

The Rules of Origin (RO) establish the percentages of value for inputs manufactured in the region to be traded duty-free. They are designed to prevent other countries from introducing their parts into products and taking advantage of tariff preferences negotiated by the signatories to the agreement. All trade agreements have rules of origin. NAFTA has relatively restrictive rules of origin.²⁵ In the case of the automotive industry, the main regulation requires that 62.5% of the value of a car and a heavy vehicle be manufactured with regional content to cross the border from Mexico or Canada to the US without tariffs. With the conditions set out in the new agreement signed, the rules of origin for the automotive industry became stricter.

Tightening of the Rules of Origin in the automotive industry with the T-MEC (USMCA)

Light and heavy vehicles:

- The Regional Value Content (RVC) will be increased from 62.5% to 75% for cars and light trucks under the net cost methodology. This increase will be gradual over three years until the target is reached.²⁶
- The RVC will be increased from 62.5% to 70% for heavy vehicles under the net cost methodology²⁷. A transition period of seven years is provided. The first one four years after the agreement comes into force, and the second one in the last three years.²⁸
- Vehicle manufacturers must buy at least 70% of steel and aluminium in the region. The agreement does not specify whether this refers to the weight or the value of the materials.²⁹
- In terms of value, at least 40% and 45% for cars and pick-ups respectively must be manufactured in a factory where the average production wage is at least US\$16 per hour, which will be equal to the Value of Work Content. This will consist of: 1) 25% for cars and 30% for pick-ups, must be materials, labour and transportation; 2) up to 10% may be research and development expenses or information technologies (human resources and software, hardware was excluded); and 3) up to 5% will be granted in case the vehicle plant has a manufacturing level of at least 100,000 engines or transmissions or at least 25,000 advanced batteries in regions with salaries of US\$16 per hour or more; or heavy vehicles have a manufacturing level of at least 20,000 engines, transmissions or advanced batteries in said regions; or heavy vehicles have a manufacturing level of at least 20,000 engines, transmissions or advanced batteries in said regions. These requirements do not apply to auto parts.³⁰

Auto parts:

- Auto parts were divided into three categories, each with different RVC levels. All three with a three-year implementation period: 1) the essential ones from 62.5% to 75% of the RVC under the net cost method; 2) the main ones from 62.5% to 70% under the net cost method; and 3) the complementary ones from 62.5% to 65% under the net cost method. The tracking list, which establishes the benefit for certain goods that could be considered as

25: Bown, Chad P. "Sweating the Auto Details of Trump's Trade Deal with Mexico" (PIIE) August 29, 2018 2:45 PM

26: The US-Mexico-Canada Trade Agreement. Article 4-B.3: Regional Value Content for Passenger Vehicles, Light Trucks, and Parts Thereof

27: Automotive Industry Merchandise Method "Net Cost Method" $RVC = ((NC - VNM)/NC) \times 100$: where RVC is the value of regional content expressed as a percentage; NC is the net cost of the merchandise; and VNM is the value of non-originating materials acquired and used by the producer in the production of the merchandise.

28: *Idem*... Article 4-B.4: Regional Value Content for Heavy Trucks and Parts Thereof

29: *Idem*... Article 4-B.6: Steel and Aluminium

30: *Idem*... Article 4-B.7: Labour Value Content

originating, regardless of the country of origin, is eliminated. The new rules of origin will also respect the “tariff change” criterion if the current rules so provide.

The tighter rules may result in higher costs and inefficiencies for companies. From the point of view of the supply chain process, strengthening the rules of origin could create substantial changes and potential difficulties. In a high-performing trade agreement, goods are moved between trading partners with reduced or eliminated tariffs and support for regional economies.³¹

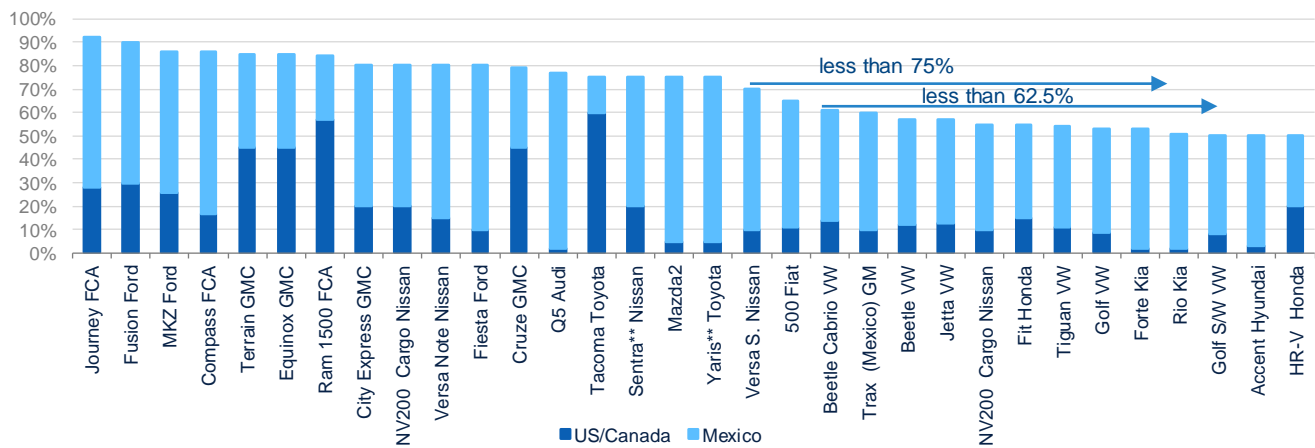
These economic incentives generate cost savings that benefit customers, suppliers and employees. If the rules of origin are too lax, countries outside the agreement may benefit, to the detriment of member countries. If the rules are too strict, producers may be a source of origin outside of agreements where parties may be less costly, affecting the existing supply chain.³²

Therefore, there is a risk that, as progress is made in the implementation of the new rules, there will be price increases along the chain in the short term. This would result in higher unit prices. As the amount to be paid for units increases, it is also possible that demand will lose steam or even contract.

Light vehicles produced in Mexico and exported to the US that meet the new rule of origin

According to the NHTSA³³, Mexico currently exports 32 models with their different versions to the United States. Of these, 19 comply with the NAFTA rules of origin and the remaining 13 pay the 2.5% most-favoured-nation (MFN) tariff of the WTO. Both are equivalent to 80.5% and 19.5%, respectively, of 2.1 million units exported by Mexico to the US during January-October 2018. If T-MEC (USMCA) ROs were applied, 17 models would not comply and 15 would pay 2.5%, the latter equivalent to 22% of the total exports to the USA.

Figure 3c.1 Regional content of vehicles manufactured in Mexico and exported to the US (% of total)



Note: The GMC City Express model has been discontinued.
Source: BBVA Research with data from the NHTSA updated to 6 June 2018 **in all versions

31: Kulisch, Eric: NAFTA's touchiest issue: rules of origin August 13, 2017 @ 12:01 am <http://www.autonews.com/article/20170813/OEM/170819917/nafta-rules-of-origin>

32: *Idem*

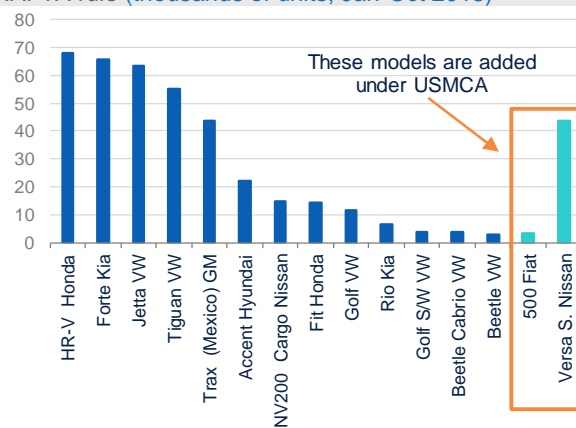
33: National Highway Traffic Safety Administration USDOT https://www.nhtsa.gov/sites/nhtsa.dot.gov/files/documents/2018_aala_percent_06262018.pdf

By brand, the proportion of total sales to the USA is relatively small for GM under the current rule, but not for Honda, Hyundai/KIA and VW whose total production pays MFN duty. This will clearly force car manufacturers, especially these last-named, to overhaul their supply chains and reconsider their commercial strategy for purchasing parts. The new rule would also affect Nissan and to a lesser extent FCA.

Section 232 Side Letter

If the US imposes automotive tariffs under “Section 232”, Mexico and Canada will obtain an annual duty-free passenger vehicle quota of 2.6 million vehicles exported to the United States. In 2018 it is estimated that exports to the US are 1.8 million units, which gives it a leeway of just over 40% in the coming years. Pick-ups built in both countries will be completely exempt. Mexico will get an auto parts quota of US\$108 billion annually (Mexico exported US\$45 billion in 2017).³⁴

Figure 3c.2 Models currently paying 2.5% MFN tariff, NAFTA rule (thousands of units, Jan-Oct 2018)



Note: The 2019 model Beetle will be the final edition, with no replacement in sight.
Source: BBVA Research with data from the NHTSA and INEGI

Table 3c.1 Brands with 2.5% MFN tariff (thousands of units, Jan-Oct 2018)

	Exports USA w/MFN tariff	Exports Total USA	w/tariff as % of total
62.5% rule of origin			
Honda	86.3	86.3	100.0
Hyundai/KIA	111.7	111.7	100.0
VW	162.2	162.2	100.0
GM	51.8	569.9	9.1
Subtotal	412.0	930.1	44.3
New Rule 75%			
FCA	3.3	414.7	0.8
Nissan	49.2	305.3	16.1
Subtotal	52.5	720.0	7.3
Rest		.62	
Total	464.54	2,115.7	22.0

Source: BBVA Research with data from the NHTSA and INEGI

Non-originating car protection clause

In the event that the US decides to apply a global tariff of 25% to US imports of light vehicles and auto parts, cars exported by Mexico that do not meet the 1994 NAFTA RO will face a maximum MFN tariff of 2.5% for up to 1.6 million units. From January to October 2018, 412,000 units did not meet the NAFTA RO equivalent to 22% of the total exported to the USA.

In summary, the immediate effect of the implementation of these rules of origin looks negative on the negotiation of rules of origin for the automotive and auto parts industry. The minimum regional content and wage requirements restrict production in Mexico - especially that of European and Asian origin - which has a mostly foreign component. The cap of 2.4 million units to Mexico’s exports is a disincentive to the expansion of investment in the country. However, in the medium term there could be the opposite effect, with an increase in foreign direct investment of this industry in the country in order to comply with the rules of origin of the new trade agreement. This will depend, in addition to the certainty of domestic investment, on whether the North American market maintains its buoyant demand in order to remain attractive.

34: Idem... US Mexico 232 Side Letter

4. Statistical annex

4.a State economic performance indicators

Table 4a.1 Selected indicators

	Real GDP ¹ 2017	Population ² 2017	Real GDP 2017 USD ³	Real GDP per capita 2017 ⁴	AAGR ⁵ , % 2010-2017			Place in the National					
					Real GDP	Population	Real GDP per capita	Real GDP 2017 ⁶	Real GDP per capita 2017 ⁷	FDI 2017 ⁸	Employment 2017 ⁹	Fed.-cont. 2017 ¹⁰	Public Debt 2017 ¹¹
National	18,151.8	124.0	960.1	7.7	3.1	1.3	1.8						
Aguascalientes	225.5	1.4	11.9	8.7	5.9	2.0	3.9	25	10	22	17	27	23
Baja California	541.1	3.5	28.6	8.3	3.6	1.3	2.3	12	11	6	7	12	8
Baja California Sur	150.4	0.8	8.0	10.5	4.3	2.6	1.8	29	4	17	19	31	19
Campeche	544.1	1.0	28.8	30.3	-4.4	1.9	-6.2	11	1	32	31	30	30
Chiapas	283.6	5.5	15.0	2.7	1.3	1.8	-0.5	19	32	29	29	8	15
Chihuahua	551.9	3.7	29.2	7.9	4.1	0.9	3.2	10	12	8	12	11	2
Coahuila	607.2	3.1	32.1	10.4	4.8	1.5	3.3	7	6	5	15	16	4
Colima	104.0	0.7	5.5	7.4	4.0	1.9	2.0	31	14	31	21	32	13
Durango	202.3	1.8	10.7	5.9	2.7	1.4	1.4	26	20	24	23	25	14
Guanajuato	726.3	6.1	38.4	6.3	5.3	1.3	3.9	6	18	4	5	7	29
Guerrero	238.0	3.6	12.6	3.5	2.1	0.8	1.3	24	30	28	27	19	25
Hidalgo	263.2	3.0	13.9	4.7	3.8	1.5	2.3	21	28	19	22	20	21
Jalisco	1,196.6	8.1	63.3	7.8	4.1	1.3	2.8	4	13	11	2	3	18
Mexico	1,547.5	16.9	81.8	4.9	3.9	1.3	2.6	2	26	3	4	1	20
Mexico City	3,036.3	9.0	160.6	17.7	3.2	0.2	3.0	1	2	1	1	2	7
Michoacán	419.8	4.7	22.2	4.7	3.6	1.1	2.5	15	27	18	13	10	9
Morelos	201.6	2.0	10.7	5.4	2.3	1.4	0.9	27	21	26	28	23	16
Nayarit	122.0	1.2	6.5	5.2	3.5	1.8	1.7	30	22	30	26	28	11
Nuevo León	1,262.6	5.4	66.8	12.4	3.6	1.9	1.7	3	3	2	3	5	3
Oaxaca	248.1	4.1	13.1	3.2	1.3	0.9	0.4	23	31	21	24	15	10
Puebla	595.5	6.4	31.5	4.9	4.1	1.3	2.8	8	25	13	9	6	27
Querétaro	402.7	2.2	21.3	9.9	5.1	2.3	2.9	16	8	9	6	21	31
Quintana Roo	274.4	1.6	14.5	9.0	5.0	2.7	2.3	20	9	23	8	26	1
San Luis Potosí	361.1	2.8	19.1	6.8	4.4	1.0	3.4	18	16	15	10	18	26
Sinaloa	383.4	3.1	20.3	6.6	3.0	1.3	1.7	17	17	16	16	17	22
Sonora	574.9	3.0	30.4	10.3	4.3	1.4	2.9	9	7	7	14	14	5
Tabasco	492.9	2.5	26.1	10.5	0.0	1.5	-1.4	13	5	14	32	13	28
Tamaulipas	487.8	3.6	25.8	7.2	1.3	1.1	0.2	14	15	10	11	9	17
Tlaxcala	96.6	1.3	5.1	3.8	2.2	1.7	0.5	32	29	20	20	29	32
Veracruz	798.4	8.4	42.2	5.0	1.9	1.1	0.7	5	24	12	30	4	6
Yucatán	248.6	2.2	13.1	6.0	3.5	1.4	2.1	22	19	27	18	22	24
Zacatecas	157.3	1.6	8.3	5.1	2.4	1.2	1.3	28	23	25	25	24	12

1: Estimates. Figures in billions of 2013 pesos. The sum of state GDPs is not equal to national GDP, because the latter includes taxes net of subsidies in addition to the gross aggregate value.

2: Estimates and projections of the population by state. 2010-2050. Conapo. Figures in millions of people

3: US\$ billions (average exchange rate for 2017)

4: US\$ thousands (average exchange rate for 2017)

5: Average annual growth rate (%)

6: Position based on real GDP 2017

7: Position based on real GDP per capita 2017

8: Position based on Foreign Direct Investment captured by the entity in 2017

9: Position based on the change in the number of workers insured with the IMSS in 2017

10: Position based on the federal government contributions shown in branch 28 of the State Budget (PEF) in 2017

11: Position based solely on financial obligations registered with the SHCP as belonging to the federal contributions budgeted for each state at Dec. 2017

Source: BBVA Research based on INEGI, Conapo, Banxico, STPS, SE and SHCP data

4.b Indicators by state

Table 4b.2 Economic indicators

	Aguascalientes						Baja California					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	9.8	3.7	2.8	-0.8	1.7	2.7	4.3	2.5	1.4	1.6	3.7	3.1
Primary Sector	3.8	6.3	7.7	13.1	4.5	9.0	-5.4	3.7	7.2	12.2	-4.1	9.8
Secondary Sector	8.0	1.0	0.3	-4.2	1.6	1.5	4.1	2.3	0.8	2.4	6.3	5.5
Tertiary Sector	11.6	5.5	4.2	0.8	1.6	3.2	5.0	2.7	1.6	0.6	2.4	1.3
Industrial Activity	7.7	1.4	0.9	-3.9	2.7	0.2	4.2	2.3	0.7	2.4	7.4	4.8
Manufacturing Production	5.8	3.7	7.0	-5.2	6.7	-3.8	5.7	3.3	2.0	0.7	4.7	5.3
Construction	35.2	-3.2	-17.6	2.2	-10.3	15.7	-2.8	0.3	14.6	7.6	49.2	15.7
Private Sector Works	23.1	3.9	-8.3	8.8	-11.1	-7.8	34.4	20.8	20.4	39.5	82.7	34.6
Public Works	105.8	-18.2	-32.5	-11.6	-7.5	223.5	-23.9	-22.6	4.0	-34.4	-12.9	-10.5
Retail sales	16.9	1.4	0.1	0.3	8.8	5.8	23.3	3.5	1.1	-0.7	3.9	2.8
Wholesale sales	49.9	14.2	4.5	-4.0	-5.8	1.3	13.2	-1.3	-5.1	-6.5	-3.7	0.5
Pop. in employment (ENOE***)¹	4.6	0.6	-1.2	0.4	1.3	2.0	3.8	3.0	2.5	2.0	5.0	2.6
Insured workers (IMSS)	7.3	5.3	5.0	5.1	5.5	5.9	4.7	5.0	4.9	4.2	4.7	4.3
Permanent	6.8	6.3	6.2	6.4	7.0	7.0	4.8	5.3	5.2	4.5	4.3	4.3
Casual labour, urban	11.4	-4.3	-6.4	-8.2	-9.8	-5.7	5.7	2.6	2.2	1.9	2.9	2.5
Federal contributions (Branch 28)	8.1	-0.5	-2.3	-7.2	5.2	7.1	12.2	10.6	-5.2	-9.7	0.8	-6.8
FDI (US\$ millions)	497	1,118	-115	412	121	626	1,497	1,507	146	225	627	157

Table 4b.2 Economic indicators (cont.)

	Baja California Sur						Campeche					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	3.0	12.4	19.1	13.6	21.5	17.9	-5.4	-9.9	-13.7	-8.7	-6.1	-3.7
Primary Sector	9.4	3.9	-9.7	-5.9	-1.4	-3.4	9.0	1.3	0.6	7.3	0.4	10.5
Secondary Sector	-5.1	28.6	51.7	40.2	79.1	57.0	-5.7	-11.5	-15.8	-10.4	-7.4	-5.0
Tertiary Sector	6.4	6.2	6.7	4.3	3.5	2.0	-4.4	-0.2	0.0	1.0	2.0	3.6
Industrial Activity	-2.2	29.4	52.0	41.5	80.3	61.2	-6.0	-11.2	-16.0	-10.3	-7.1	-5.1
Manufacturing Production	-0.1	0.3	0.1	-2.7	-1.5	-1.5	-5.4	-6.6	-6.4	-7.6	0.1	3.6
Construction	-4.4	58.2	104.8	34.9	98.4	87.4	-21.4	-35.2	-29.8	-8.8	-4.2	17.1
Private Sector Works	33.7	94.2	139.4	62.1	147.6	102.8	-40.6	15.4	79.1	-14.9	12.8	-61.6
Public Works	-19.0	2.1	16.9	-16.2	10.7	109.6	-19.1	-35.6	-31.9	-5.4	-5.1	24.5
Retail sales	29.1	10.5	6.7	4.8	9.4	2.3	0.7	-7.2	-4.6	-4.2	-0.8	2.2
Wholesale sales	4.1	0.9	-1.5	-1.3	0.1	3.7	-3.6	-4.0	-11.8	-7.8	-6.6	4.7
Pop. in employment (ENOE***)¹	2.1	4.2	4.7	2.1	3.4	5.8	0.4	1.1	1.2	1.7	1.8	2.5
Insured workers (IMSS)	7.4	9.3	9.5	8.5	8.3	8.1	-12.4	-5.1	-2.5	-0.7	0.1	2.7
Permanent	5.8	6.9	6.7	6.3	5.6	4.8	-8.3	-5.0	-3.4	-2.0	-0.5	0.8
Casual labour, urban	12.1	20.8	21.7	17.7	17.7	18.3	-27.3	-4.6	2.6	6.5	3.7	12.4
Federal contributions (Branch 28)	5.0	14.3	7.5	2.0	3.0	4.2	-8.5	-14.6	-13.0	-14.0	17.1	55.9
FDI (US\$ millions)	462	513	146	87	146	41	217	312	106	63	6	19

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Chiapas						Chihuahua					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	-0.2	-2.2	-2.6	-2.0	-2.1	-2.4	4.6	2.4	1.7	0.6	-1.5	1.2
Primary Sector	4.3	1.4	-6.9	2.8	5.7	-1.2	-12.5	6.3	2.5	19.7	-1.8	-3.4
Secondary Sector	-8.8	-11.8	-15.3	-7.4	-12.0	-8.1	7.3	0.7	-0.1	-4.6	-6.3	-3.0
Tertiary Sector	2.9	0.8	2.2	-0.8	-0.1	-0.6	4.2	2.9	3.0	1.3	2.2	4.6
Industrial Activity	-8.8	-11.8	-14.8	-7.2	-11.7	-8.2	7.0	1.0	-0.1	-4.5	-5.2	-4.1
Manufacturing Production	-3.9	-10.4	-5.2	-8.4	-9.9	-5.9	8.5	3.6	2.0	-1.6	-0.7	-2.1
Construction	11.2	-7.4	-50.7	-43.5	-40.3	-26.1	5.3	-16.4	-19.2	-29.1	-28.9	-2.0
Private Sector Works	116.9	8.4	-69.9	-66.5	-34.4	-38.2	5.8	-16.0	-17.0	-31.5	-33.7	3.4
Public Works	-27.2	0.6	-24.6	-7.8	-44.4	-0.2	7.7	-15.6	-22.7	-20.8	-15.2	-11.5
Retail sales	47.5	2.1	-2.3	-2.7	-0.9	0.9	19.3	0.9	0.8	-2.9	-1.0	15.3
Wholesale sales	-1.8	2.6	3.9	1.5	-2.1	0.5	17.4	-1.7	-3.8	-5.5	-7.0	1.5
Pop. in employment (ENO****)¹	2.0	-1.9	-4.0	-2.7	-1.1	0.4	3.4	1.2	-1.4	-0.2	1.1	4.7
Insured workers (IMSS)	1.2	-0.1	-0.7	-0.1	1.2	1.7	5.4	3.3	2.8	2.2	2.4	2.4
Permanent	1.7	-0.2	-0.6	-0.6	1.4	2.2	5.6	3.2	2.8	2.5	3.1	2.9
Casual labour, urban	-2.0	1.0	-1.4	4.2	-0.2	-2.9	3.4	4.8	4.2	0.6	-4.9	-2.5
Federal contributions (Branch 28)	7.5	4.8	-2.4	17.4	1.6	8.3	5.3	8.8	2.0	-2.4	-2.9	-3.1
FDI (US\$ millions)	134	204	-1	37	50	5	1,958	1,728	473	244	466	256

Table 4b.2 Economic indicators (cont.)

	Coahuila						Colima					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	1.5	4.2	4.1	1.6	0.2	0.4	5.9	3.0	3.5	4.7	3.7	4.8
Primary Sector	-6.8	2.8	-1.6	3.7	2.1	1.5	5.3	2.2	-8.7	10.9	17.3	20.2
Secondary Sector	0.5	6.1	7.5	0.9	-2.6	-2.2	0.9	-5.5	-0.8	-3.9	-5.3	2.1
Tertiary Sector	3.2	2.3	0.8	2.3	3.5	3.5	8.0	6.1	5.6	7.1	5.8	4.7
Industrial Activity	0.6	6.1	8.0	0.7	-1.4	-3.3	1.1	-5.4	-1.4	-3.9	-2.4	0.2
Manufacturing Production	-1.6	3.6	5.3	2.4	1.1	-0.3	-1.2	-1.8	3.2	-3.4	2.8	-10.0
Construction	1.7	52.0	64.2	4.6	-3.8	-33.8	22.3	10.0	0.2	20.8	-16.6	-15.1
Private Sector Works	-6.1	34.1	46.7	16.6	9.1	-36.4	49.7	25.9	12.0	42.2	-11.5	-4.9
Public Works	42.3	120.0	123.4	-19.7	-28.8	-29.2	-8.1	-7.9	-20.0	7.1	-28.7	-23.0
Retail sales	14.3	7.1	5.4	4.0	10.5	3.7	23.4	21.5	9.3	6.9	3.0	-0.8
Wholesale sales	11.2	0.0	-6.5	-0.8	-4.1	0.1	39.4	7.4	5.7	10.1	3.7	9.8
Pop. in employment (ENO****)¹	3.0	1.4	-1.3	-0.9	0.1	2.9	3.0	2.6	0.6	4.0	1.8	6.0
Insured workers (IMSS)	3.4	3.5	3.4	4.1	4.9	4.8	1.8	5.2	5.7	5.4	4.4	3.2
Permanent	3.8	4.0	3.7	4.1	5.1	4.9	3.1	5.3	6.1	5.3	5.2	3.8
Casual labour, urban	0.5	0.3	0.9	3.6	3.2	3.8	-5.5	4.6	3.1	7.0	2.8	4.4
Federal contributions (Branch 28)	12.2	5.1	1.8	4.4	-3.5	1.2	13.1	2.3	-18.2	-9.6	-1.2	9.3
FDI (US\$ millions)	1,408	2,285	305	1,064	571	535	-28	143	23	36	46	11

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Durango						Guanajuato					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE**)	4.0	-0.2	-0.8	-5.0	-2.6	-0.4	4.2	5.4	4.3	3.3	-0.2	2.5
Primary Sector	6.0	8.3	6.4	8.0	-1.7	0.5	2.7	4.9	8.9	0.6	7.0	17.7
Secondary Sector	1.8	-0.1	1.4	-10.9	-11.1	-5.5	4.3	5.0	3.0	0.5	-6.9	-2.5
Tertiary Sector	4.7	-1.7	-3.2	-4.4	1.8	1.9	4.3	5.6	4.9	5.3	4.0	4.8
Industrial Activity	1.9	-0.1	1.3	-10.7	-9.9	-6.5	4.1	5.3	3.6	0.5	-6.0	-3.5
Manufacturing Production	-1.0	2.9	5.4	-0.5	1.4	2.9	3.9	3.1	2.6	-0.2	-5.4	-1.2
Construction	24.0	-16.7	-12.9	-52.2	-47.4	-49.5	-8.4	2.6	-7.2	-8.9	-31.3	-14.3
Private Sector Works	26.1	-29.0	-17.6	-24.0	2.3	27.3	2.3	-6.0	-17.0	-17.7	-28.9	-8.9
Public Works	23.9	-2.6	-10.3	-63.6	-63.6	-73.4	-29.6	31.8	29.3	18.3	-36.5	-23.1
Retail sales	35.9	2.0	1.8	-1.2	2.7	3.3	31.8	3.9	1.1	-0.4	3.3	2.5
Wholesale sales	10.8	-21.0	-32.9	-31.8	-16.8	-11.6	12.5	9.8	14.2	14.0	9.3	15.9
Pop. in employment (ENO***)¹	2.8	-0.3	2.2	-0.5	3.2	3.9	3.3	0.4	0.6	2.3	2.0	7.1
Insured workers (IMSS)	3.7	2.6	2.3	1.8	2.9	4.3	5.5	6.2	6.2	6.8	6.3	5.5
Permanent	4.7	3.1	2.6	2.0	2.7	4.0	5.0	7.0	7.5	7.4	6.4	5.3
Casual labour, urban	-3.3	-1.8	-0.9	0.1	4.8	6.3	7.7	0.4	-3.0	2.0	4.5	5.7
Federal contributions (Branch 28)	5.6	8.4	13.2	-3.0	3.6	8.6	9.0	5.1	8.4	-7.8	-1.7	-4.5
FDI (US\$ millions)	264	98	27	47	79	40	1,310	1,590	386	91	632	253

Table 4b.2 Economic indicators (cont.)

	Guerrero						Hidalgo					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE**)	2.1	0.5	0.7	4.8	5.2	2.2	4.3	-0.2	0.7	2.2	3.8	1.4
Primary Sector	14.1	2.7	-6.0	2.8	3.9	-0.6	0.3	3.8	18.8	-6.3	-2.4	8.8
Secondary Sector	3.7	-5.0	-1.6	-2.1	13.3	5.5	4.0	-4.7	-0.9	1.5	2.9	-4.8
Tertiary Sector	1.0	1.8	1.8	6.5	3.5	1.6	4.7	2.2	0.6	3.4	4.4	4.3
Industrial Activity	3.9	-4.9	-1.8	-1.4	13.2	5.6	4.2	-4.6	0.0	1.4	4.5	-6.3
Manufacturing Production	2.5	-3.9	-2.8	2.2	9.7	2.8	2.8	4.7	8.3	6.6	0.0	-3.9
Construction	-5.0	-38.4	-45.0	-55.5	-36.3	-30.3	-2.4	-35.1	-24.0	-22.7	24.9	-17.1
Private Sector Works	71.5	-12.9	-17.6	-64.8	-45.4	-41.5	-6.7	-20.3	-8.1	-19.8	-11.2	3.0
Public Works	-28.3	-48.6	-63.2	-45.5	-10.8	0.4	1.0	-40.5	-30.5	-23.6	55.5	-27.4
Retail sales	9.3	-1.9	-3.0	-0.8	-0.5	-1.2	31.6	-5.2	-5.1	-3.3	0.8	5.3
Wholesale sales	11.4	-3.6	0.2	5.5	4.5	9.3	9.6	6.9	-0.7	-2.5	-4.0	-0.8
Pop. in employment (ENO***)¹	2.8	1.0	-2.0	5.4	-3.0	-0.8	-2.0	-0.9	-1.6	0.7	5.7	6.4
Insured workers (IMSS)	0.9	2.6	2.6	1.7	2.1	1.7	3.7	2.8	2.6	3.1	4.2	5.1
Permanent	1.5	3.6	3.4	2.2	1.5	1.1	5.5	3.7	3.3	4.5	5.8	5.8
Casual labour, urban	-1.3	-0.9	-0.5	-0.3	4.7	4.0	-1.9	-0.2	0.1	-1.7	-1.3	2.8
Federal contributions (Branch 28)	4.0	0.9	2.8	-10.2	6.7	9.7	10.0	6.0	2.8	-6.4	-7.0	-0.6
FDI (US\$ millions)	176	232	38	-13	53	24	434	360	55	91	140	31

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Jalisco						Mexico					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	4.7	3.2	4.1	4.0	4.2	5.2	2.9	4.5	3.3	6.5	4.2	4.0
Primary Sector	3.7	5.2	3.9	3.2	5.0	3.9	7.1	0.4	1.4	-4.1	-14.3	-1.2
Secondary Sector	1.8	2.9	4.6	4.0	2.9	2.8	0.3	7.8	8.7	14.9	6.6	8.5
Tertiary Sector	6.4	3.2	3.8	4.0	4.7	6.5	3.8	3.5	1.4	3.9	3.5	2.6
Industrial Activity	1.7	2.9	4.7	4.4	3.8	1.6	0.1	8.0	9.6	14.2	8.6	7.2
Manufacturing Production	1.3	3.6	4.8	5.9	6.6	5.0	-2.3	6.0	5.4	8.1	3.8	5.1
Construction	-2.7	5.4	-3.3	6.9	5.8	-5.5	27.6	60.6	74.4	95.0	53.2	27.7
Private Sector Works	-5.5	10.1	5.9	18.8	18.6	-4.4	37.5	21.6	19.3	14.9	5.2	-17.0
Public Works	7.8	-3.6	-23.8	-18.4	-18.0	-8.1	21.5	99.9	123.4	182.1	87.0	60.1
Retail sales	21.7	3.8	-0.1	-2.1	1.2	4.7	21.8	2.3	0.3	-0.2	3.0	1.8
Wholesale sales	15.7	-1.7	1.5	3.6	3.7	11.0	19.5	2.2	-1.4	2.6	0.6	2.9
Pop. in employment (ENO***)¹	3.2	3.1	3.2	2.1	0.2	1.0	0.2	3.1	3.1	4.3	3.3	4.1
Insured workers (IMSS)	5.4	6.1	6.2	5.9	5.5	5.2	4.0	4.5	4.8	5.2	5.8	5.8
Permanent	4.7	5.2	5.1	5.0	4.8	4.5	4.0	4.4	4.8	5.0	5.9	6.0
Casual labour, urban	10.0	10.8	11.7	11.9	9.6	8.5	3.8	5.1	4.7	5.8	5.0	4.6
Federal contributions (Branch 28)	9.9	6.9	5.8	-8.4	-2.8	-4.8	5.2	9.1	10.2	-5.0	2.1	4.2
FDI (US\$ millions)	2,012	1,308	251	373	556	-34	2,438	3,671	1,421	334	1,119	325

Table 4b.2 Economic indicators (cont.)

	Mexico City						Michoacán					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	4.3	2.6	1.2	0.8	0.4	3.4	4.1	3.0	2.5	5.0	4.0	4.1
Primary Sector	1.2	0.3	4.6	-14.9	-5.9	2.9	15.1	5.7	0.9	14.0	11.0	0.0
Secondary Sector	3.5	-0.1	-4.3	-1.8	-1.9	6.3	-0.8	-3.0	-2.1	-0.1	1.5	5.9
Tertiary Sector	4.3	2.9	1.8	1.1	0.7	3.1	3.8	4.0	3.8	4.4	3.4	4.4
Industrial Activity	3.6	-0.1	-3.9	-1.7	-0.6	5.2	-0.5	-3.0	-2.1	-0.1	1.5	6.2
Manufacturing Production	-1.9	-0.3	-0.9	-3.4	-3.8	2.5	1.3	1.3	-0.4	-2.7	-1.9	0.6
Construction	19.4	13.7	-0.5	31.7	12.3	26.6	8.1	-24.0	-13.3	2.9	15.5	35.2
Private Sector Works	19.1	25.8	4.5	19.6	-16.0	-5.3	44.5	-1.3	-2.4	43.5	7.5	45.5
Public Works	28.1	-1.7	-7.8	56.8	85.7	149.8	8.9	-41.3	-23.5	-25.0	31.1	24.7
Retail sales	22.6	0.2	0.3	-4.7	0.1	4.8	23.3	-0.8	1.5	0.4	1.7	3.0
Wholesale sales	10.0	2.3	-3.8	-5.9	-7.4	0.0	14.5	12.6	17.8	7.7	6.6	9.9
Pop. in employment (ENO***)¹	0.3	-0.4	-0.3	-0.6	1.5	4.4	2.6	-0.9	-1.4	0.0	2.9	3.9
Insured workers (IMSS)	3.6	3.4	3.1	2.4	2.2	2.8	5.0	6.9	7.0	7.7	7.8	5.6
Permanent	3.6	3.5	3.3	2.3	1.7	2.3	5.4	6.8	6.9	7.0	7.0	4.0
Casual labour, urban	3.8	2.2	2.1	3.3	5.3	6.1	-2.0	4.8	4.7	6.7	8.4	10.2
Federal contributions (Branch 28)	8.2	1.5	5.4	-10.6	0.0	1.5	9.2	2.0	0.4	-4.8	8.0	12.7
FDI (US\$ millions)	6,267	4,741	914	263	2,467	1,816	185	274	-15	107	114	23

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Morelos						Nayarit					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	3.1	4.9	-0.7	4.1	-2.1	2.9	3.8	2.4	2.3	3.9	1.3	-1.4
Primary Sector	10.5	4.0	8.2	12.7	-0.4	17.8	14.5	0.6	-5.1	-3.4	3.3	-7.3
Secondary Sector	4.0	11.4	-1.8	10.1	-10.8	4.8	3.1	-6.2	-3.9	-8.3	-6.8	-9.8
Tertiary Sector	2.6	2.0	-0.5	1.1	2.7	1.2	3.4	5.1	4.6	8.0	3.1	1.5
Industrial Activity	4.4	11.3	-0.2	10.2	-9.0	2.7	3.9	-5.9	-3.0	-7.9	-6.4	-9.7
Manufacturing Production	2.5	-1.7	-2.7	-5.5	4.1	9.2	0.0	-1.2	4.8	2.4	1.3	1.3
Construction	-25.0	77.9	27.5	60.7	-20.7	-6.1	5.0	0.1	17.7	-11.6	-10.0	3.6
Private Sector Works	-24.2	33.6	25.8	39.2	35.5	-20.4	32.6	23.3	1.0	29.6	10.4	50.1
Public Works	25.0	241.2	42.5	150.0	-55.9	21.0	-0.7	-14.0	52.0	-48.2	-52.9	-73.7
Retail sales	8.7	2.0	-4.3	-0.2	1.2	1.5	14.9	5.0	5.4	1.2	3.5	-1.1
Wholesale sales	9.8	2.3	5.6	4.5	5.0	6.3	9.0	9.0	16.8	6.3	9.7	6.2
Pop. in employment (ENO***)¹	2.4	2.1	-0.8	3.2	3.3	2.9	2.7	3.3	3.4	3.9	4.5	4.1
Insured workers (IMSS)	1.7	0.7	0.2	0.2	2.2	2.4	3.7	3.3	3.0	1.9	2.0	2.0
Permanent	1.7	0.7	0.3	0.1	2.0	2.3	4.1	1.9	0.8	0.6	1.1	2.1
Casual labour, urban	2.3	1.0	-0.1	0.4	2.4	3.3	2.0	9.5	11.2	8.5	6.9	2.8
Federal contributions (Branch 28)	1.3	8.0	2.5	-4.7	-0.2	-0.7	7.5	6.6	8.3	-13.8	-13.5	1.9
FDI (US\$ millions)	187	373	-15	46	78	142	87	133	36	26	33	5

Table 4b.2 Economic indicators (cont.)

	Nuevo León						Oaxaca					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	1.0	2.6	3.4	2.1	1.2	3.4	-0.9	-3.9	-6.2	-3.5	1.2	5.5
Primary Sector	-3.9	1.2	17.5	-8.5	3.0	2.8	3.3	0.4	1.9	-3.4	4.3	8.8
Secondary Sector	-4.2	-0.3	4.2	-0.2	0.0	2.9	-6.7	-15.8	-23.1	-15.3	3.2	15.8
Tertiary Sector	4.1	4.2	2.9	3.4	1.8	3.7	1.2	0.4	0.0	0.7	0.3	2.0
Industrial Activity	-4.4	0.1	4.7	-0.4	1.7	1.7	-6.6	-15.8	-22.8	-14.9	4.6	14.9
Manufacturing Production	-2.5	1.3	3.8	-0.8	-0.7	3.5	5.8	-16.8	-31.9	-29.3	-18.9	3.5
Construction	-21.5	0.9	6.8	5.9	14.5	-4.8	-29.1	-36.6	-43.8	7.1	176.4	93.7
Private Sector Works	-2.1	0.9	4.0	-5.6	7.6	-10.0	62.5	28.4	-19.5	76.3	102.8	67.5
Public Works	-57.5	13.3	25.6	87.9	61.3	21.7	-35.6	-51.0	-55.8	-10.5	254.9	148.2
Retail sales	17.6	1.1	-0.3	-1.5	1.0	0.2	9.5	0.0	-2.0	0.5	2.2	0.0
Wholesale sales	0.9	-0.9	-3.6	-0.9	-4.7	4.3	9.4	0.6	1.0	3.9	5.9	8.8
Pop. in employment (ENO***)¹	3.3	2.3	1.0	1.0	1.1	4.3	3.1	-1.3	-1.0	-1.2	3.5	3.1
Insured workers (IMSS)	4.3	4.7	5.0	4.5	4.5	4.3	1.2	2.9	2.9	5.1	6.6	5.0
Permanent	5.5	4.9	4.9	4.4	4.3	4.1	3.5	3.1	2.4	4.3	5.9	4.8
Casual labour, urban	-5.7	3.0	5.0	5.6	6.9	6.6	-13.3	1.9	6.6	11.1	12.2	7.3
Federal contributions (Branch 28)	13.2	1.6	3.5	-7.2	0.2	0.5	6.7	3.8	3.0	-3.1	-4.4	-1.6
FDI (US\$ millions)	2,868	2,074	262	791	1,227	498	192	418	81	164	81	48

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Puebla						Querétaro					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	3.3	6.8	8.3	4.4	0.8	5.9	7.3	4.2	3.4	5.0	4.2	4.1
Primary Sector	-0.9	2.7	10.1	-0.8	6.7	4.1	-1.5	8.6	6.9	12.7	5.7	3.2
Secondary Sector	4.6	13.9	17.3	6.1	-2.1	2.8	6.0	7.5	6.4	-2.8	-7.3	-3.0
Tertiary Sector	2.9	3.4	3.4	3.9	2.2	7.9	3.6	2.0	2.9	2.9	2.8	5.2
Industrial Activity	4.3	14.3	18.2	5.8	0.0	0.9	6.1	7.5	7.0	-2.5	-6.3	-4.3
Manufacturing Production	4.1	26.4	32.8	15.5	-0.6	-1.1	8.9	8.0	12.0	2.9	3.4	-1.9
Construction	9.4	-35.6	-40.7	-48.4	-10.0	23.8	1.5	0.2	-13.2	-29.8	-36.6	-23.0
Private Sector Works	6.9	-4.5	-17.5	-21.3	-6.3	-2.3	3.4	-12.5	-21.3	-39.2	-43.3	-24.4
Public Works	22.6	-65.4	-67.9	-75.2	14.9	130.8	0.6	34.6	19.8	-9.7	-27.9	-21.8
Retail sales	17.3	1.8	-0.3	0.6	2.2	4.3	29.0	-0.2	-3.9	-4.5	-0.1	-1.2
Wholesale sales	4.6	2.6	1.2	1.1	0.0	4.3	1.9	-6.8	-6.9	-10.2	-11.4	6.2
Pop. in employment (ENO)***)¹	3.3	3.2	-0.4	2.5	0.4	-0.6	1.2	1.9	2.3	3.8	6.8	8.0
Insured workers (IMSS)	4.1	5.7	6.2	5.4	5.7	5.5	7.5	8.3	8.4	8.5	7.2	6.1
Permanent	4.4	4.6	5.2	5.3	6.5	6.7	7.5	8.6	8.5	8.7	8.0	6.8
Casual labour, urban	2.5	11.4	11.4	5.9	2.6	-1.1	7.9	7.5	8.5	8.3	4.4	3.4
Federal contributions (Branch 28)	5.8	7.6	4.9	-4.2	2.4	-3.0	10.5	4.6	6.5	-3.5	-0.3	-3.5
FDI (US\$ millions)	1,324	954	-67	686	-37	464	990	1,029	255	87	458	208

Table 4b.2 Economic indicators (cont.)

	Quintana Roo						San Luis Potosí					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAE)**	4.4	4.3	4.4	0.9	-1.4	1.8	4.1	5.0	4.6	5.6	7.8	5.9
Primary Sector	0.4	7.9	4.4	26.9	-0.4	39.5	3.6	12.8	16.8	12.1	8.9	0.3
Secondary Sector	24.1	-15.0	-27.8	-10.6	-4.4	6.5	4.0	7.3	6.7	10.3	15.2	12.4
Tertiary Sector	5.3	7.1	8.6	7.0	5.3	3.6	4.3	3.1	2.5	2.1	2.7	2.0
Industrial Activity	24.4	-14.5	-27.7	-10.4	-4.4	6.6	4.1	7.4	7.2	10.6	16.8	11.3
Manufacturing Production	7.2	13.1	17.4	14.1	15.1	11.4	6.0	12.1	11.6	20.8	21.7	17.0
Construction	66.4	-22.0	-52.8	-30.0	-21.7	21.8	-0.1	-1.5	-4.2	-30.8	-8.0	-11.1
Private Sector Works	70.1	-35.9	-64.4	-34.0	-16.7	44.0	36.7	17.5	0.6	-29.0	-6.3	-1.5
Public Works	54.9	42.9	-9.5	-16.6	-29.1	-13.4	-35.0	-24.8	-4.6	-30.4	-6.6	-42.6
Retail sales	21.2	8.0	7.0	3.2	7.0	7.7	28.6	6.1	4.3	3.2	6.5	7.7
Wholesale sales	14.7	7.2	10.7	5.8	6.6	11.2	9.8	8.3	10.2	-4.2	3.9	4.7
Pop. in employment (ENO)***)¹	5.4	1.4	0.0	2.5	3.0	4.7	4.1	0.9	0.1	2.0	-0.1	2.2
Insured workers (IMSS)	10.1	10.3	11.0	10.7	10.9	11.6	4.6	7.1	7.8	7.5	6.6	5.1
Permanent	7.3	8.9	10.4	10.3	9.9	9.6	4.0	5.9	6.4	6.0	4.8	3.4
Casual labour, urban	18.5	14.6	12.7	11.9	13.4	16.4	8.0	12.9	14.1	14.1	14.8	12.3
Federal contributions (Branch 28)	4.9	8.4	4.7	4.8	2.6	14.6	12.2	16.7	7.1	7.1	-16.3	0.3
FDI (US\$ millions)	269	447	168	73	90	39	904	1,165	235	187	203	312

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Sinaloa						Sonora					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAEE**)	5.8	0.3	1.5	0.3	4.0	3.5	5.9	1.0	-1.2	-0.5	0.5	-0.2
Primary Sector	5.1	-7.3	-10.8	-3.5	24.4	-3.9	4.6	6.7	-3.5	0.2	9.0	-8.7
Secondary Sector	5.8	-4.7	-2.5	-1.0	3.3	10.9	9.0	-0.8	-3.4	-3.0	-3.3	-2.9
Tertiary Sector	5.8	3.0	3.5	1.5	0.4	2.7	3.3	1.9	1.3	1.9	3.2	4.2
Industrial Activity	5.4	-4.2	-1.4	-0.7	3.0	11.2	8.9	-0.6	-3.1	-3.2	-1.4	-4.0
Manufacturing Production	2.2	4.3	3.5	2.1	-0.4	4.5	1.8	-4.3	-6.1	-0.5	1.1	-2.1
Construction	23.9	-32.3	-25.0	-32.8	-0.2	12.5	17.1	11.7	0.6	-20.0	-22.6	-28.6
Private Sector Works	15.8	-14.3	-15.0	-36.7	-10.6	-24.5	10.0	-3.9	-21.1	-6.5	-15.2	-22.3
Public Works	38.4	-48.1	-41.9	-27.4	17.8	108.4	31.8	50.1	39.2	-35.8	-31.0	-36.3
Retail sales	26.0	4.8	1.3	-0.3	-0.1	3.3	19.4	2.5	-1.2	-1.4	0.4	1.0
Wholesale sales	17.0	-0.5	-2.4	1.2	1.1	0.6	16.2	-0.8	-5.3	-7.9	-1.2	2.1
Pop. in employment (ENOE***)¹	1.8	1.3	0.7	-0.7	4.6	-1.1	1.7	1.9	0.6	1.3	2.4	1.5
Insured workers (IMSS)	6.3	4.2	4.3	3.9	4.4	4.8	3.3	4.6	4.6	4.4	3.0	2.8
Permanent	5.5	4.6	4.8	3.9	4.4	3.8	3.0	4.4	4.6	4.5	3.1	2.9
Casual labour, urban	11.2	-0.7	-3.1	-2.9	-4.5	2.0	3.6	4.4	4.9	5.6	1.1	0.6
Federal contributions (Branch 28)	4.5	7.5	8.1	0.7	1.2	-0.1	1.7	8.4	4.4	-0.6	1.9	2.4
FDI (US\$ millions)	426	759	207	274	150	304	513	254	-135	-268	463	144

Table 4b.2 Economic indicators (cont.)

	Tabasco						Tamaulipas					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAEE**)	-5.9	-6.3	-3.2	-6.4	-3.4	-6.8	0.0	-0.5	-1.1	0.9	0.5	1.6
Primary Sector	2.5	3.8	-2.1	6.6	-0.9	5.8	8.3	-1.5	-0.5	4.2	1.3	5.9
Secondary Sector	-8.1	-10.0	-5.8	-9.2	-4.9	-8.6	-2.0	-3.9	-4.2	0.2	0.9	2.2
Tertiary Sector	-1.5	1.0	1.9	-1.9	-0.7	-4.0	1.0	1.9	0.8	1.2	0.1	1.0
Industrial Activity	-8.4	-9.6	-5.7	-8.9	-5.2	-8.6	-2.3	-3.6	-4.1	0.7	1.5	1.3
Manufacturing Production	-4.3	1.9	-1.7	-4.8	-5.2	-6.5	-1.3	-0.4	-0.7	2.7	-0.9	-0.9
Construction	-42.5	-14.6	8.9	19.3	77.3	27.8	0.0	-13.9	-23.5	-11.3	-16.7	15.4
Private Sector Works	-31.7	-16.1	-26.9	0.2	-3.3	5.8	-0.8	-14.0	-12.8	0.9	-24.6	29.1
Public Works	-39.0	-5.9	49.3	30.8	176.5	66.0	5.4	-8.8	-28.1	-22.1	-3.4	16.7
Retail sales	-1.7	-8.5	-9.1	-8.1	-4.3	1.7	10.4	0.7	-1.8	-1.6	0.9	1.3
Wholesale sales	5.3	-7.1	-8.9	-10.7	-5.6	-5.3	4.3	6.3	-1.6	-2.8	-14.2	-6.5
Pop. in employment (ENOE***)¹	2.4	-1.0	3.2	-2.7	0.7	5.1	4.1	0.8	-0.2	1.0	2.1	4.4
Insured workers (IMSS)	-8.6	-4.6	-3.5	-2.8	-2.6	-1.7	1.9	4.5	4.8	5.4	5.4	4.6
Permanent	-5.2	-4.5	-3.7	-3.5	-3.4	-2.9	2.5	4.4	4.7	4.8	4.9	4.4
Casual labour, urban	-26.4	-6.6	-3.8	-0.3	0.5	2.5	-3.1	6.1	6.3	11.0	11.0	7.1
Federal contributions (Branch 28)	3.4	-8.3	-8.4	-5.5	2.4	14.5	6.3	2.9	4.1	-8.7	1.8	5.0
FDI (US\$ millions)	248	382	41	84	189	29	1,177	1,474	266	338	415	287

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

Table 4b.2 Economic indicators (cont.)

	Tlaxcala						Veracruz					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAEE**)	1.5	-1.4	-2.4	-0.1	0.8	-2.4	0.7	-1.3	-1.2	-3.2	-0.8	2.2
Primary Sector	-2.0	-2.4	2.2	-2.1	-0.4	0.5	-2.9	4.3	1.4	5.6	1.3	2.8
Secondary Sector	0.0	-7.7	-10.0	-1.2	0.6	-9.2	0.5	-9.2	-8.8	-13.7	-3.8	3.2
Tertiary Sector	2.8	2.3	1.8	0.7	0.9	0.9	1.1	2.4	2.6	1.7	0.6	1.7
Industrial Activity	1.0	-7.2	-9.7	-1.4	1.1	-9.0	0.0	-8.8	-8.4	-13.5	-3.4	2.5
Manufacturing Production	3.6	-0.4	-3.4	0.0	2.3	-1.5	1.9	-6.9	-6.6	-8.3	-2.8	6.1
Construction	-23.0	-32.2	-38.8	-31.2	-45.0	-70.2	-3.3	-31.2	-35.2	-34.5	-19.6	6.9
Private Sector Works	-23.1	-13.3	-31.8	-34.4	-62.4	-70.8	-35.3	-9.9	18.3	-5.7	-1.3	50.8
Public Works	-9.4	-39.8	-46.1	-29.6	6.9	-63.6	17.1	-33.4	-49.4	-41.3	-25.3	-11.2
Retail sales	22.0	-0.1	-2.8	-3.3	0.6	1.8	13.2	-3.9	-2.9	-0.8	0.3	2.1
Wholesale sales	20.8	10.5	11.5	-0.8	-12.7	-14.5	10.1	0.6	-3.6	-1.3	-9.4	2.1
Pop. in employment (ENOE***)¹	3.4	1.8	2.1	0.7	1.5	2.1	-1.9	3.0	2.9	1.9	2.9	1.3
Insured workers (IMSS)	5.9	8.1	6.6	6.8	3.8	4.0	-2.4	-0.1	0.2	1.4	1.4	2.0
Permanent	4.7	8.8	8.3	6.8	3.6	2.7	0.2	0.0	0.1	0.7	1.1	1.9
Casual labour, urban	10.2	5.6	2.0	6.3	4.5	7.6	-15.3	-1.8	0.3	4.6	2.7	3.3
Federal contributions (Branch 28)	6.9	3.9	2.5	-7.6	-1.2	-2.1	4.9	10.3	10.3	-0.6	6.2	-1.0
FDI (US\$ millions)	213	159	63	5	89	15	1,087	1,105	208	286	316	95

Table 4b.2 Economic indicators (cont.)

	Yucatán						Zacatecas					
	2016	2017	3Q17	4Q17	1Q18	2Q18	2016	2017	3Q17	4Q17	1Q18	2Q18
Economic Activity (ITAEE**)	4.1	2.8	3.4	1.3	3.4	5.8	-1.3	0.1	-1.7	-0.9	2.0	-0.2
Primary Sector	2.6	5.9	5.6	2.1	-0.4	15.0	18.5	1.9	-5.4	-1.7	-10.6	-1.6
Secondary Sector	8.5	3.7	2.1	1.0	6.5	5.1	-8.6	-3.9	-1.2	-6.7	6.2	-2.9
Tertiary Sector	2.6	2.4	3.8	1.4	2.4	5.7	1.6	2.8	-1.1	3.2	0.2	1.8
Industrial Activity	8.6	3.7	2.1	1.3	7.5	3.8	-8.7	-3.6	-1.2	-6.7	6.9	-3.3
Manufacturing Production	14.5	5.9	4.2	1.3	2.2	1.0	-2.0	-5.2	-2.8	-3.6	18.6	13.4
Construction	20.7	-2.8	-11.9	8.2	29.8	25.7	70.2	23.2	22.6	11.6	139.2	-10.2
Private Sector Works	18.9	4.6	-1.3	3.9	19.5	32.0	135.0	47.3	47.2	14.9	186.5	-4.1
Public Works	30.9	-18.8	-39.9	26.7	89.9	6.4	-7.7	-25.4	-38.8	-3.9	77.6	-36.6
Retail sales	13.8	-1.0	-0.1	0.0	4.8	5.4	21.8	0.4	-5.7	-4.9	-1.2	0.1
Wholesale sales	6.5	-3.8	-9.6	-4.4	-4.2	4.3	4.9	12.1	8.9	13.0	-2.5	1.4
Pop. in employment (ENOE***)¹	3.2	1.7	0.6	-0.6	0.5	2.7	2.3	2.3	-0.4	1.4	-0.6	-0.5
Insured workers (IMSS)	4.4	4.3	4.4	4.1	3.7	3.5	3.6	3.2	3.2	4.3	6.4	7.5
Permanent	3.8	4.1	4.3	4.2	3.9	3.9	4.3	3.1	2.7	3.3	5.0	6.8
Casual labour, urban	10.5	6.2	5.0	2.5	2.4	0.2	-1.6	3.8	6.0	10.2	14.3	11.0
Federal contributions (Branch 28)	4.7	7.6	2.9	2.9	-0.2	7.0	13.8	3.1	2.4	-2.2	-4.6	2.8
FDI (US\$ millions)	122	111	6	-15	56	7	531	313	-65	239	112	3

* All indicators except those of FDI are shown in percentage annual changes of real quantities

** Quarterly Indicator of State Economic Activity

*** National Occupation and Employment Survey

1: The employed pop. (over 15 years of age) includes as a sub-group workers insured with the IMSS and it is a more representative indicator of national employment

Source: INEGI, STPS (Secretariat of Labour and Social Welfare), SHCP (Finance Ministry) and SE (Secretariat for the Economy)

5. Special topics included in previous issues

First half 2018

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Railway efficiency and investment: tracks towards higher growth

Second half 2017

Exports to expand the agricultural sector
The formal trade sector faces macroeconomic shocks and increasing informality
Greater integration between Mexico and the US

Second half 2016

The automotive Industry in Mexico, towards new routes
Asymmetric regulation of the telecommunications sector in Mexico
NAFTA and the increased economic complexity of Mexico

First half 2016

The economic impact of lower oil prices on hydrocarbon producing states
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The future challenge will be to integrate petrochemicals with the domestic oil and gas industry

Second half 2015

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The resilience of the automotive industry worldwide
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Comparing residential electricity consumption between 2028 and 2014

Second half 2014

Relevant issues around some of the secondary energy laws
Mexico consolidates its position as a powerful global automotive exporter
Domestic and international tourism: a two-speed story

First half 2014

Mexico's major challenge is maintaining and winning participation in global value chains
Manufacturing exports gained competitiveness over the last decade
Energy reform and the implementation challenges for hydrocarbon production

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