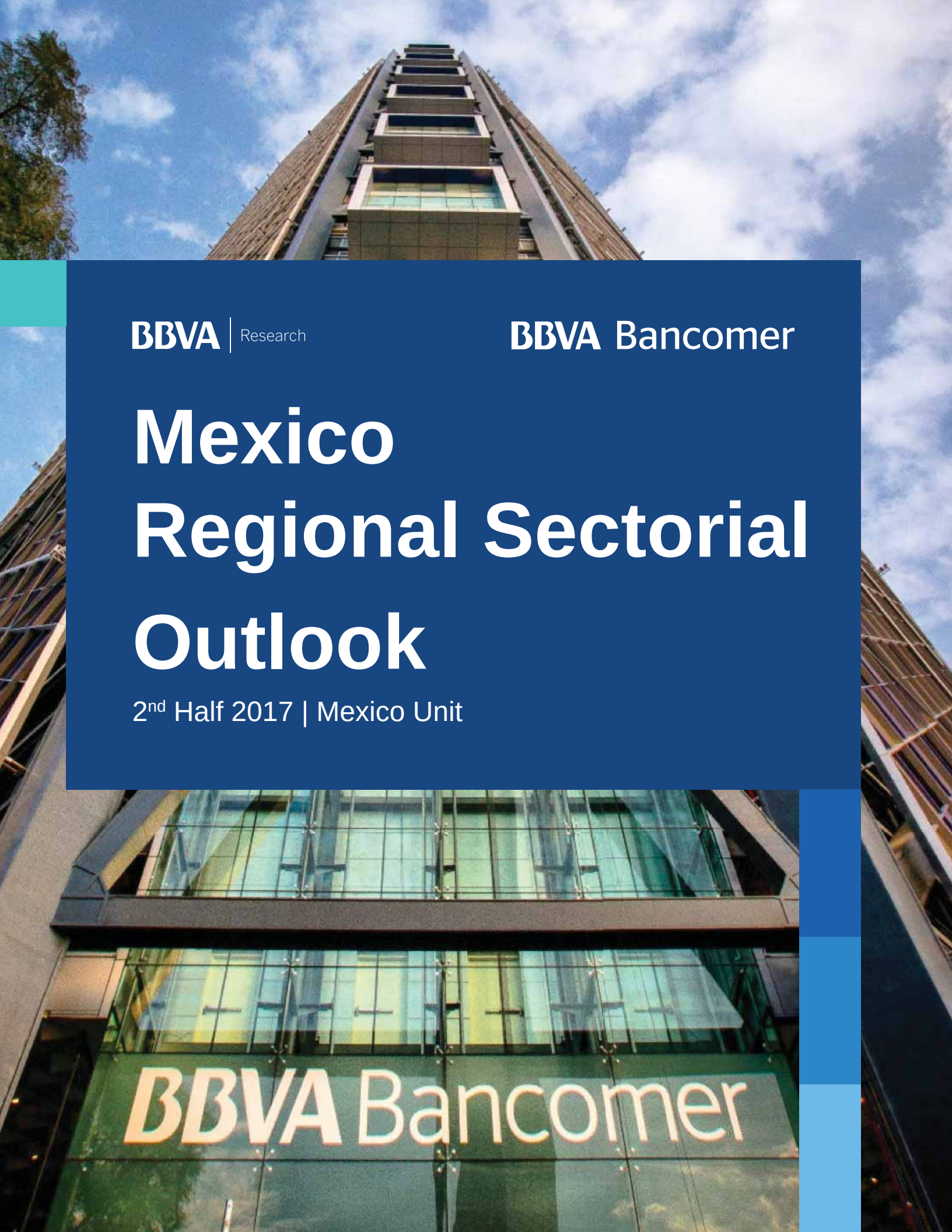


BBVA | Research

BBVA Bancomer

Mexico Regional Sectorial Outlook

2nd Half 2017 | Mexico Unit

BBVA | Research

Index

Closing date: **6 October 2017**

1. Summary

In this issue of the ***Mexico Regional Sectorial Outlook***, we present the performance of the economies at state level, as well as their short-term perspective. The distinction is made between activities in order to understand their performance. Thus it was found that the vast majority of states have tertiary activities as the major source of economic momentum. The exceptions are Campeche, Coahuila and Tabasco, where secondary activities, and in particular Mining, have a greater share. More diversified state economies have a better outlook for growth. In the same section, it was found that the size of the states was important, that the larger they are, the greater the number of paid workers, both in the number of workers registered with the IMSS and generally based on information from the National Survey of Occupation and Employment (ENOE).

As regards the sectoral situation, with an economy advancing at a rate of 2.2%, tertiary activities are consolidated as the main engine of growth in 2016 and 2017; within them, the commerce sector presents the greatest contribution. Manufacturing has shown a recovery so far this year, but which is insufficient to reverse the fall experienced by the rest of the secondary activities. The improved progress in services and manufacturing within the secondary sector is also reflected in employment.

In the topics being analysed, one section has been dedicated to the primary sector, analysing its evolution and composition in recent years. The main Mexican agricultural products are noted, as well as the structural characteristics associated with the low performance of the sector. The relationship between the national food industry and primary activities is set out, as well as their joint evolution. We also address the issue of agricultural exports and the degree of dependence on US demand.

We analyse the momentum of the trade sector, which represents 16.3% of GDP, from its contribution to Total GDP, the evolution of its branches and subsectors. We discuss the issue of informal employment in the sector, the share of which has been maintained. Additionally, we review the impact on trade of the depreciation of the peso at the end of 2016 and early 2017. As regards the credit portfolio, the trade segment is seeing growing momentum, in contrast to the negative trend in credit for private consumption.

With respect to the secondary sector, and in particular to manufacturing, a study has been made of the contribution in value added by Mexican manufacturing in the international trade of goods, taking into account its integration in global value chains. In particular, the value added contained in US imports from Mexico has been calculated for two years: 2004 and 2014. It is noted that the contribution of US value added in its imports from Mexico has increased.

2. Sector and regional analysis

2.a Financial Services and Telecommunications lead growth

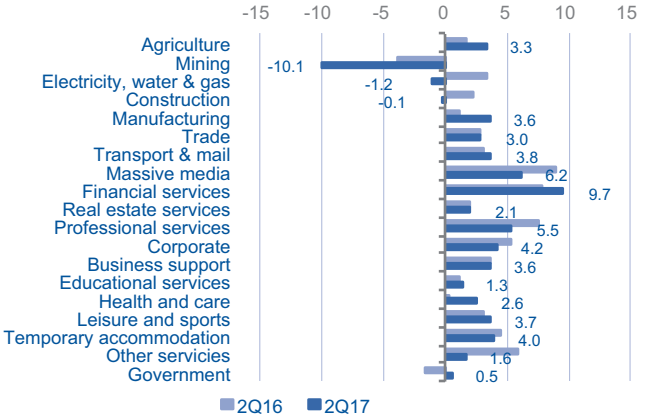
A structural feature of the Mexican economy is that the services sectors are the ones that contribute most to the Gross Domestic Product (GDP), even though the Manufacturing Industry is the one with the highest share. This means the performance of services for the most part dictates the direction of the economy. This is evidenced by the contribution to the growth of tertiary activities compared to the rest. On this occasion, we can also see this result by contrasting the performance of secondary activities against services. The former in the main have fallen, except for the Manufacturing Industry; while the services sectors with the greatest weight continue to grow, as is the case of Financial Services and Insurance, as well as Mass Media Information, which has been driven by the telecommunications industry. We estimate that this trend will continue at the end of 2017.

Growing services, secondary sectors on the downside

The most dynamic sectors of the Mexican economy continue to be Financial Services and Insurance along with Mass Media Information. In the second quarter of 2017 (2Q17), the former grew 9.7% and the second 6.2%, both at an annual rate. This trend has remained the same in recent quarters. As we have mentioned before, this is attributed to greater access to finance due to strong competition among credit institutions, as well as greater competition in the telecommunications sector as a result of the 2014 reform. Thirdly, the GDP of Professional, Scientific and Technical Services continues to display high momentum, with its increase in the same period being 5.5% in annual terms.

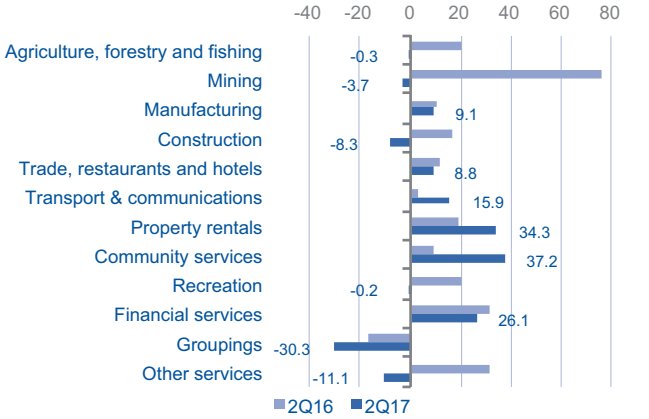
GDP of Financial Services and Insurance grows almost 10% a year

Figure 2a.1 Accumulated Sector GDP
YoY % change



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

Figure 2a.2 Total credit balance by sector
YoY % change

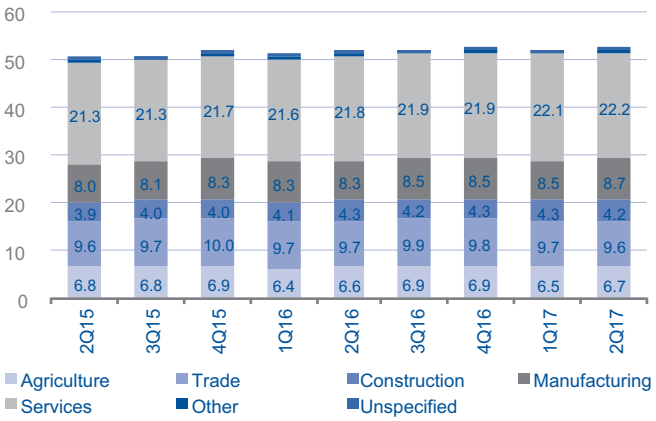


Source: BBVA Research based on Bank of Mexico data

In the middle of this year 2017, the Mining sector continues to fall as it has done since 2016. In the previous issue of ***Mexico Regional Sectorial Outlook***, we noted the negative performance of Mining, as the only sector that fell in the third quarter of 2016 (3Q16). Now there are two other secondary sectors: Electricity, Water and Gas and also Construction that have negative rates in their Gross Domestic Product (GDP). Mining GDP fell at an annual rate of 10%, while the Electricity, Water and Gas sector contracted at an annual rate of 1.2% and Construction had a slight decrease of 0.1%. One of the consequences of the reduced activity in these sectors is that they require less financing, with the result that the bank credit balance has decreased.

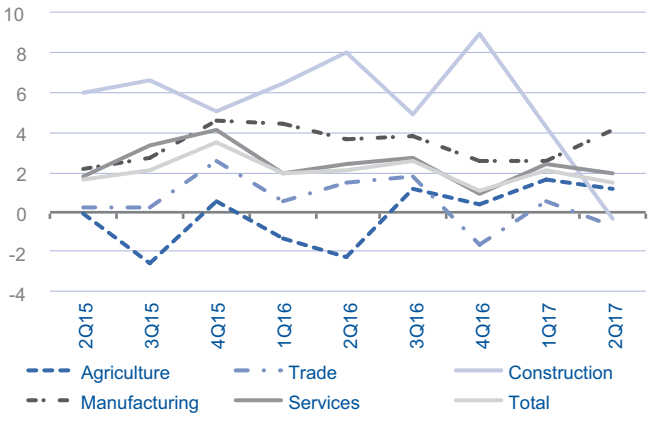
The improved progress in the services sector is also reflected in terms of employment. According to the National Survey of Occupation and Employment (ENOE) carried out by INEGI, the total number of employed persons only grew by 0.2 million from 3Q16 to 2Q17. However, paid service workers increased by 0.3 million. The Manufacturing sector was the second largest generator of paid jobs with around 0.2 million workers. On the other hand, Construction, which is one of the most labour-intensive sectors, remained virtually unchanged.

Figure 2a.3 Paid Employees by Sector
Millions of workers



Source: BBVA Research based on data from ENOE, INEGI

Figure 2a.4 Paid Employees by Sector
YoY % change



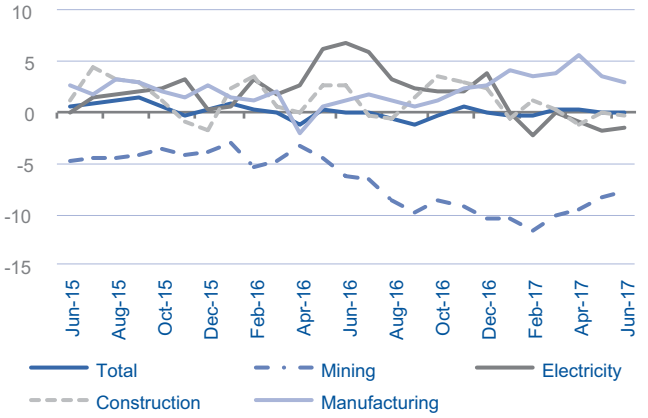
Source: BBVA Research based on data from ENOE, INEGI

Manufacturing GDP grows 3.6% in 2Q17

Of the four secondary sectors, only Manufacturing grew by the midpoint of 2017. The good pace of manufacturing was due more to the increase in exports. In particular, Transport Equipment and Computer and Communication Equipment have led manufacturing in the last four quarters, which is not a novelty. This momentum in the secondary sectors can be confirmed by observing Industrial Activity, which on average remained in negative territory for all these sectors except Manufacturing.

Also the secondary sectors are those that have absorbed more increases in prices. The National Producer Price Index (INPP) for 2Q17 shows an increase of almost 24% for the Electricity, Water and Gas sector; followed by 11.3% for Construction. This partly explains its reduced activity, but not wholly. For example, in Construction the steady decline of public works is the main cause of the fall in GDP in this sector. On the other hand, the increase in the INPP, although it has a negative influence on the activity, is not a determining factor, at least for manufacturing. This last sector suffered the fourth highest increase in the INPP, with 7.1% during the same period, despite being the most dynamic within the secondary sectors. In this case, the increase is associated with electricity tariffs and some imported inputs that increased their prices following the depreciation.

Figure 2a.5 Industrial activity
YoY % change



Source: BBVA Research based on data from SCNM and INEGI

Table 2a.1 National Producer Price Index
% Change 3Q15 to 3Q16

Num.	Code	Sector	Inflation
1	11	Farming	9.4
2	21	Mining	1.9
3	22	Electricity, water and gas	23.9
4	23	Construction	11.3
5	31-33	Manufacturing	7.1
6	48-49	Transport and postal services	5.6
7	51	Mass media	0.6
8	53	Real estate services	2.8
9	54	Professional services	3.0
10	56	Business support	4.5
11	61	Educational services	4.4
12	62	Health and welfare	4.4
13	71	Leisure, culture and sport	5.0
14	72	Temporary accommodation	5.4
15	81	Other services	4.2

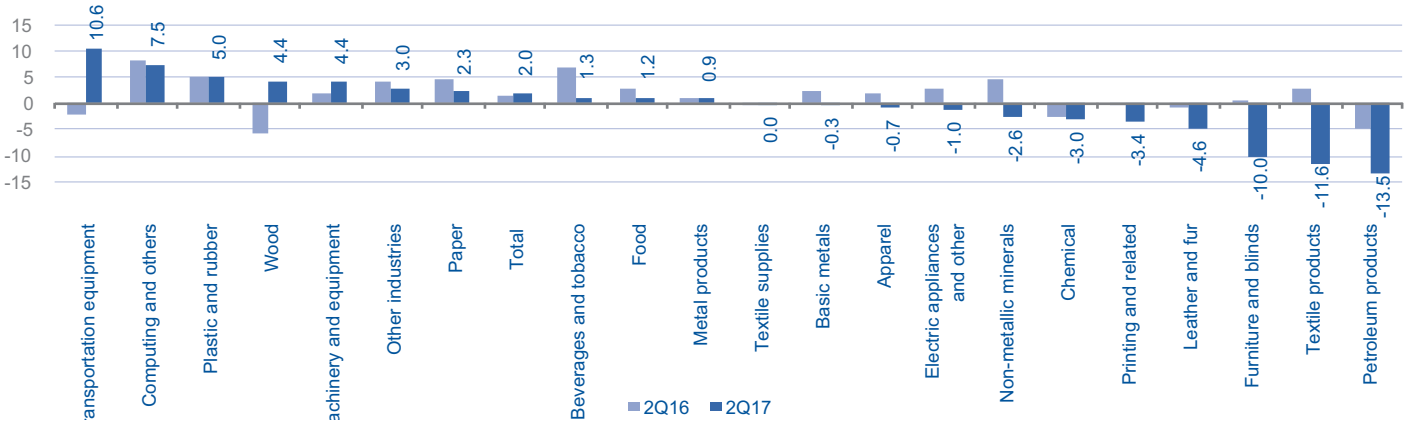
Source: BBVA Research based on data from SCNM and INEGI

Manufactured goods for export drive the industry

Manufactures contribute 16.6% of Total GDP

During 2016 the Manufacturing Industry contributed 16.6% of Total GDP, for 2017 we estimate that it will be 16.7% and that it will remain the most important sector of the economy in these terms. In the middle of 2016 we saw a decrease in the production of Transportation Equipment, which was recovered in the following 12 months to reach an increase of more than 10% in 2Q17. In this same period, the Manufacturing of Computer and Communication Equipment had a 7.5% increase, being followed by the Plastics Industry with 5%, all in annual terms. These three sub-sectors are Mexico's main exports, mostly to the North American region, either as final products or as inputs in global value chains.

Figure 2a.6 Manufacturing Gross Domestic Product
YoY % change 3T15 to 3T16

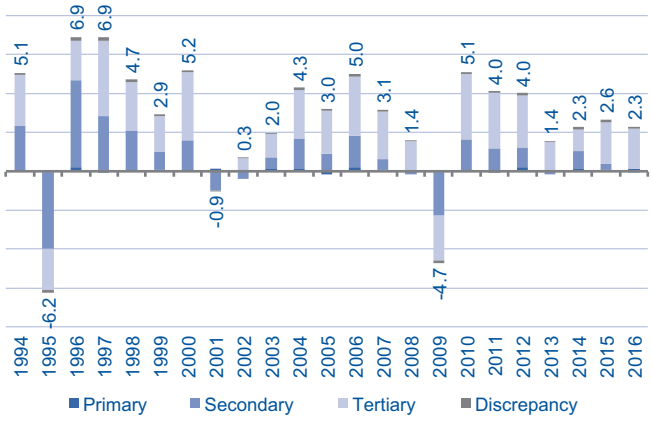


Source: BBVA Research based on data from SCNM and INEGI

We estimate that by 2017 both the production of Transport Equipment and Computer and Communication Equipment will continue to have the highest increases with 7.9% and 6.4% respectively. In third place comes the manufacturing of Machinery and Equipment, followed by Metallic Products and the Plastics Industry with growth rates of 4.5% for the first two and 4.1% for the third, all in annual terms. It can be observed that some of these subsectors are highly related to each other as some are inputs for the others such as Metallic Products and the Plastics Industry for the other three, which explains a shared momentum.

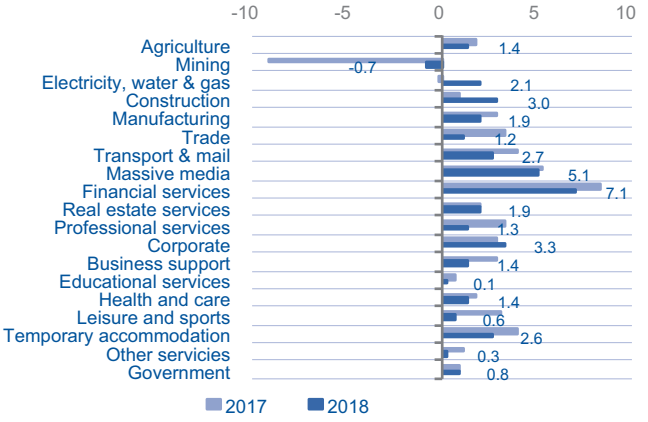
The structure of the Mexican economy leads the services sectors to contribute most of the GDP and the contribution to its growth. For example, by the end of 2016, the economy grew 2.3%, in a year in which the services sector contributed 2.1%. Within services, Commerce and Real Estate Services are the sectors with the largest share, standing at around 16% and 12% respectively. However, in terms of contribution to growth, Financial Services and Insurance, together with Mass Media Information, have occupied the top two places for more than a year. Our estimation of the sectorial GDP for 2017 maintains this trend and we expect that this year these two sectors will grow by 7.1% and 5.1% each. The Manufacturing Industry, which is the largest sector, will continue to rise, but at a more modest rate of 3.0% per year. In a similar dynamic we estimate that Commerce in 2017, the sector with the second-largest share of GDP, will increase by 3.2%, also at an annual rate.

Figure 2a.7 Contribution to GDP
YoY % change



Source: BBVA Research based on data from SCNM and INEGI

Figure 2a.8 Estimation of sectoral GDP
YoY % change



Source: BBVA Research based on data from SCNM and INEGI

2.b Sectoral outlook

Table 2b.1 Mexico, Indicators and sectorial forecasts, production base 2008=100, sa

	Annual % change											
	2015	2016	2017	2018	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17
Total GDP	2.7	2.0	**2.2**	**2.0**	2.3	1.5	2.0	2.3	2.6	3.0	**1.6**	**1.6**
Primary	1.7	3.5	**1.7**	**1.4**	-1.1	4.2	5.1	5.6	6.0	0.9	**-0.6**	**0.6**
Secondary	1.0	0.0	**-0.2**	**1.7**	1.4	-0.5	-0.9	0.0	-1.0	0.5	**0.0**	**-0.4**
Mining	-4.5	-6.5	**-9.2**	**-0.7**	-3.6	-4.7	-7.7	-10.0	-11.3	-8.5	**-9.0**	**-7.7**
Electricity, water, and supply of gas	2.3	3.3	**-0.3**	**2.1**	1.3	5.8	3.7	2.6	-0.2	-1.8	**0.4**	**0.5**
Construction	2.6	1.8	**1.0**	**3.0**	2.9	1.4	-0.1	3.1	-0.5	0.4	**2.5**	**1.6**
Manufacturing	2.4	1.0	**3.0**	**1.9**	0.8	0.4	0.6	2.2	4.5	4.0	**2.2**	**1.3**
Tertiary	3.5	3.2	**3.3**	**2.1**	3.3	2.6	3.3	3.4	3.8	4.1	**2.6**	**2.6**
Retail trade	4.8	1.9	**3.2**	**1.2**	2.5	1.6	1.2	2.4	3.9	4.4	**2.6**	**2.1**
Transportation, mail and storage	4.3	2.5	**3.9**	**2.7**	1.8	2.3	2.7	3.1	4.7	4.6	**3.0**	**3.5**
Information in mass media	7.6	10.1	**5.3**	**5.1**	9.3	9.9	13.2	8.1	5.8	7.3	**3.2**	**4.8**
Insurance and financial services	4.3	7.7	**8.4**	**7.1**	7.7	7.7	7.8	7.5	9.1	10.0	**7.1**	**7.6**
Real estate and leasing services	2.5	1.9	**1.9**	**1.9**	2.0	1.6	1.9	1.9	2.3	1.8	**1.6**	**2.0**
Prof., scientific, and technical serv.	4.5	7.7	**3.3**	**1.3**	7.0	6.8	11.2	5.9	6.0	4.4	**1.5**	**1.4**
Corporate and company leadership	3.3	4.7	**2.8**	**3.3**	5.8	5.1	5.5	2.5	5.4	3.3	**0.4**	**2.2**
Business support serv.	1.2	4.0	**3.0**	**1.4**	3.2	3.6	2.9	6.2	3.8	3.1	**3.5**	**1.4**
Educational services	0.0	1.1	**0.7**	**0.1**	0.8	1.5	1.4	0.6	1.6	0.9	**0.3**	**0.1**
Health and social welfare services	-2.3	1.3	**1.9**	**1.4**	-0.8	1.5	2.3	2.1	1.7	3.4	**1.2**	**1.2**
Leisure and relaxation, cult., & sports serv.	3.9	5.2	**3.1**	**0.6**	2.2	4.1	9.5	4.9	4.8	4.7	**1.4**	**1.6**
Hotel, motel, lodging & prep. of food & bev.	5.7	4.0	**4.1**	**2.6**	6.5	3.1	2.6	3.8	0.9	6.6	**3.9**	**4.9**
Other serv. except gov't activities	2.5	5.8	**1.2**	**0.3**	5.2	6.3	6.2	5.7	3.4	-0.2	**1.5**	**0.3**
Government activities	2.7	0.0	**0.8**	**0.8**	-3.0	-0.7	1.7	2.1	0.8	0.2	**1.2**	**1.0**

	Share, %				Contribution to growth, pp			
	2015	2016	2017	2018	2015	2016	2017	2018
Total GDP	100.0	100.0	**100.0**	**100.0**	2.7	2.0	**2.2**	**2.0**
Primary	3.1	3.1	**3.1**	**3.1**	0.1	0.1	**0.1**	**0.0**
Secondary	33.2	32.5	**31.8**	**31.7**	0.3	0.0	**-0.1**	**0.5**
Mining	6.8	6.2	**5.6**	**5.4**	-0.3	-0.4	**-0.6**	**0.0**
Electricity, water, and supply of gas	2.3	2.3	**2.3**	**2.3**	0.1	0.1	**0.0**	**0.0**
Construction	7.3	7.3	**7.2**	**7.3**	0.2	0.1	**0.1**	**0.2**
Manufacturing	16.8	16.6	**16.7**	**16.7**	0.4	0.2	**0.5**	**0.3**
Tertiary	61.0	61.6	**62.3**	**62.4**	2.1	1.9	**2.0**	**1.3**
Retail trade	15.7	15.7	**15.9**	**15.7**	0.7	0.3	**0.5**	**0.2**
Transportation, mail and storage	5.9	5.9	**6.0**	**6.1**	0.3	0.1	**0.2**	**0.2**
Information in mass media	3.5	3.7	**3.8**	**4.0**	0.3	0.3	**0.2**	**0.2**
Insurance and financial services	4.6	4.8	**5.1**	**5.4**	0.2	0.3	**0.4**	**0.4**
Real estate and leasing services	11.9	11.8	**11.8**	**11.8**	0.3	0.2	**0.2**	**0.2**
Prof., scientific, and technical serv.	2.2	2.3	**2.3**	**2.3**	0.1	0.2	**0.1**	**0.0**
Corporate and company leadership	0.6	0.6	**0.6**	**0.6**	0.0	0.0	**0.0**	**0.0**
Business support serv.	3.1	3.1	**3.2**	**3.1**	0.0	0.1	**0.1**	**0.0**
Educational services	3.5	3.5	**3.4**	**3.4**	0.0	0.0	**0.0**	**0.0**
Health and social welfare services	1.8	1.8	**1.8**	**1.8**	0.0	0.0	**0.0**	**0.0**
Leisure and relaxation, cult., & sports serv.	0.4	0.5	**0.5**	**0.4**	0.0	0.0	**0.0**	**0.0**
Hotel, motel, lodging & prep. of food & bev.	2.1	2.2	**2.2**	**2.2**	0.1	0.1	**0.1**	**0.1**
Other serv. except gov't activities	2.0	2.1	**2.1**	**2.1**	0.1	0.1	**0.0**	**0.0**
Government activities	3.6	3.5	**3.5**	**3.4**	0.1	0.0	**0.0**	**0.0**

Note: forecasts appear in **boldface**. All figures are subject to review by the Institute.
sa: Seasonally adjusted; pp: Percentage points
Source: BBVA Research with INEGI data

Table 2b.2 Mexico: Indicators and sectorial forecasts, manufacturing production base 2008=100, sa

	Annual % change											
	2015	2016	2017	2018	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17
Total	2.4	1.0	**3.0**	**1.9**	0.8	0.4	0.6	2.2	4.5	4.0	**2.2**	**1.3**
Food	1.7	2.6	**1.7**	**1.3**	0.9	2.9	2.8	3.8	3.2	1.2	**1.1**	**1.2**
Beverages and tobacco	4.9	5.3	**1.4**	**2.6**	6.8	7.2	2.3	5.1	2.0	1.3	**1.4**	**1.1**
Textile inputs	3.8	-0.6	**1.8**	**0.0**	1.6	-0.1	-1.9	-2.0	3.9	0.0	**1.9**	**1.4**
Production of textile products	9.7	4.1	**-3.9**	**2.1**	3.0	2.4	4.4	6.5	-10.3	-11.9	**3.3**	**3.0**
Apparel	7.0	-1.8	**-0.7**	**0.2**	2.9	1.7	-4.2	-7.0	-0.1	-0.9	**-0.4**	**-1.2**
Leather and fur products	2.4	-1.6	**-2.5**	**-1.7**	2.2	-0.8	-5.1	-2.6	-3.3	-4.7	**2.6**	**-4.3**
Lumber industry	3.7	-4.8	**4.1**	**1.6**	-7.6	-5.6	-3.5	-2.7	7.4	4.5	**2.7**	**1.9**
Paper industry	3.9	3.4	**3.2**	**3.3**	3.7	4.9	2.5	2.4	2.5	2.3	**3.3**	**4.5**
Printing and related industry	1.7	-2.8	**-2.4**	**0.3**	-4.0	0.1	-1.5	-5.6	-3.5	-3.2	**-1.6**	**-1.2**
Oil products	-7.4	-11.4	**-13.7**	**-3.5**	0.6	-4.8	-18.6	-22.3	-12.8	-13.4	**-14.0**	**-15.0**
Chemicals	-3.0	-2.8	**-1.6**	**-2.3**	-1.3	-2.2	-2.8	-4.7	1.4	-2.9	**-2.9**	**-2.0**
Plastic and rubber products	3.4	3.2	**4.5**	**5.5**	3.4	5.0	2.5	1.9	5.9	5.1	**3.4**	**3.6**
Non-metal mineral products	4.8	2.8	**-0.1**	**0.9**	1.8	4.8	2.5	2.2	3.4	-2.6	**-0.5**	**-0.9**
Basic metal products	-4.2	3.3	**3.3**	**3.9**	-3.0	2.6	1.0	13.2	8.8	-0.4	**5.0**	**0.4**
Metallic products	2.9	3.3	**4.5**	**6.8**	4.7	1.3	1.9	5.4	6.2	1.0	**7.3**	**3.7**
Machinery and equipment	0.2	3.2	**5.5**	**3.8**	4.5	2.0	0.7	5.7	7.0	4.5	**8.0**	**2.7**
Computers and electronics	7.0	6.1	**6.4**	**6.4**	6.5	8.9	5.5	3.8	8.0	7.9	**5.8**	**4.2**
Electrical equipment	6.3	3.6	**2.4**	**2.2**	2.3	2.9	3.0	6.1	7.1	-0.9	**2.4**	**1.1**
Transportation and equipment	7.0	0.2	**7.9**	**4.3**	-3.2	-1.9	3.2	2.7	12.5	10.7	**5.2**	**3.7**
Furniture and related products	8.5	-3.1	**-0.9**	**-0.7**	-3.4	0.3	-1.5	-8.2	2.9	-10.1	**-2.7**	**7.3**
Other manufacturing industry	4.9	3.3	**4.0**	**3.6**	4.4	4.2	3.7	0.9	6.8	3.0	**3.1**	**3.3**

	Share, %				Contribution to growth, pp			
	2015	2016	2017	2018	2015	2016	2017	2018
Total	100.0	100.0	**100.0**	**100.0**	2.4	1.0	**3.0**	**1.9**
Food	20.9	21.2	**20.9**	**20.8**	0.4	0.5	**0.4**	**0.3**
Beverages and tobacco	5.1	5.3	**5.2**	**5.3**	0.2	0.3	**0.1**	**0.1**
Textile inputs	0.7	0.7	**0.7**	**0.7**	0.0	0.0	**0.0**	**0.0**
Production of textile products	0.6	0.6	**0.6**	**0.6**	0.1	0.0	**0.0**	**0.0**
Apparel	2.4	2.4	**2.3**	**2.2**	0.2	0.0	**0.0**	**0.0**
Leather and fur products	0.8	0.7	**0.7**	**0.7**	0.0	0.0	**0.0**	**0.0**
Lumber industry	1.0	0.9	**0.9**	**0.9**	0.0	0.0	**0.0**	**0.0**
Paper industry	2.0	2.1	**2.1**	**2.1**	0.1	0.1	**0.1**	**0.1**
Printing and related industry	0.7	0.6	**0.6**	**0.6**	0.0	0.0	**0.0**	**0.0**
Oil products	3.0	2.7	**2.2**	**2.1**	-0.2	-0.3	**-0.4**	**-0.1**
Chemicals	10.5	10.1	**9.7**	**9.3**	-0.3	-0.3	**-0.2**	**-0.2**
Plastic and rubber products	3.0	3.1	**3.1**	**3.2**	0.1	0.1	**0.1**	**0.2**
Non-metal mineral products	5.0	5.1	**5.0**	**4.9**	0.2	0.1	**0.0**	**0.0**
Basic metal products	6.7	6.8	**6.8**	**7.0**	-0.3	0.2	**0.2**	**0.3**
Metallic products	3.3	3.4	**3.4**	**3.6**	0.1	0.1	**0.2**	**0.2**
Machinery and equipment	4.0	4.1	**4.2**	**4.3**	0.0	0.1	**0.2**	**0.2**
Computers and electronics	4.7	4.9	**5.1**	**5.3**	0.3	0.3	**0.3**	**0.3**
Electrical equipment	3.1	3.2	**3.2**	**3.2**	0.2	0.1	**0.1**	**0.1**
Transportation and equipment	19.2	19.0	**19.9**	**20.4**	1.3	0.0	**1.5**	**0.9**
Furniture and related products	1.2	1.1	**1.1**	**1.1**	0.1	0.0	**0.0**	**0.0**
Other manufacturing industry	2.2	2.3	**2.3**	**2.3**	0.1	0.1	**0.1**	**0.1**

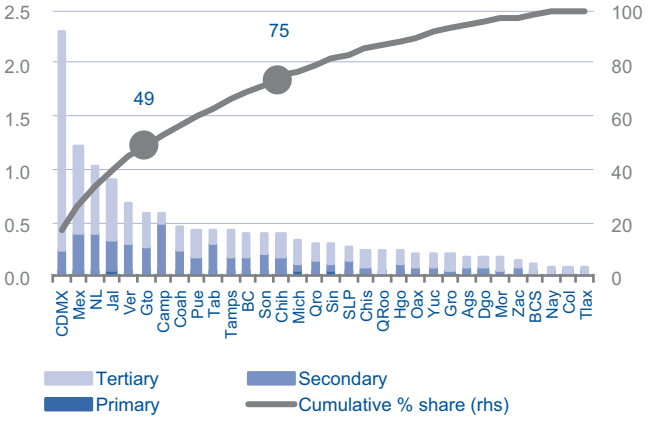
Note: forecasts appear in **boldface**. All figures are subject to review by the Institute.
sa: Seasonally-adjusted; pp: Percentage points
Source: BBVA Research with INEGI data

2.c More diversified state economies have a better outlook for growth

The Mexican economy is highly dependent on a handful of state economies. Just six of the 32 account for 49% of total GDP and less than half, 14, account for 75% of total GDP. The vast majority of states have tertiary activities as the main source of their economic momentum. The exceptions are Campeche, Coahuila and Tabasco, where secondary activities, and in particular Mining, have a greater share. In the first and third cases this is due to oil mining, while in the second it is due to mineral mining. This distinction between activities becomes paramount to understanding the performance of economies at state level, as well as their prospects in the short term.

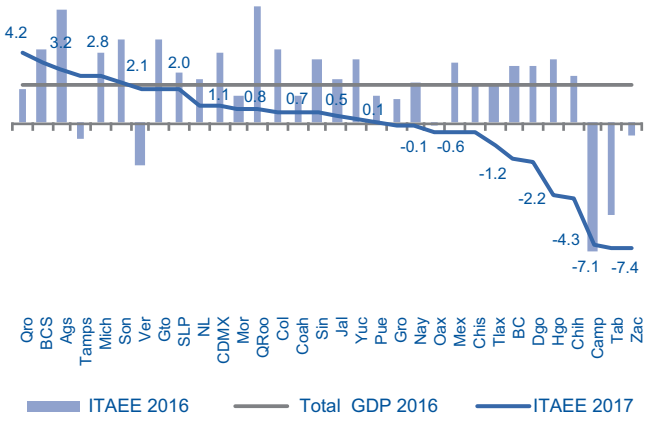
Until the first quarter of 2017 (1Q17), Querétaro, Baja California Sur and Aguascalientes are the three states with the highest economic momentum.[1] On the other hand, the states of Campeche, Tabasco and Zacatecas had the most pronounced declines during the same period. The first three are states focused on services and manufacturing, sectors that showed growth until the first half of this year. Meanwhile, Mining is the sector with the worst performance in the most current data; although Zacatecas also depends more on services as a whole, at sectoral level Mining is the largest with a share of around 24%.

Figure 2c.1 State GDP 2015
Billions of constant pesos and % share



Source: BBVA Research based on SCNM, INEGI data

Figure 2c.2 Quarterly Indicator of State Economic Activity
Real YoY % change



Source: BBVA Research based on SCNM, INEGI data

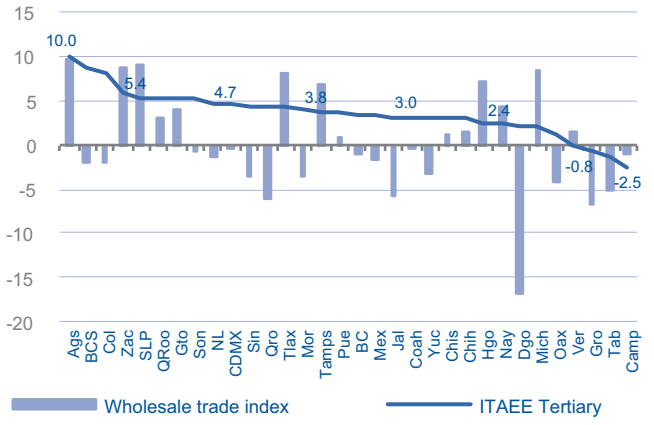
State economic momentum according to sectoral dependence

Tertiary activities have greater share in most state economies. Within these, Trade dominates in almost all (except in Oaxaca and Tlaxcala). As we mentioned in our article on sectorial situation. We expect the Commerce sector to grow to 3.2% during 2017 and 1.2% the following year. In states such as Baja California Sur and Quintana Roo, tourism services, collected in the GDP of Temporary accommodation services and Food and beverage preparation services, contribute significantly to determining their economic outcome.

1: At the time of writing, the Quarterly Indicator of State Economic Activity (ITAEE), an advanced indicator of state GDP, had only been updated to 1Q17.

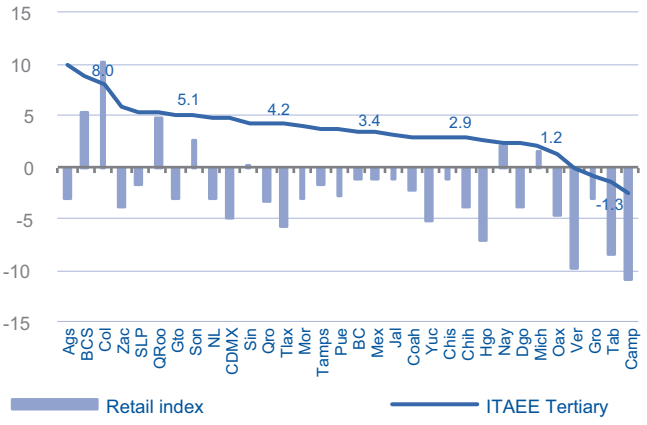
At state level we can ascertain the trajectory of tertiary activities through the Quarterly Indicator of State Economic Activity (ITAEE) of the Tertiary Sector. Based on this indicator, Aguascalientes, Baja California Sur and Colima have made the greatest advances, while Tabasco and Campeche are exactly in the opposite position. Because this leading indicator can still change its trend, we have combined the Wholesale and Retail Trade revenue indexes to complement the regional scenario. The first of these indicators indicates that Aguascalientes, Michoacán, San Luis Potosí and Zacatecas would present the best results; however, these economies are no longer dependent on secondary or even primary sectors. Colima, Baja California Sur and Quintana Roo have the largest increases in retail revenue. In these states the GDP of Commerce does have a greater weight, so it could effectively announce the advances in their economies.

Figure 2c.3 ITAEE Tertiary and Wholesale Trade
YoY % change



Source: BBVA Research based on SCNM, INEGI data

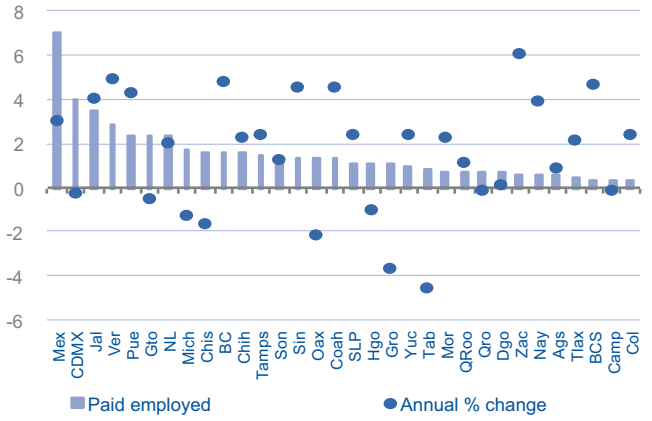
Figure 2c.4 ITAEE Tertiary and Wholesale Trade
Real YoY % change



Source: BBVA Research based on SCNM, INEGI data

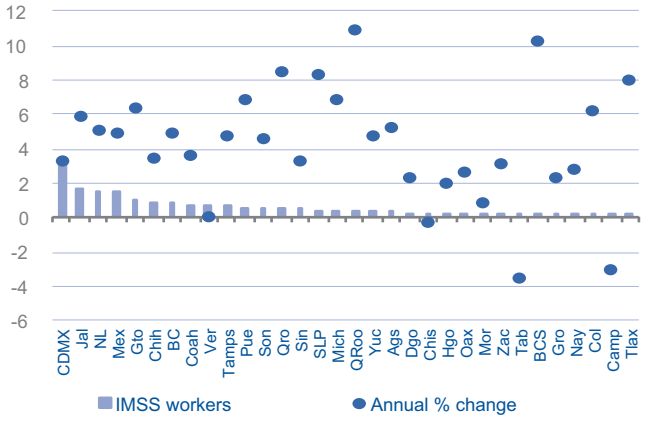
The states with the largest economies are also where there is a greater number of paid workers, both those registered with the IMSS and generally based on information from the National Survey of Occupation and Employment (ENOE). In line with the fall in GDP in Campeche and Tabasco, the number of workers in the IMSS also fell in the same line as the total number of paid jobs. The positive side features the states of Baja California Sur and Quintana Roo, where private formal employment has grown by over 10%. This last one was related to Tourism, but also Commerce, since greater flows of population propitiates an increase in consumption. The state panorama allows us to observe the effect of the formalisation of employment, since in several states the number of workers decreases in absolute values, but grows in the figures from the IMSS. This is the case of large state economies such as Mexico City and Guanajuato, but also others like Michoacan and Oaxaca.

Figure 2c.5 ENOE paid employees
Millions of workers and YoY % change



Source: BBVA Research based on SCNM, INEGI data

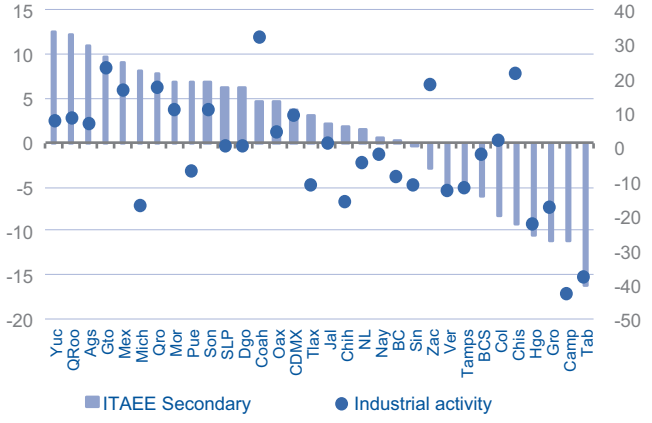
Figure 2c.6 IMSS workers
Millions of workers and YoY % change



Source: BBVA Research based on SCNM, INEGI data

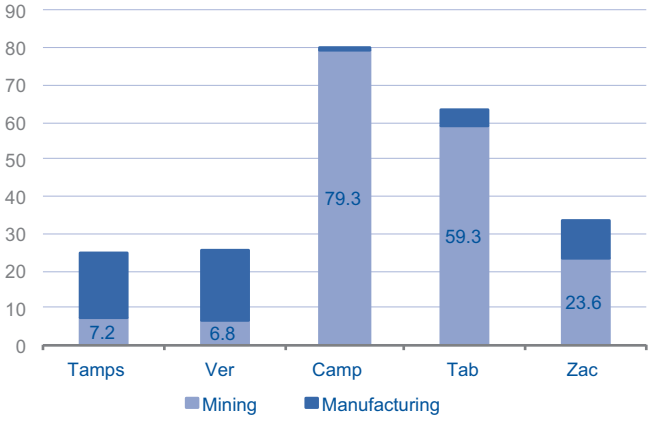
The secondary ITAEE has a closer relationship with the states' industrial activity. Virtually all the states with growth in industrial activity have an increase in the secondary ITAEE and those with negative rates also have a decline in their industrial activity. Once again the extreme cases are Campeche and Tabasco, which are highly dependent on Mining. Campeche concentrates almost 80% of its economy in mining activity, while Tabasco has 60%. Other states that also have a negative performance in secondary activities, such as Tamaulipas and Veracruz, have grown despite the poor result in Mining, since the Manufacturing industry plays a greater role in their economies.

Figure 2c.7 ITAEE Secondary and Industrial Activity
YoY % change



Source: BBVA Research based on SCNM, INEGI data

Figure 2c.8 GDP Mining and Manufacturing
Share %

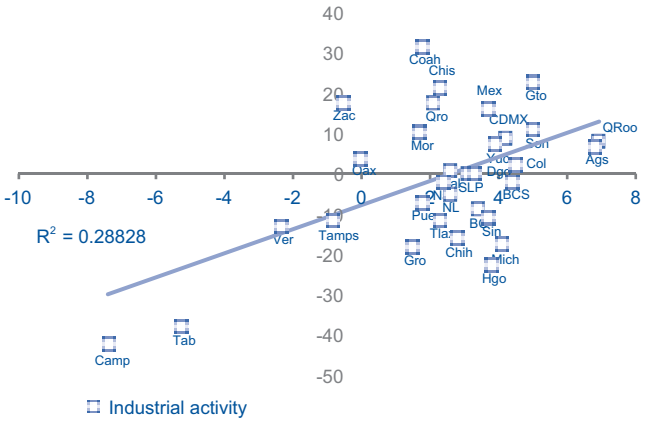


Source: BBVA Research based on SCNM, INEGI data

Overall, the retail index helps explain better the trend in GDP at state level than the industrial activity by state. As we saw in previous paragraphs, both are useful to understanding how state economies develop, but it is the retail trade that offers the best explanation. This is because tertiary activities have a greater impact than secondary activities. Within the former, Commerce has greater weight. Nevertheless, industrial activity must be taken into account, both for its ma-

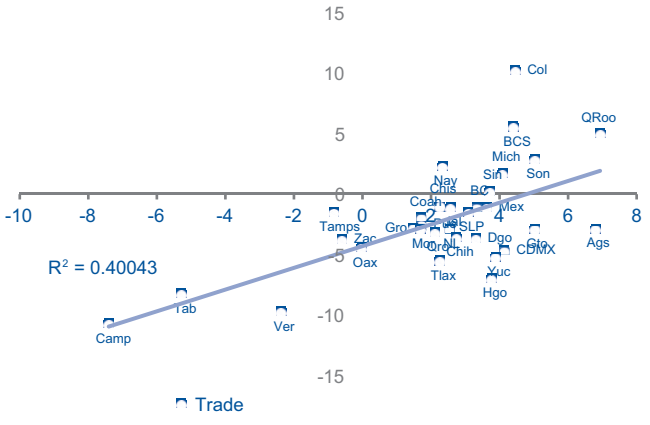
nufacturing sector that has an impact on almost all the states, and for its mining sector for more specific states such as Campeche, Coahuila, Tabasco and Zacatecas.

Figure 2c.9 State GDP and Industrial Activity
YoY % change



Source: BBVA Research based on SCNM, INEGI data

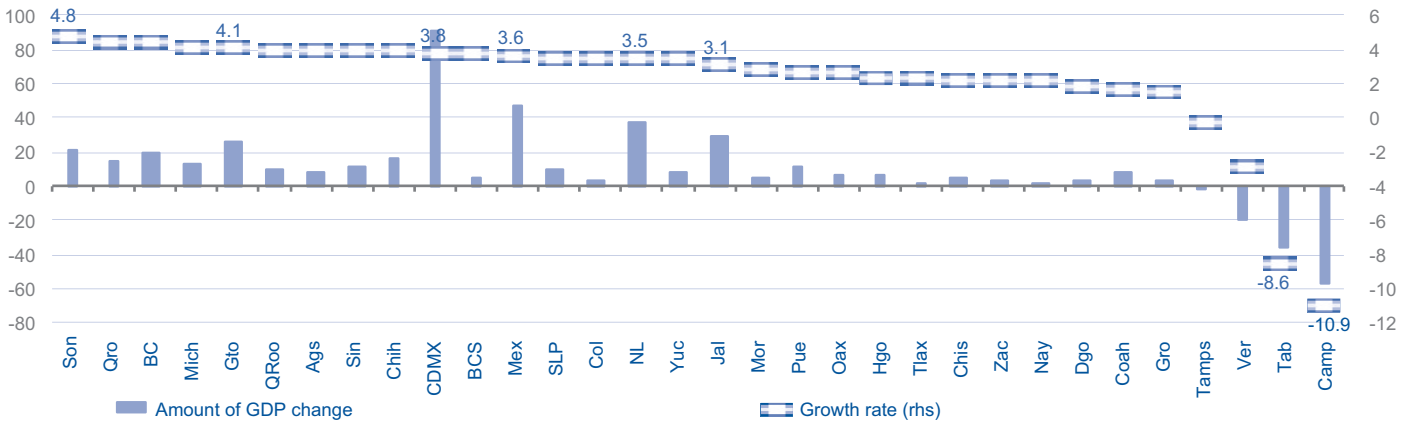
Figure 2c.10 GDP and Retail Trade
YoY % change



Source: BBVA Research based on SCNM, INEGI data

Based on the above, we estimate that the economies dependent on the Mining sector such as Campeche and Tabasco will close 2017 with a fall of 8.6% and 10.9% at annual rates; mainly due to lower oil activity. This could be offset in the medium term with the investments in the oil sector that are beginning to flow to the country. On the opposite side, Sonora, Querétaro and Baja California will be the states that grow the most. Sonora at a rate of 4.8%, Querétaro at a rate of 4.5% and Baja California 4.4% also in annual terms. In all three cases, the Manufacturing Industry and its exports will be of greater significance, along with the flow of financial services. In the case of Querétaro, we will also need to add Trade, which is influenced by higher consumption. Guanajuato, Mexico City and State of Mexico will be the states that will grow more in absolute terms thanks to the size of their economies. Guanajuato and State of Mexico will be influenced by the brisk pace of exports from the manufacturing sector, while Mexico City will continue having a greater share from Commerce.

Figure 2c.11 State GDP 2017
Billions of constant pesos and YoY % change



Source: BBVA Research based on SCNM, INEGI data

3. Special topics

3.a Exports to expand the agricultural sector

Introduction

The primary sector consists mainly of agricultural activity, breeding and production of animals, as well as fishing, hunting and harvesting. Primary activities are of great importance for the development of the economy as a whole. The role of the sector in promoting economic growth and its role in poverty reduction is an issue that is widely discussed in the economic literature. Empirical evidence shows that there is a causal relationship between the value added of agriculture per capita and GDP per capita in developing countries (Tiffin and Irz, 2006). This reinforces different results that support the hypothesis that agriculture is one of the drivers of economic growth (Awokuse, 2008) and one of the means of reducing poverty in developing countries (Cervantes-Godoy and Dewbre, 2010).

In the case of Mexico, there is evidence of underperformance in the primary sector in recent years and a negative contribution to growth, due to the lack of provision of incentives to the sector and a poor agricultural policy of the State (Cruz and Polanco, 2014). The orientation of economic policy to a model based on the export of manufactures has sidelined the primary sector. Despite this evidence, there are recent signs of a positive performance in the coming years, such as a positive trade balance in 2015 and 2016, sustained export performance and the diversification of international trade to products in which Mexico has a higher relative concentration of its production, such as avocados and berries. As a result of these signs **BBVA Research estimates a sector growth of 1.7% for 2017**, falling below the national GDP growth forecast of 2.2%.

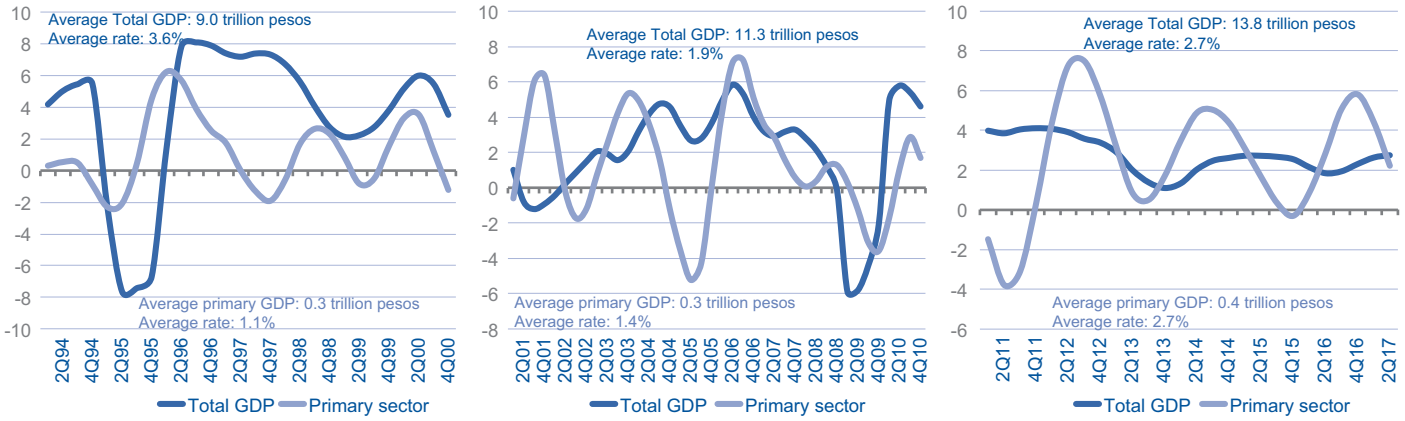
In this issue of ***Mexico Regional Sectorial Outlook*** we review the recent trends in Mexico's primary sector. In the following section, a brief analysis of the overall performance of the sector and its components is presented. Next, the composition of the production of the sector with an emphasis on the state of external demand is analysed. After that, the recent trends in credit to the sector are shown. Lastly, BBVA Research's sectoral and agricultural export forecasts are presented, followed by the conclusions.

Bucking historical trends, agriculture improves as a result of exports

The primary sector is made up of five subsectors, of which the agricultural sub-sector is the largest, accounting for around 63% of the value added. Second comes Breeding and production of animals with an average contribution of 30%, followed by Forestry use with 4%. Fishing, hunting and trapping occupies fourth position with 2% and Agricultural and forestry services with 1%. This sector is characterised by not being related to the cycle of the economy as a whole.

From 1994 to the second quarter of 2017 (2Q17), the Mexican economy grew at an average rate of 2.7%; while the primary sector did so at a rate of 1.7%. In the period from 1994 to 2000, Total GDP increased by 3.6% on average per year, while the primary sector only increased by 1.1%. In the following decade the agricultural sector improved its average performance to advance to 1.4%; but in recent years had its best year with an average rate of 2.7%, the same as the economy as a whole. Despite this performance, the sector has lost its share due to the greater speed of other sectors such as Commerce, Manufacturing or Telecommunications. Its share has gone from levels around 4% to 3.2% in 2017.

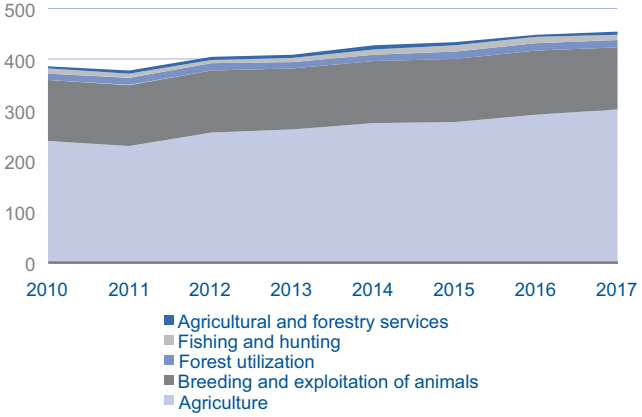
Figures 3a.1, 3a.2 y 3a.3 Total Gross Domestic Product and Primary Sector
YoY % change



Source: BBVA Research based on data from SCNM and INEGI

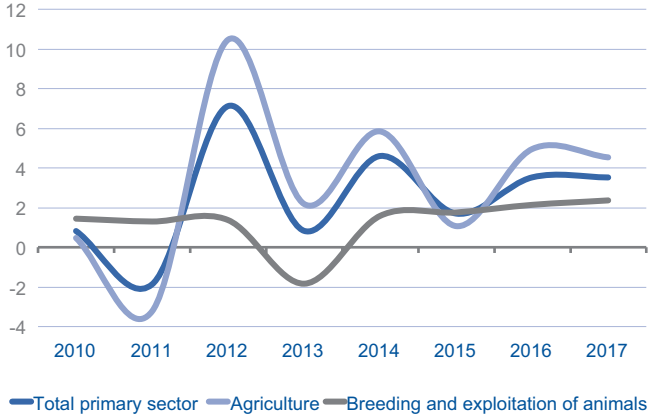
This ultimately translates into a reduction in the contribution to economic growth by the primary sector to total GDP. In recent years, the agricultural subsector is the largest contributor and its contribution continues to increase with respect to the rest of the components. The subsectors of agriculture and breeding and production of animals account for around 90% of the primary sector's GDP, with relatively stable holdings of about 64% and 30%, respectively. Agriculture not only has the largest share, but in the last five years it has performed better, and the result has been maintained during the first half of 2017. On the other hand, the Breeding and production of animals has also performed well, although more discreetly. With the exception of 2013, all the years of the current decade have shown positive rates of growth. The improved dynamics of the agriculture subsector and its reflection in the primary sector during 2016 and the current year is partly explained by the impetus given by external demand, leading to a growth in exports compared to previous years.

Figure 3a.4 GDP of the primary sector by subsector
Billions of constant pesos



Source: BBVA Research based on data from SCNM and INEGI

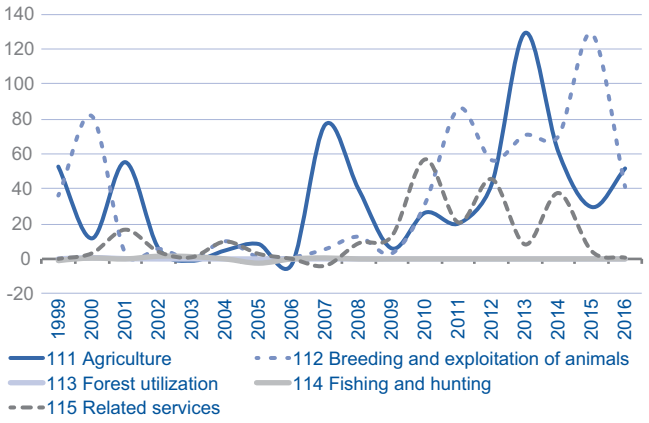
Figure 3a.5 GDP of the primary sector by subsector
YoY % change



Source: BBVA Research based on data from SCNM and INEGI

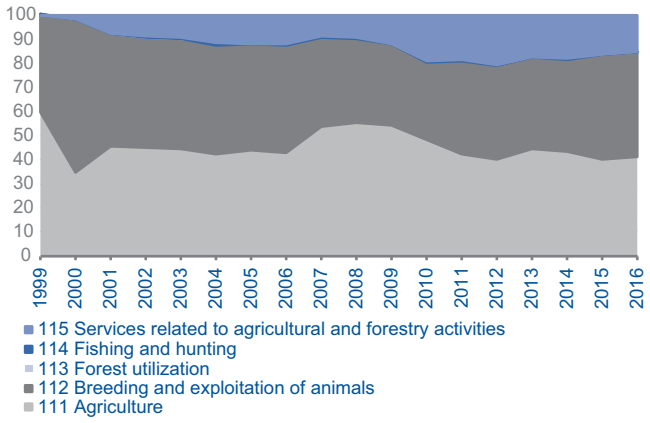
The low performance of the primary sector could be explained by different factors related to the state of demand (internal and external), productivity and the level of sophistication of production, credit and investment flows. In the case of Foreign Direct Investment (FDI) aimed at the primary sector there was little dynamism between 2000 and 2010 with relatively low flows. FDI in the primary sector reached $1.485 billion accumulated between 1993 and 2016, equivalent to only 0.3% of total FDI aimed at Mexico, concentrated in the agricultural and animal breeding and production subsectors. This suggests that the primary sector is among the smallest recipients of FDI. Since 2009, an increase in FDI flows has been observed, which has slowed down in the case of all primary subsectors with the exception of animal breeding and production. This could be explained by the high risk associated with investments in the primary sector, the weakness in domestic demand and the low level of development of the channels that direct its production to international trade.

Figure 3a.6 Primary sector FDI flows by subsector
US$ millions



Source: BBVA Research with data from the Ministry of Economy

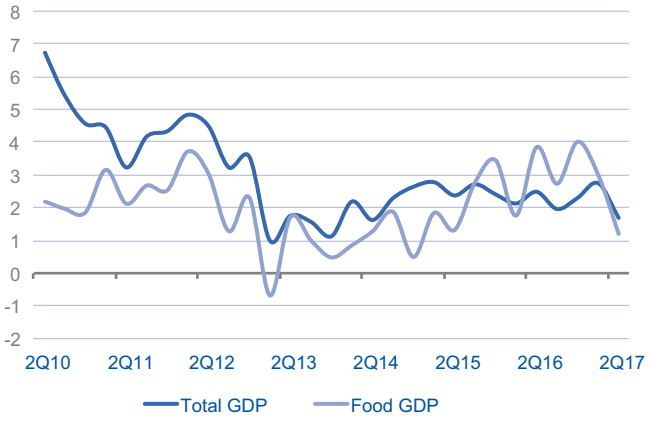
Figure 3a.7 Distribution of primary sector FDI by subsector
% share of cumulative flows



Source: BBVA Research with data from the Ministry of Economy

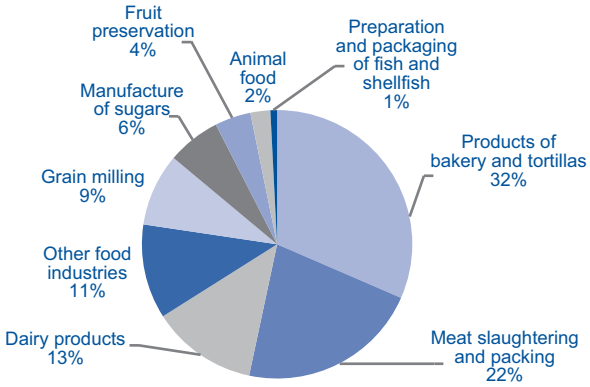
One of the industries most in demand in the agricultural sector is the food industry, which is part of the manufacturing sector. This subsector has contributed with little more than 21% of the GDP of manufacture and about 3.5% of the national GDP. The food sector has shown a moderate performance growing below total GDP at least from 2010 until the first quarter of 2016 (1Q16). However, from the second quarter of 2016 (2Q16) until the first quarter of 2017 (1Q17), it has presented growth rates higher than that of the economy as a whole. Four branches of activity account for about 75% of food production: bakery and tortilla products (31.5%), slaughtering, packaging and processing of meat (21.8%), dairy products (12.7%) and grain milling (8.8%), as shown in Figure 3a.9.

Figure 3a.8 Growth of Total GDP and Food GDP
YoY % change



Source: BBVA Research based on INEGI data

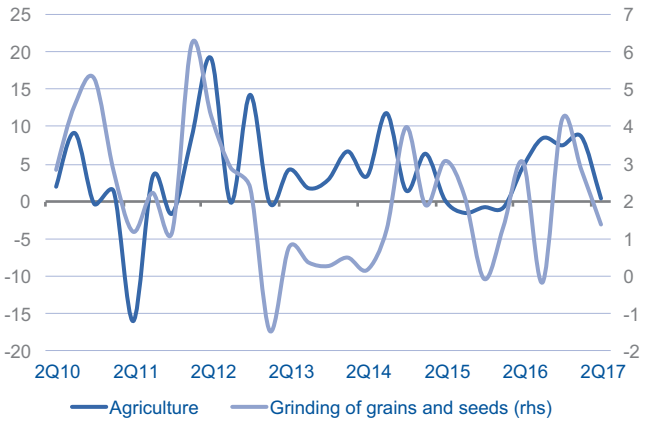
Figure 3a.9 Composition of the GDP of the food sector
Share %



Source: BBVA Research based on INEGI data

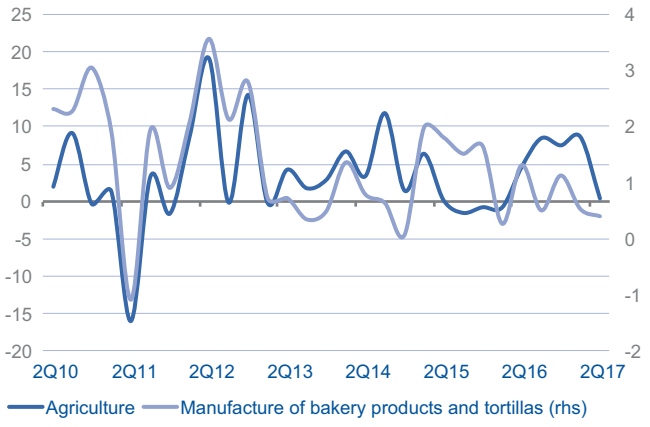
These branches of activity in the food sector are closely related to the primary sector because it is one of the main suppliers of inputs for industrial food production. According to this argument, a weak activity in the agroindustry sector translates into a contraction in the domestic demand of the primary sector that would lead to a fall in the activity of the sector. Agriculture seems to closely follow the dynamics of the activity of the branches of processing of bakery and tortilla products and the grain milling and processing of oils since it is among the main suppliers of grains for these activities. However, these branches of activity also have a high dependence on the external market, as mentioned in previous sections, domestic demand for wheat and maize depend on imports of these products of up to 60% and 30%, respectively.

Figure 3a.10 GDP agriculture and grain and seed milling
YoY % change



Source: BBVA Research based on INEGI data

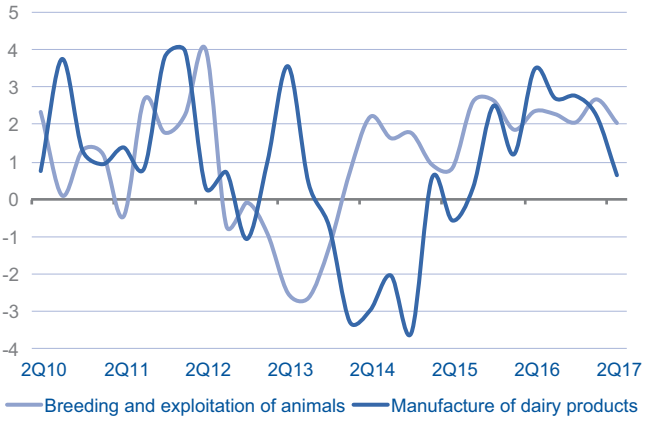
Figure 3a.11 GDP agriculture and processing of bakery and tortilla products (% YoY change)



Source: BBVA Research based on INEGI data

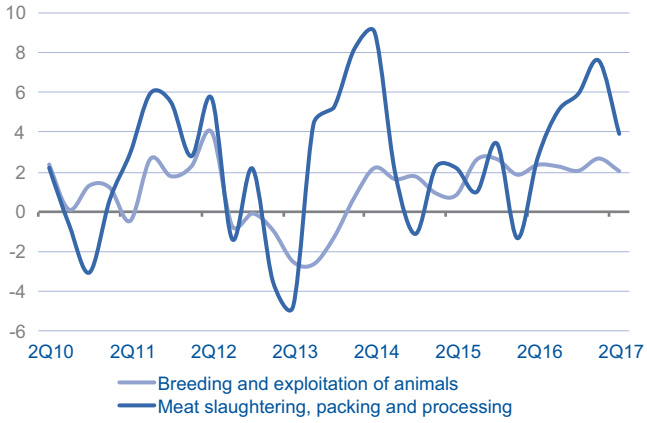
Similarly, the dynamics of the branch of breeding and production of animals in the primary sector seem to anticipate the movements of the branches of dairy processing and slaughtering and meat processing. In the case of the demand for fresh milk, which would be the main input of dairy products, Mexico seems to show a high dependence on its domestic production. On the other hand, the breeding and production of animals shows an increasing export orientation.

Figure 3a.12 GDP for breeding and production of animals and dairy products (YoY % change)



Source: BBVA Research based on INEGI data

Figure 3a.13 GDP for breeding and exploitation of animals and slaughtering, packing (% YoY change)



Source: BBVA Research based on INEGI data

High concentration in production and dependence on US demand

The demand for food, the food sector and the external sector are the main components of demand in the primary sector. According to data from the Input-Output Matrix of 2012, the production by the primary sector depends highly on the demand of the external sector. Exports account for 37.6% of the sector's final demand. These indicators place the primary sector as the third-most dependent on exports, but below other sectors which are highly dependent on external demand such as mining and manufacturing where exports are 87% and almost 56%, respectively, of their final demand.

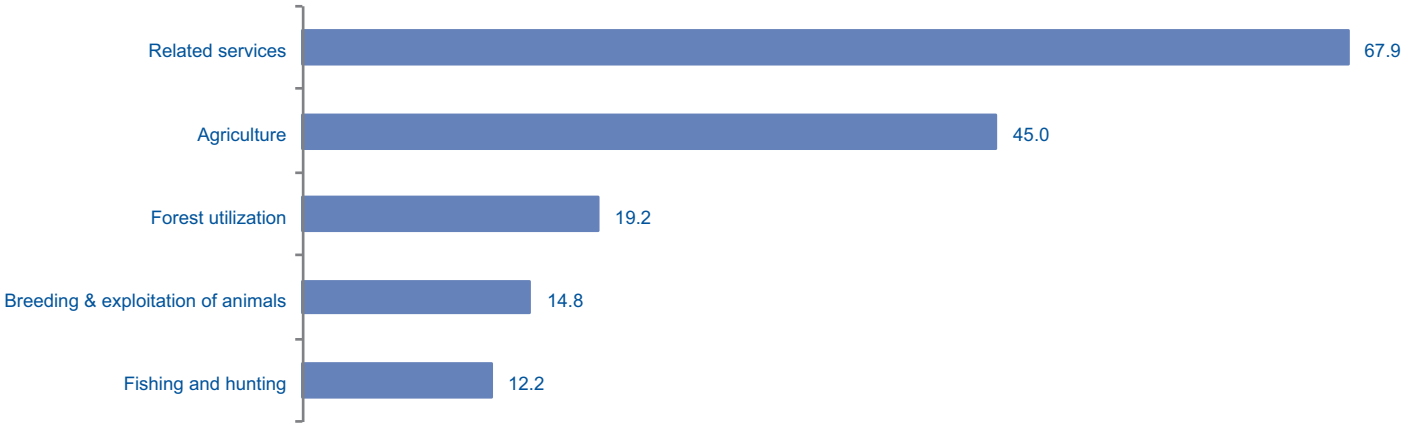
Table 3a.1 Share of exports in total production and final demand, 2012
Millions of pesos and % share

Sector	Total production	Intermediate demand	Final demand	Exports	% share of exports in the final demand	% share of exports in the total production
Agriculture, fishing and hunting	762.9	456.6	306.3	115.2	37.6	15.1
Mining	1,582.4	799.9	782.6	681.0	87.0	43.0
Electric energy	462.2	300.9	161.3	4.5	2.8	1.0
Manufacturing Industries	9,025.2	2,707.9	6,317.3	3,527.2	55.8	39.1
Trade	3,103.1	876.5	2,226.6	422.9	19.0	13.6
Transportation, post and storage	1,562.3	314.5	1,247.8	140.3	11.2	9.0
Mass media information	553.6	184.7	368.9	4.2	1.1	0.8
Finance and insurance services	782.4	254.5	527.9	27.5	5.2	3.5
Real estate services	1,954.5	298.0	1,656.5	0.0	0.0	0.0
Professional services	458.3	377.2	81.1	10.3	12.7	2.3
Total uses of national origin	**26,309.7**	**7,594.2**	**18,715.5**	**4,933.1**	**26.4**	**18.8**

Source: BBVA Research with data from the Input-Output Matrix, 2012 prepared by INEGI

At the subsector level, services related to the agricultural sector are the most dependent on the external sector with an export share of about 68% of its final demand followed by the agricultural subsector with a share of exports of 45% of its final demand. Fisheries and the breeding and production of animals are the subsectors which are least dependent on external demand, however, their share of exports exceeds 12% of their final demand.

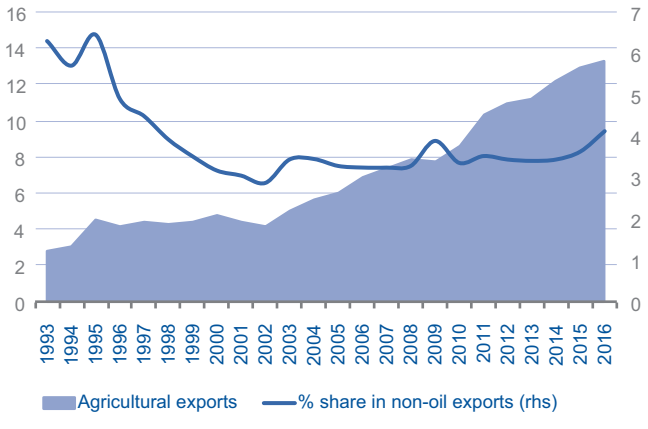
Figure 3a.14 Share of exports by subsector in the final demand
Share %



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

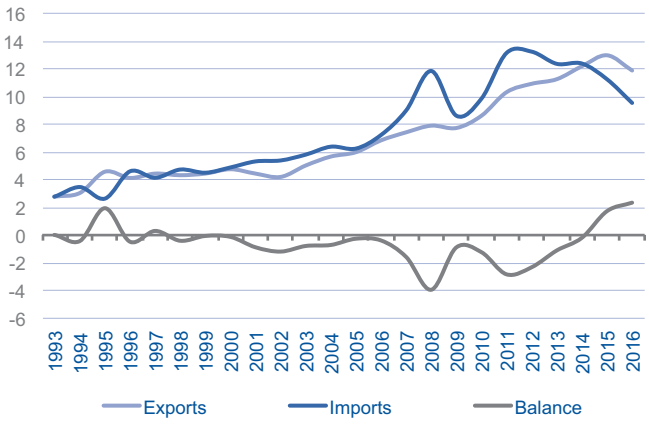
Given the agricultural subsector's share of more than 60% of the primary sector and the high dependence of the subsector on external demand, the agricultural sector is highly dependent on shocks that affect external demand. Despite the increase in agricultural exports from just over US$2.7 billion in 1993 to about US$12 billion in 2016 (representing an average annual growth of 6.5%), its share of non-oil exports has declined from 6% to just over 4% in the same period. This is explained by the high performance of manufacturing exports since the signing of the North American Free Trade Agreement.

Figure 3a.15 Agricultural and Non-Oil Exports
Billions of dollars and % share



Source: BBVA Research based on data from Mexico's central bank

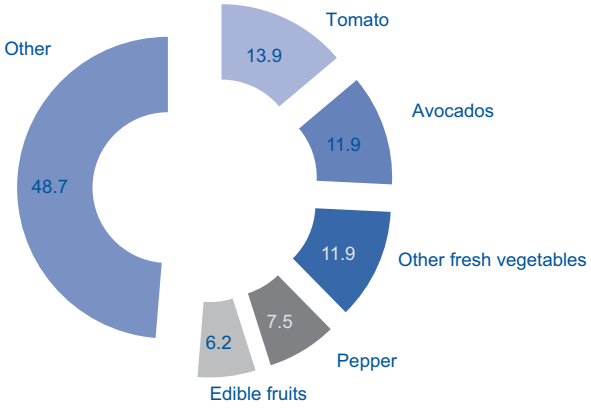
Figure 3a.16 Agricultural trade balance
Billions of dollars



Source: BBVA Research based on data from Mexico's central bank

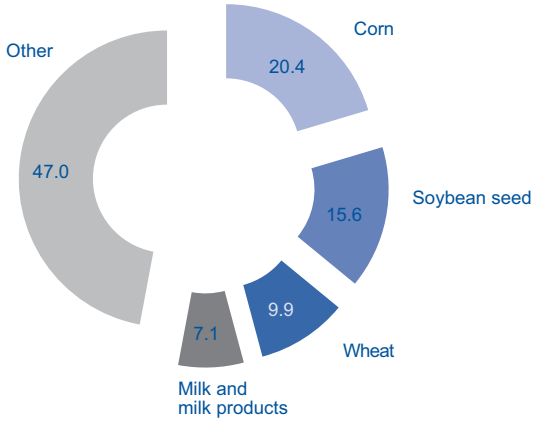
The increase in agricultural exports has been accompanied by an increase in practically the same magnitude as agricultural imports. These imports have grown at an average annual rate of 5.6% between 1993 and 2016, resulting in a deficit agricultural balance between 1998 and 2014. Only in 2015 and 2016 was there a surplus balance of more than US$1.7 billion per year. As mentioned in previous sections, agricultural products such as tomatoes, avocados, vegetables and fruit account for most of Mexico's exports. In contrast, grains (corn and wheat), milk and their derivatives account for most of Mexico's agricultural imports.

Figure 3a.17 Main agricultural exports products
% share average 2013-2016



Source: BBVA Research based on data from Mexico's central bank

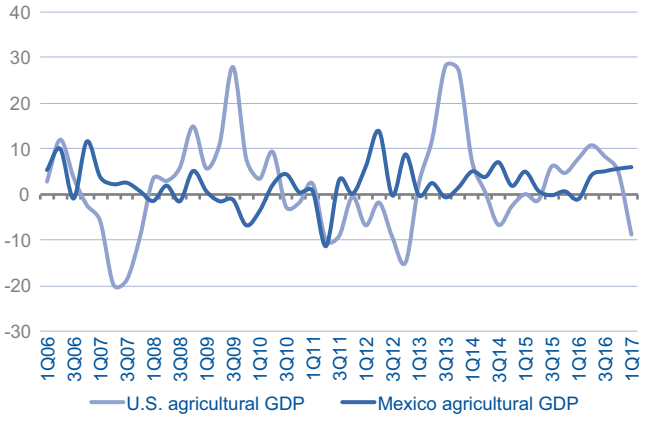
Figure 3a.18 Main agricultural imports products
% share average 2013-2016



Source: BBVA Research based on data from Mexico's central bank

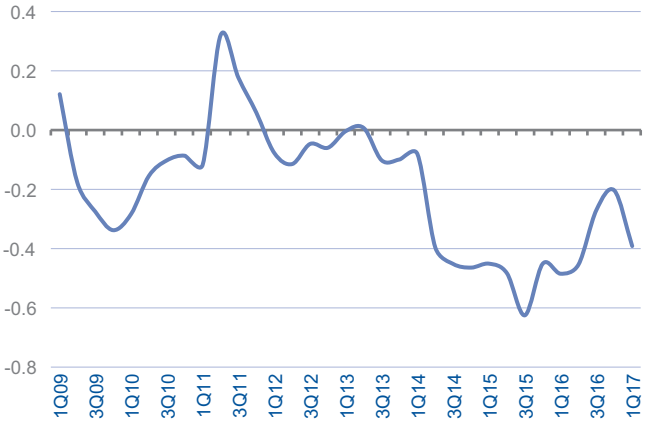
The role of the USA in the final demand for Mexico's agricultural products is fundamental. In 2016, more than 80% of Mexican agricultural exports went to that country. By tariff item, practically all the demand for Live animals comes from the USA, followed by the item of Vegetables with more than 95% of their exports and Edible fruit and nuts with about 85%. This implies that the primary sector is more dependent on the agricultural GDP cycle in the USA, because a contraction of agricultural production there would translate into a greater potential demand for Mexican products. In recent years the correlation between the GDP of the primary sector of Mexico and the USA has increased, showing the increased synchronisation with the agricultural cycle. For this reason, the imposition of protectionist measures based on the agricultural cycle of Mexico's trading partners (or managed trade) would be harmful to domestic production.

Figure 3a.19 GDP primary sector Mexico vs. USA
Average % share 2013-2016



Source: BBVA Research with INEGI and the US Census Bureau data

Figure 3a.20 Correlation Mexico and US primary GDP
Correlation coefficient (moving average)



Source: BBVA Research with INEGI and the US Census Bureau data

As for the composition of US foreign trade, manufacturing is by far the largest component of exports and imports. The country's trade dependence on Mexico is observed in mining exports (16.9%) and manufactures (16.6%). In the case of US imports, agricultural products are the most significant, with a share of 22% of total agricultural imports.

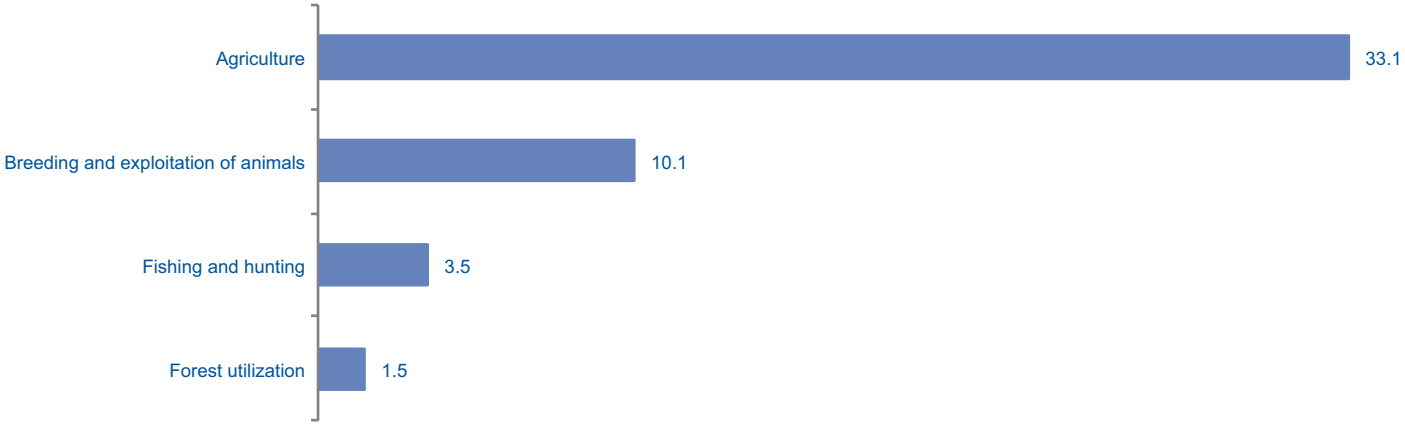
Table 3a.2 Mexico's share of total US imports by sector, 2016
Millions of dollars and % share

Sector	Total		Mexico		Share %	
	Exports	Imports	Exports	Imports	Exports	Imports
Total	**1,327,040.3**	**2,005,192.2**	**211,848.7**	**270,647.2**	**16.0**	**13.5**
Farming	69,528.6	52,695.3	6,847.3	11,574.2	9.8	22.0
Mining	29,674.1	102,477.7	5,004.4	7,130.8	16.9	7.0
Manufacturing	1,157,223.3	1,754,210.8	191,859.0	243,414.7	16.6	13.9
Other sectors	70,614.3	95,808.4	8,138.0	8,527.6	11.5	8.9

Source: BBVA Research with data from the US Census Bureau

Within the agricultural sector, US imports from Mexico are significant in the agricultural and animal breeding and production subsectors with 33% and 10%, respectively, as a proportion of the total imports of the sector.

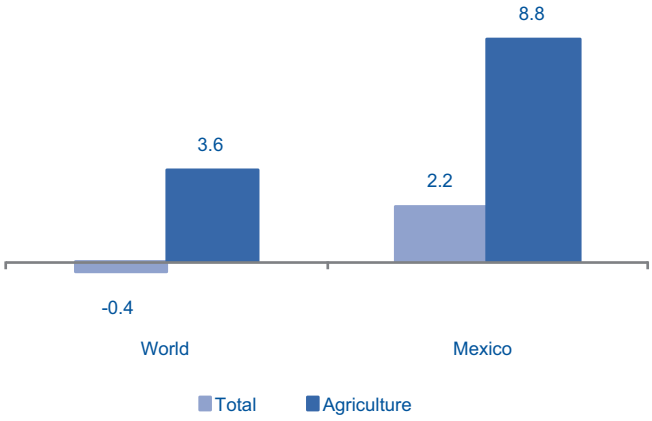
Figure 3a.21 Mexico's share of US agricultural imports, 2016
Share %



Source: BBVA Research with data from the US Census Bureau

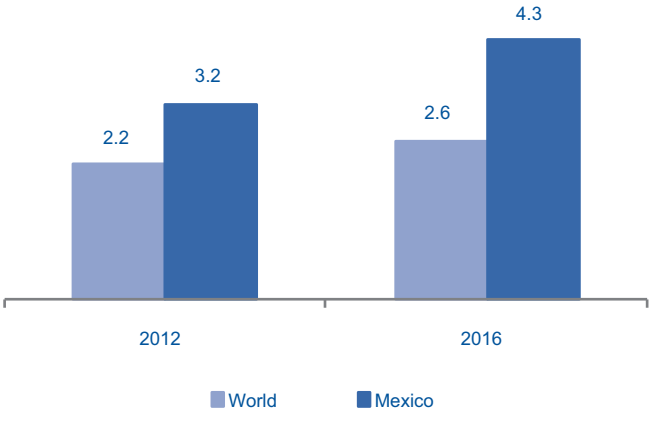
In recent years US foreign trade has grown significantly, thus boosting the import of products from Mexico. Imports show an average annual growth rate of 2.2% per annum, a rate that contrasts with the 0.4% fall in US imports worldwide. Agricultural products are the ones with the most momentum. While total US agricultural imports have grown an average of 3.6% between 2012 and 2015, imports from Mexico have grown by 8.8% in the same period. This explains the increase in Mexico's share of US agricultural imports.

Figure 3a.22 Total and agricultural imports, 2012-2015
Average % change 2012-2015



Source: BBVA Research with data from the US Census Bureau

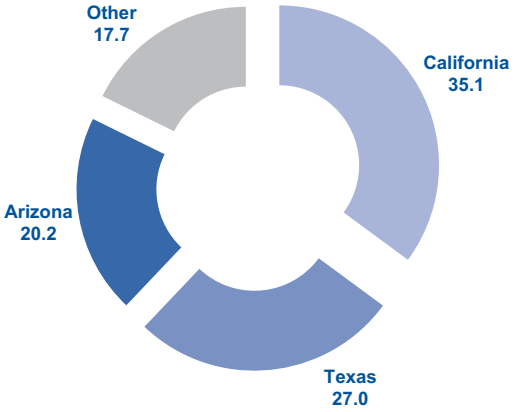
Figure 3a.23 Agricultural imports in the totals
Share %



Source: BBVA Research with data from the US Census Bureau

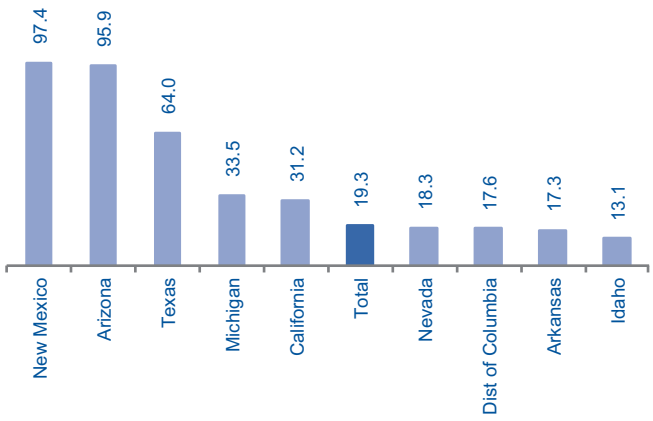
The demand for agricultural imports of Mexican origin in the USA is highly concentrated. The states of California, Texas and Arizona accumulate more than 80% of agricultural imports from Mexico. Likewise, agricultural imports from these states are highly dependent on Mexican production. More than 95 percent of Arizona's agricultural imports come from Mexico followed by Texas with 64 percent. California has a greater diversification and only 31.2% of its agricultural imports come from Mexico.

Figure 3a.24 US agricultural imports from Mexico
% share in 2016



Source: BBVA Research with data from the US Census Bureau

Figure 3a.25 Agricultural imports of Mexico from the USA
Average % share 2012-2016

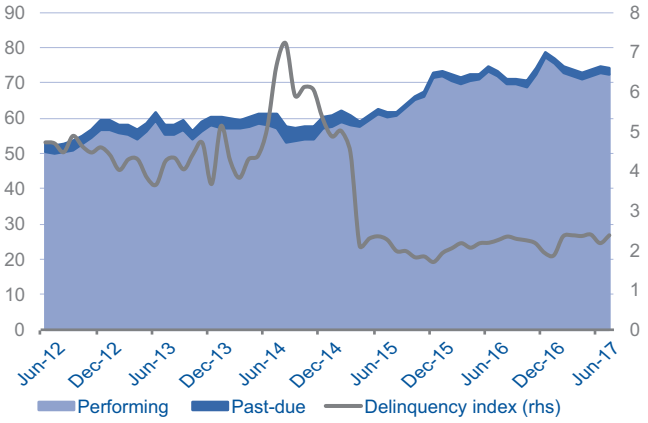


Source: BBVA Research with data from the US Census Bureau

Credit to the primary sector growing with a stable portfolio composition

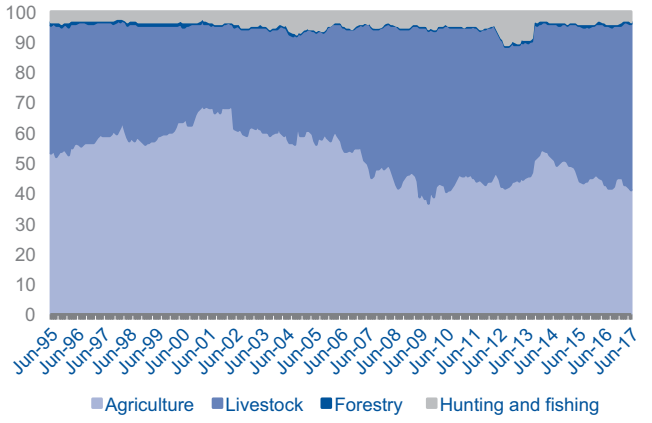
Credit granted to the agricultural sector has grown steadily in recent years, real balances of credit to the sector exceeded 70 billion pesos in 2016 with a backlog of only 1.7 billion pesos in 2016 and in 1H17, which represents around 2.5% of the total portfolio.

Figure 3a.26 Portfolio of commercial banks in the agricultural sector (Millions of constant pesos)



Source: BBVA Research based on Bank of Mexico data

Figure 3a.27 Distribution of credit by subsector
Share %



Source: BBVA Research based on Bank of Mexico data

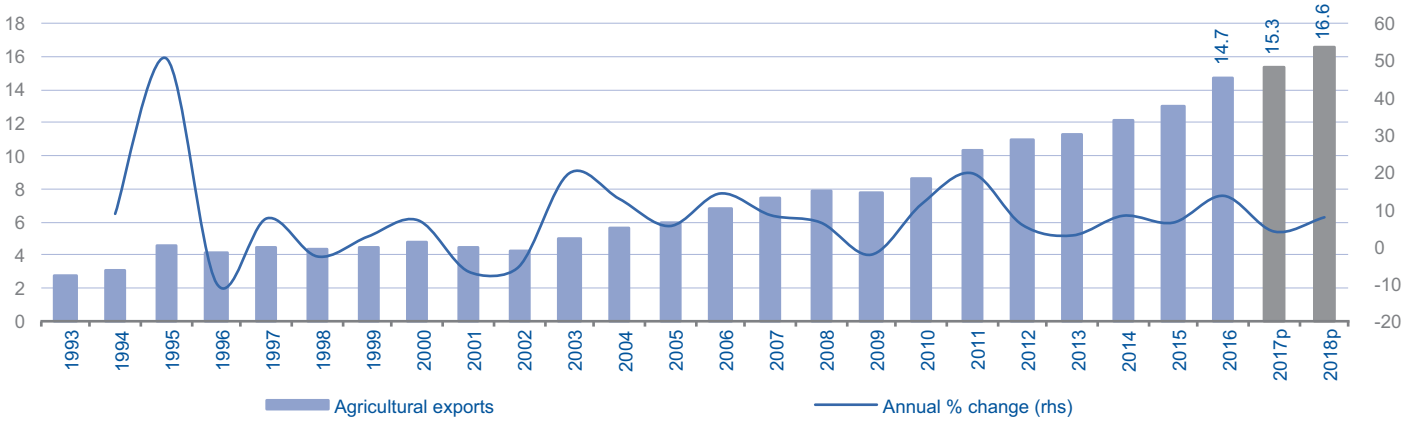
Agriculture and livestock are the subsectors that receive the most credit, between them they obtain more than 90% of the credit granted to the primary sector. The interest rates on loans granted range from 6.5% to 8.5%.

In 2017 and 2018 agricultural exports will continue to increase

We expect national GDP to grow by 2.2% in 2017. According to our forecasts, the GDP of the primary sector will grow by 1.7%, below the growth in the national economy, driven mainly by the recent performance of foreign trade. Agricultural exports will continue their growth path in 2017. After reaching a record high of US$14.7 billion in 2016, agricultural ex-

ports could slow their rate of growth, reaching US$15.3 billion in 2017, with annual growth of 4.1%. Meanwhile in 2018, they could grow by 7.9% and reach US$16.6 billion.

Figure 3a.28 Agricultural exports from Mexico
Billions of dollars and YoY % change



Source: BBVA Research based on data from Mexico's central bank

Better performance of the agricultural sector in line with greater exports

Production by Mexico's primary sector is highly concentrated on a few products. In general, the performance of the primary sector has remained below the growth of total GDP, which has reduced its share and contribution to growth in national GDP. Mexico has low flows of foreign direct investment to the primary sector and little diversification in its exports. Likewise, there is a high concentration of imports (mainly grains) and a high dependence on domestic consumption of these imported products. The agricultural sector is highly dependent on the external sector and this sector is concentrated in the USA and in just a few states in that country.

In addition, there are signs of a positive performance by the sector in the coming years. For the first time since 1998, two consecutive years have been observed with a positive balance in the agricultural trade balance accompanied by a steady increase in exports. This is based on the good performance of traditional exports from Mexico and the promotion of new products as in the case of berries. According to the above, Mexico could seek a greater diversification of its export products based on products where Mexico has a higher relative concentration than the world production. Likewise, the credit of private banks to the sector is showing a growing trend, with a low rate of default and relatively low and stable interest rates.

References

Awokuse, T. (2008). Does agriculture really matter for economic growth in developing countries? Department of food and resource economics, University of Delaware, Working paper, pp. 1-27.

Cruz, M. & Polanco, M. (2014). El sector primario y el estancamiento económico en México. Revista Problemas del Desarrollo, 178, 45, pp. 9-33.

Cervantes-Godoy, D. & Dewbre, J. (2010). Economic importance of agriculture for poverty reduction. OECD Food, Agriculture and Fisheries Working Papers, No. 23, pp. 1-26.

Tiffin, R. & Irz, X. (2006). Is agriculture the engine of growth? Agricultural Economics, 35, pp. 79-89.

3.b The formal trade sector faces macroeconomic shocks and increasing informality

Introduction

The trade sector accounted for 16.3% of Gross Domestic Product (GDP) in 2016, a proportion that has been increasing over the last few years, with the exception of periods of crisis, such as 2008 and 2009. The sub-sectors of wholesale and retail trade together constitute the second-largest sector in terms of share of GDP, behind manufacturing, and its momentum has a great influence on the performance of the economy as a whole.

In this issue of ***Mexico Regional Sectorial Outlook***, we study the characteristics of the trade sector, as well as the dynamics of supply and demand within it. Likewise, the issue of informality and the dynamics of the sector will be dealt with in the face of a shock to the economy like the one that took place after the US elections. In general, a comparative analysis of the trade subsectors and the different branches that comprise them is presented, focusing on their relative contribution to the growth of the sector.

Despite the fact that the sector presents a subdued performance, influenced by the high level of informality in the sector,[1] it is worth noting that inflationary dynamics were not consolidated in the first half of 2017 (1H17) as a deterrent to commercial activity, associated with the good performance of private consumption. One possible explanation for this phenomenon is that the operating margin of traders allows them to postpone the transfer of an increase in prices of inputs to consumers, an increase that may be due to the expected internal inflation rates or the increase in price of imported inputs.

In addition to this, private consumption increased in the first quarter of 2017 (1Q17) above expectations, a phenomenon that could be explained by an effect of anticipated purchases and based mainly on a decrease in private savings. However, trading activity is expected to slow down in the second half of 2017 (2S17), implying a reduced momentum in the domestic market.

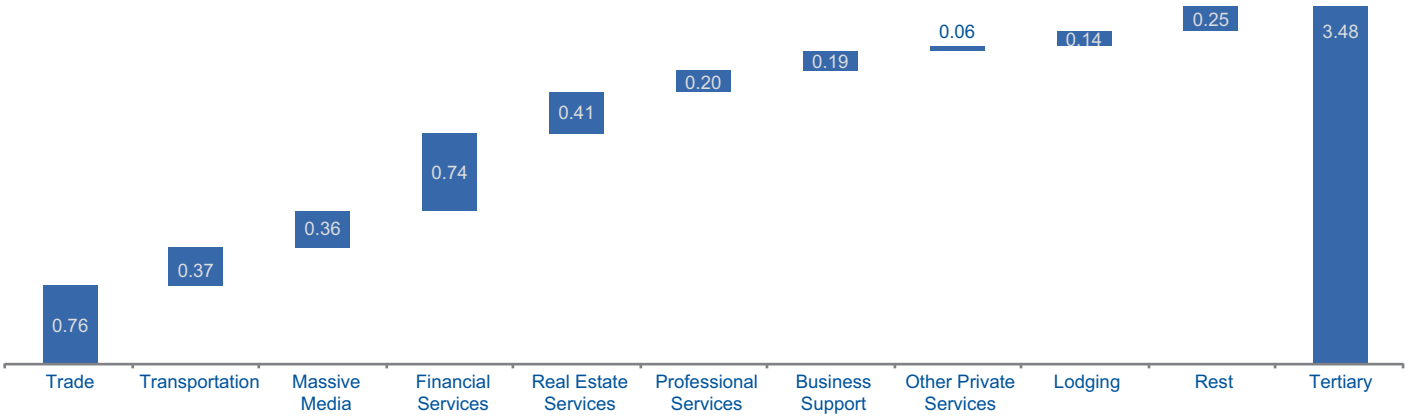
An analysis has also been made of the behaviour of the automotive branch in its trading activity, where indicators point to real growth. In the first quarter of the year, it can be observed that the domestic market component presented growth rates in sales that outstripped the growth of the differential between production and exports, which indicates that there was a decrease in inventories which, coupled with prices rising higher than the economy would imply the transfer of the increase in the price of inputs (due to the exchange rate effect) from the auto dealers to the final consumers.

The trade sector continues to grow, but at a slower pace

The trade sector grew by 2.4% in 2016 and 3.0% in the first two quarters of 2017, above the forecast rates and GDP growth rates, which were 2.3% in both periods. In relation to tertiary activities, trade contributed 21.8% (contributing 0.76 out of 3.48 percentage points) of growth in the first half of 2017, as shown in Figure 3b.1. At the same time, total tertiary activities contributed 94.2% of GDP growth in this period, implying that 20.5% of the economy's growth in 1Q17 is a result of the performance of the trade sector.

1: The share of trading activities in the informal sector was 45% in 2016.

Figure 3b.1 Average contribution to the real growth rate of tertiary activities in 2017 (%)



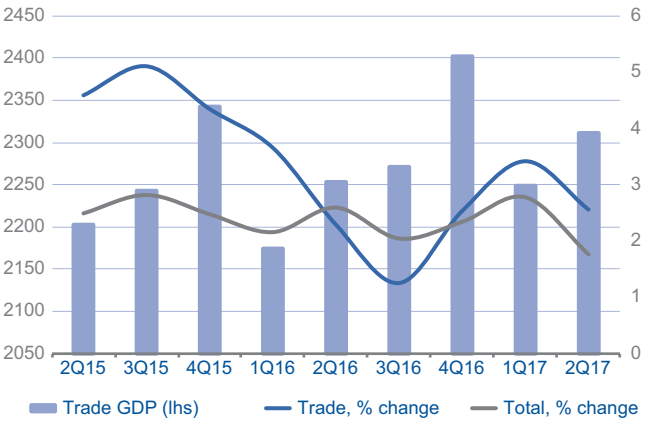
Source: BBVA Research based on data from the INEGI

Consumer confidence, one of the drivers of private consumption, and therefore a determinant of income from trading activity, remained at negative annual growth rates, accentuating this effect towards the close of 2016. As can be seen in Figure 3b.3, a recovery is observed from the end of 1Q17, although it continues in negative territory.

This indicator, on the other hand, may be consistent with the increase in consumption if there is an effect of advanced purchases in the face of a panorama of economic uncertainty. In this case, lower consumer confidence coupled with uncertainty about the economic situation, would lead households to a decrease in personal savings, which coincides with the analysis of the credit part discussed below. Likewise, this phenomenon is compatible with the consumer savings expectations index, which fell at the end of 2016 and in 1Q17; however, there was a relative recovery in this index during 2Q17.

Within a scheme of intertemporal decisions by households, this would imply the transfer of future consumption to present consumption, due to the loss of net present value in future purchases. The expected rate of inflation, together with the rise in interest rates, would be the main explanatory variables of this fact. Likewise, the consumption of durable goods would not be affected in the same way, due to the interest rates that govern credit and the consumption of different types of goods in the economy.

Figure 3b.2 GDP Trade and Total GDP
(millions of pesos and annual % change, sa)



Source: BBVA Research based on data from the INEGI

Figure 3b.3 Consumer confidence and saving possibility
(index 2008 = 100)

Source: BBVA Research based on data from the INEGI

The share of trade in GDP will continue to increase

Trade, the second-largest sector in terms of share of GDP after manufacturing, has increased consistently and continuously over time, only showing a reversal during the 2008-2009 economic crisis. According to the results observed in 2016 and so far this year, the increase in the contribution of trade to GDP is expected to continue in 2017. This momentum of the sector will be driven in particular by the trading branches of grocery stores and raw materials for the wholesale industry, as well as self-service stores and retail department stores. These branches, which are among the largest contributors to GDP trade, continue to show growth rates that explain this phenomenon.

Regarding the subsectors of trading activity, wholesale trade shows a stable growth trajectory, while retail trade is the main driver of the deviations observed in the sectoral momentum in recent years. Likewise, when talking about retail trade, there is higher employment growth in the subsector, which is expected to continue throughout the remainder of the year, albeit at lower performance rates than in 2016.

Both in the external sector and in the domestic market, the performance of the automotive industry, specifically in terms of manufacturing, has been analysed in other issues of the ***Mexico Regional Sectorial Outlook***. On this occasion, we analyse the behaviour of the automotive branch in terms of trade, where indicators point to real growth. With regard to the sales and distribution of vehicles, it can be observed that the internal market component has growth rates of sales greater than the growth of the differential between production and exports, which shows that there was a decrease in inventories in 1Q17, which, together with a price evolution lower than that of the economy up until that point, would imply the absorption of the increase in the price of the inputs due to the effect of the exchange rate by the auto dealers. However, this phenomenon was mitigated and later reversed towards the end of 2Q17, where it was observed that sales in the foreign market increased, while production and domestic sales slowed down. Prices in the domestic auto market showed levels that suggest an increase higher than the level of headline inflation.

Digitalisation and intermediation grow at the highest rates in the sector

In retail trade activities, three branches can be identified, which together account for 73.2% of net revenues in the sub-sector, being grocery stores (15.2%), self-service stores and department stores (32.0%) and motor vehicle sales (26.0%), as shown in Figure 3b.4. With regard to the auto trade, it can be observed that, despite its significant contribution, it has lost share in recent years in the net income of retailers.

It should also be mentioned that the greatest change in the path of growth of trading activity can be found in the retail trade, highlighting the performance of trading activity via the internet, catalogues or television, which is growing at annual rates of around 30.0% as of early 2017, amplifying a trend that had already been observed since the second half of 2015 and throughout 2016. This is consistent with reports from AMVO[2] and AMIPCI[3], which point out that the proportion of online retail sales of large retailers has increased from 4.0% in 2010 to around 20.0% in 2015 and 2016.

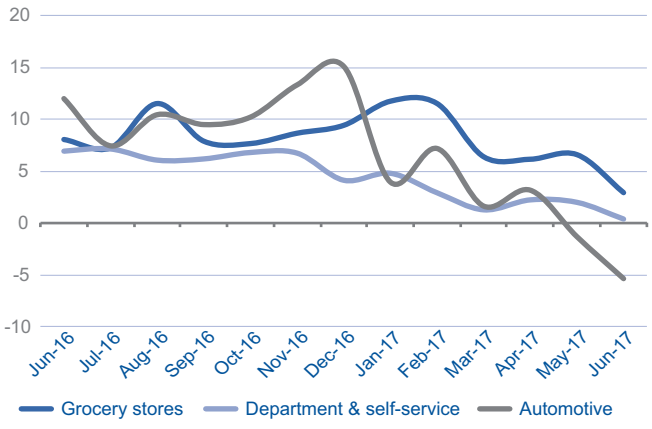
It is estimated that the total of electronic commerce in Mexico has quadrupled in the last six years, reaching levels of around 257 billion pesos (mdp) in 2015. In addition, the expansion of NAFTA to include e-commerce is seen as an additional engine for this branch of trading activity, implying higher growth rates of the same and, consequently, of the trading sector.

2: Mexican Association of Online Sales
3: Mexican Internet Association

In the case of retailers, sales via internet, catalogues, etc. represent only 0.03% of the subsector's revenues in 2017, but there is still a change in demand behaviour, implying greater openness to digital marketing channels. Given the expectation that this trend will continue, it is expected that in the coming years internet retailing will reach even greater levels of penetration in the domestic market and that it will continue to increase its share of the net income from trading activities.

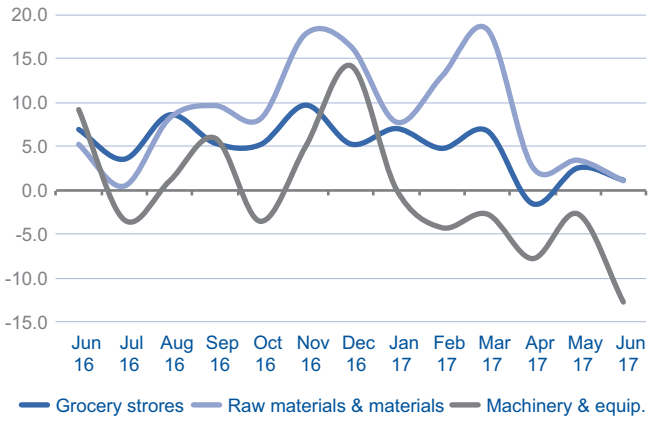
In parallel, and as shown in figure 3b.5, in the wholesale trade subsector, the three branches thereof that contribute 88.4% in net income from trading activity are: raw materials, with 50.6%, of which 94.0% are for industry, then groceries, with 28.8%, followed by machinery and equipment, with 9.0%. In addition, wholesale trade brokerage is the branch with the highest growth rates and an increase in growth rates in the last quarter of 2016, which was mitigated towards the end of 1Q17; the increase in the intermediation branch may be due mainly to sales made by large intermediaries as risk coverage in the face of an uncertain economic outlook and an expectation of inflation and exchange rate risk on the part of buyers.

Figure 3b.4 Net retail income (YoY % change)



Source: BBVA Research based on data from the INEGI

Figure 3b.5 Net wholesale income (YoY % change)



Source: BBVA Research based on data from the INEGI

Openings reaffirm advance of self-service stores and department stores

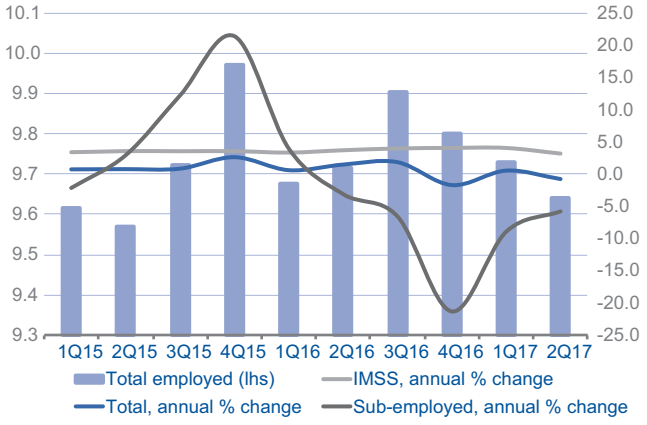
The branch of department stores and self-service stores slowed its growth during 2016 and early 2017, reaching an annual growth rate of 1.5% in 1Q17 according to the Antad total store index,[4] taking into account the new openings of commercial units within this branch of retail trade. The trend among the big players within the Antad and other large retailers is to increase their number of commercial units, thus achieving rates of growth of trading activity higher than those expected at the beginning of 2016.

This has several explanatory factors, including the performance of the external sector and the ability of trading companies to conserve profit margins. This behaviour is observable as from December 2016, mainly due to the increase in imported goods purchased for resale in the sector.

4: National Association of Self-Service and Department Stores

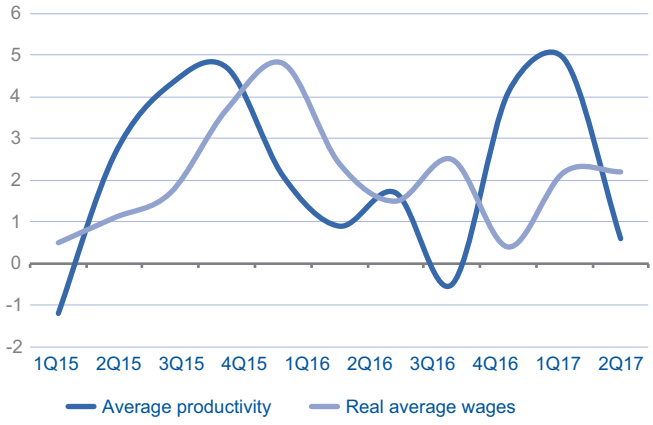
As a result of the growth in trading activity, the number of workers employed in the sector only experienced a reduction during 4Q16, compared to the figures from a year earlier. The underemployed population[5] experienced the greatest fluctuations in the labour market in trading activity, according to data from the ENOE.[6] On the other hand, employed workers remained at levels of 9.8 million, as can be seen in figure 3b.6.

Figure 3b.6 People employed in the construction sector (millions and YoY % change)



Source: BBVA Research based on data from the INEGI

Figure 3b.7 Average productivity and real wages (YoY % change)



Source: BBVA Research based on data from the INEGI

From the point of view of commercial enterprises, average real wages increased during 2016, while average productivity declined only in the third quarter compared to the previous year, as shown in Figure 3b.7. At the end of the year, an increase in productivity can be observed, which, according to economic theory and the evolution of these variables in recent years, should represent a greater momentum in real average wages in 2017. However, higher productivity has not been reflected in an increase in wages, mainly due to the loss of purchasing power in an inflationary outlook and the relative rigidity of nominal wages, which represents a mitigation to the increasing costs of complementary inputs for trading companies (especially those that depend on imports to carry on their trading activity).

Analysing the labour market, specifically the average productivity of workers and real average wages in the sector, it can be observed that there is a period of adaptation of the wage to changes in productivity that is perhaps a consequence of rigidities in wages in the labour market mentioned above. In the second half of 2016, there is a fall in both average wages and the unit cost of labour

The increase in imports has meant an increase in costs for trade that has been experienced since the end of last year and during 1Q17. If one analyses the inputs of the trading company, one can conclude that this increase in prices resulted in a decrease in the potential profits of trading companies.

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

Taking into account that within the trading activity the main inputs are the goods acquired for resale and the labour force: due to the substitution effect in production, a general increase in the prices of the former, would imply a bias towards the hiring of a greater number of workers; due to the income effect, the effect would be the opposite. In line with what was observed, it can be concluded that income effects dominated at the end of 2016 and this was as a consequence of an upward inflationary expectation, underscored by the depreciation of the exchange rate, which increases the inputs from foreign trade.

Another determining characteristic to understand the growth in net sales in the sector is the storage capacity of the players in the retail trade sector. On the one hand, taking into account the production for sales and distribution in the external market and sales in the domestic market, it is possible to deduce the change in inventories at least in the formal sector of the economy.

Thus, for example, in the automotive branch of the retail trade, we can see a change in inventories, which would suggest the existence of this lag in the inflationary transfer to the consumer, despite returning at the end of 1Q17 to long-term inventory levels, accompanied by an increase in exports.

With regard to informal trade, it is only possible to calculate the volume that this type of activity absorbs, based on an estimation according to its historical behaviour, based on the annual data presented by the INEII on informal activities. This information is not as exhaustive or accurate as that presented in the formal sector, which comes from company operating records. However, the behaviour and characteristics of trade in the informal sector should be mentioned and analysed in order to have an comprehensive idea of the trading activities in the Mexican economy.

Trading activity continues to increase in the informal sector

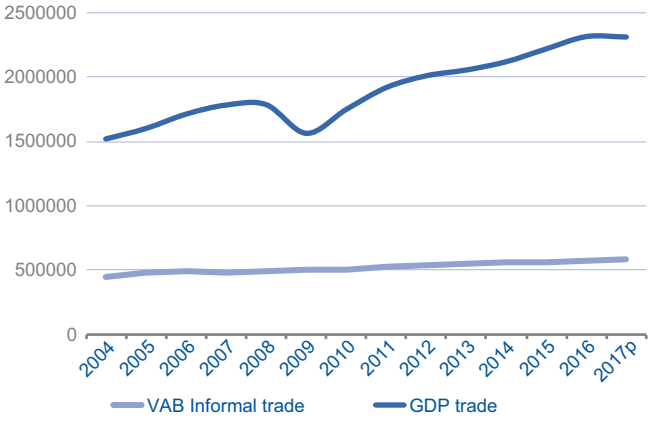
Trade is the main subcomponent of the informal economy, accounting for 45%[7] of the informal sector in 2016 and with a growing trend which is expected to continue in the medium term. On the other hand, it can also be observed that, according to the data available from INEGI, the informal economy has not reacted to general shocks to the economy, the way the formal sector has, and maintains stable growth rates.

An important point to consider is the net change in welfare resulting from informal trading activities. On the one hand, informality creates conditions distortions to a market equilibrium, which implies a cost in social welfare, due to the sales and distribution of goods at prices lower than equilibrium prices in the formal market, but higher than those from perfect competition.

On the other hand, informal activity can increase the possibilities of exchange, although this is not reflected in the official data and is only known through an estimate of trade carried out in the informal sector. It should be noted that the investment by informal traders in evasion costs and the distortions they generate in other markets (such as the labour market) represent additional losses in social welfare, associated with the effect of a negative externality in the sector. As shown in Figure 3b.8, informality has grown over the past few decades. Furthermore, it is expected that the share of trade in the mix of informal sector activities is expected to continue to increase, as shown in Figure 3b.9.

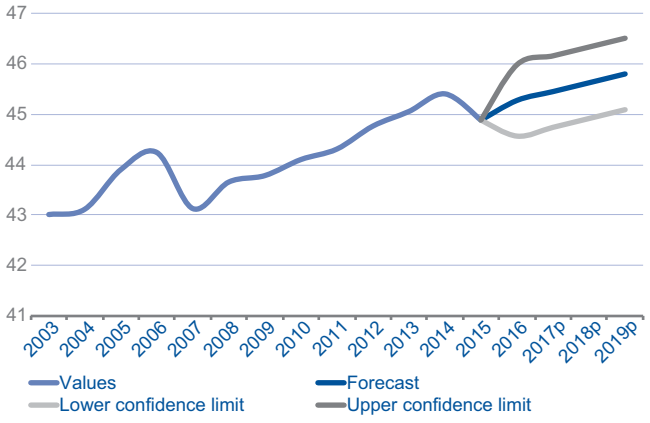
7: According to INEGI data on the measurement of the informal economy.

Figure 3b.8 GDP Trade and informal trade
(Billions of 2008 pesos)



Source: BBVA Research based on data from the INEGI

Figure 3b.9 Trading activity in the informal sector
(%)



Source: BBVA Research based on data from the INEGI

It is important to note that the measurement of informality is affected by the availability of data, and does not fully reflect the ease of adjustment of inputs from the informal sector. On the one hand, the informal sector has hired its labour under conditions that do not cover the benefits provided by law or guarantee labour rights. On the other hand, the formal sector also has the ability to partially adjust employment without legal restrictions because of its extensive use of informal labour, which allows it to adapt and restructure its costs to maintain increasing levels of gross value added.

Increase in prices of imported inputs is transferred with a backlog

As of the US elections in November 2016, the peso experienced an acceleration in its depreciation rate against the US dollar, which was even greater on the announcement of a possible US exit from NAFTA or a renegotiation of the same. The exchange rate experienced an average depreciation equivalent to 6.4% during the last quarter of 2016. The upward trend also continued in January 2017. However, a dynamic of exchange rate appreciation was observed, returning in April to the levels of October 2016 and continuing in 2Q17.

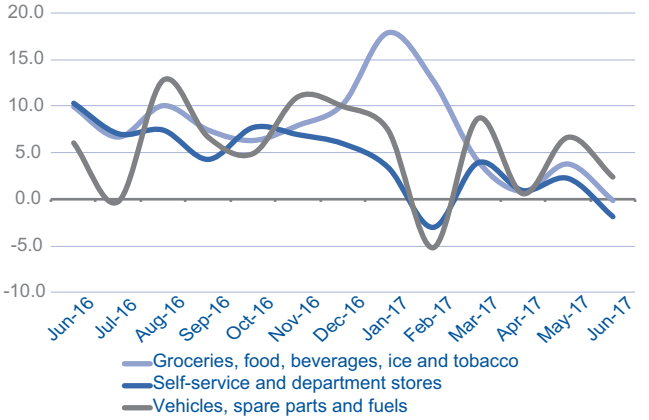
With the adaptation of monetary policy to the new scenario, and redefining the inflationary objective, the economy in 2017 has experienced levels of inflation that will reach an expected maximum in the third quarter of 2017 (3Q17). Given this scenario, traders make an inflationary transfer by adjusting their prices to consumers in a non-immediate way.

This lag is characterised by a limited technical and time horizon and it is observed that, at the beginning of 2Q17, traders began to transfer this increase to prices, as shown in figure 3b.11. In the case of the automotive sector, for example, it can be observed that the lag is of very short duration, and much of this can be explained by the indexation of prices in dollars and by the low level of inventories maintained by the automobile dealers on the showroom floor.

In automotive trade, sales have not been reduced, but apparently there are indicators of a reduction in profit margin, with the industry experiencing a depletion of inventories, either on the showroom floor or in the plant at the beginning of 1Q17. However, towards the end of this period, sales in the external market are increasing, while production and domestic sales are slowing down; the inventories in turn, are returning to normal levels and the inflationary transfer can be observed by analysing the prices in the automotive branch.

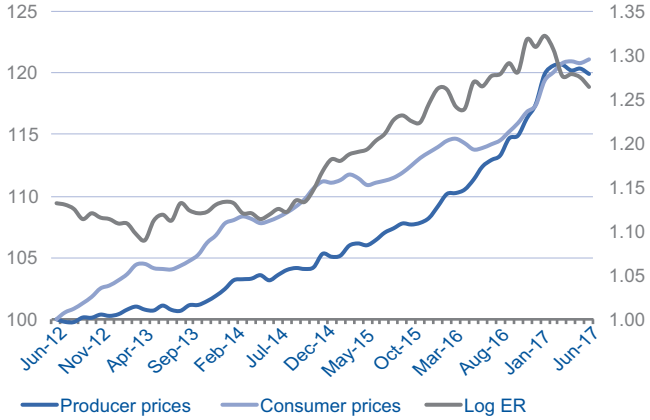
It should be noted that the increase in automotive exports was mainly driven by the demand for Mexican imports in the USA and, therefore, a higher level of production in the sector can be experienced, in parallel and consistently, with a slowdown of the domestic market in Mexico.

Figure 3b.10 Purchases of retail trade (YoY % change)



Source: BBVA Research based on data from the INEGI

Figure 3b.11 INPP, INPC and nominal exchange rate (2012 index = 100 and logarithm)



Source: BBVA Research based on data from the INEGI

As can be seen in Figure 3b.10, both the automotive business and the self-service and department stores reduced their purchases, and this, in the face of increasing consumption in both, led directly to a fall in inventories. This effect is then mitigated from March when, in the face of an exchange rate shift to November 2016 levels and consumer confidence recovering, purchases of inputs in both commercial sectors again undergo positive rates of growth.

This fall in inventories would imply that traders are absorbing the effect of the generalised rise of prices in the short term and that they do not transfer it to the consumer. This is only possible if there is no perfect competition between trading companies and is a technical capacity directly proportional to the degree of concentration of the market and, consequently, the profit margin of the merchants in question.

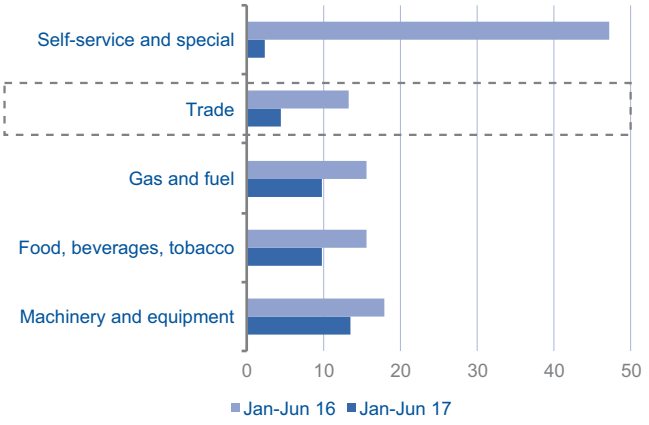
As predicted by economic theory, it is observed that this transfer or pass-through to the consumer takes place once there is a general change in structural variables, as in the case of an uncoupling of inflationary expectations. However, it may be that this transitory increase in the exchange rate involves an increase only in inflation and that the measures taken by the Bank of Mexico to stabilise it achieve a gradual transfer towards the end consumers. The effect is likely to be zero in terms of purchasing power for a given period, while traders have the technical and economic capacity to absorb the inflationary shock and adjust nominal wages to maintain the purchasing power of consumers.

Opposing trends in trade credit and credit for private consumption

On the supply side, the behaviour of credit to trading companies has experienced a rise in real borrowing by commercial banks, while development banking has continued to have a minimal share in the granting within the sector. Analysing the demand side, the case of credit for private consumption deserves a more detailed analysis when observing the behaviour of the same in the last months.

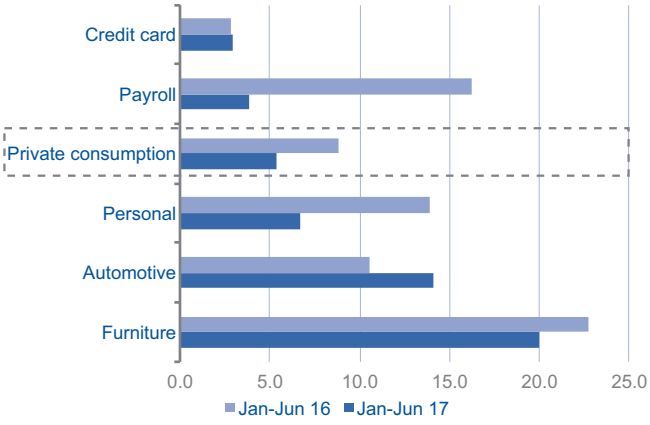
It has been observed that growth rates in credit for private consumption have undergone a significant decrease in real terms, which nevertheless has not been observed in the behaviour of private consumption. When analysing the components of payroll, credit cards, durable goods and personal loans, it can immediately be seen that the automotive sector and the movable property sector maintain growth rates well above the rest of the items of credit for private consumption, mainly due to the relatively stable cost of financing, since long-term interest rates do not show a pronounced upward trend. It is also observed that the behaviour of private savings is consistent with a decrease in the demand for loanable funds.

Figure 3b.12 Credit to trading companies
(YoY % change)



Source: BBVA Research based on data from the INEGI

Figure 3b.13 Credit for private consumption
(YoY % change)



Source: BBVA Research based on data from the INEGI

Analysing the granting of credit to trading companies, it can be observed that, despite large changes in the amount of credit granted by development banks, their percentage is not significant, representing around 3.0% on average. Within commercial banking, there is also a slowdown in credits for private consumption, along with an acceleration of credit to trading companies, as shown in figure 3b.15.

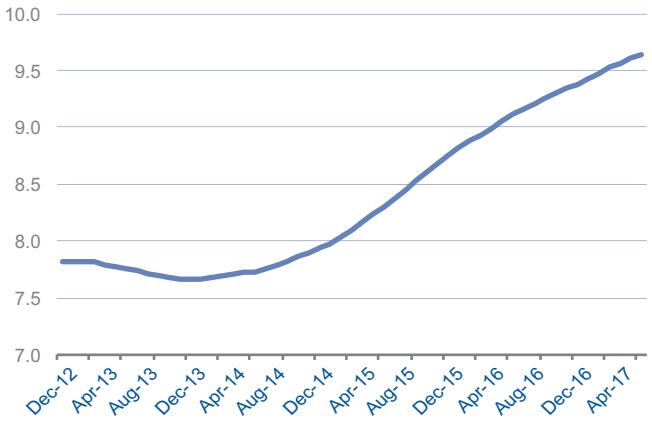
One of the possible explanations for this phenomenon (increase in consumption and reduction in the growth rate of consumer credit) is the decrease in household savings which, as shown in Figure 3b.14, are increasingly held in banknotes and coins. In addition, it is well-known that a greater holding of banknotes and coins, in conjunction with a relative sensitivity of taxes, involves a greater degree of informality in the sector, as we can see in the studies of Tanzi (1980), Taymaz (2009) and Ortiz and Leal (2016). This implication is consistent with what is observed in the data mentioned above; mainly on the side of household demand for credit, anticipated purchases and a higher interest rate, they would explain the fall in the demand for loanable funds, greater use of accumulated savings and the preference for cash.

This greater hold of notes and currencies observed in graph 3b.14, can reflect two possible scenarios:

1. The increase in informality, according to studies such as Taymaz (2009)
2. The restriction imposed by the tax reform on informality as a depository in the financial system

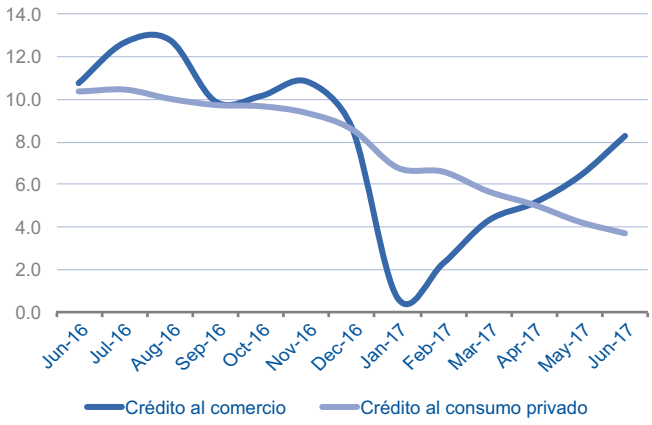
With regard to this second point, it should be clarified that, according to INEGI data, the informal sector has not registered a bigger growth since the fiscal reform of 2014. However, one of the conjectures resulting from greater holding of banknotes and coins is that traders have optimally decided to hold assets in the form of cash, to avoid the monitoring of their income. In preconditions to the tax reform, M2 holding was possible in forms other than cash, with less monitoring of deposits by tax authorities and, therefore, informality allowed merchants to deposit their assets in monetary aggregates other than cash. As of 2014, as shown in figure 3b.13, this is not the case and there is an increasing tendency to hold financial assets in the form of cash. This effect is described by Taymaz (2009) as an indicator of an increase in informality in the economy. In addition, this holding needs to be accompanied by a market with supply or demand which is relatively price sensitive, as in the labour market described by Alonso-Ortiz and Leal (2016); in the case of the commerce sector, and especially in the case of retail trade, economic theory dictates that this is the case, due to the existence of a large number of agents in the market that are trading a product with a low degree of differentiation.

Figure 3b.14 Banknotes and coins with respect to M2 (moving average, %)



Source: BBVA Research based on data from the INEGI

Figure 3b.15 Trade credit and Credit for private consumption (real YoY % change)



Source: BBVA Research based on data from the INEGI

The trade sector remains a driver of growth in 2017

Given a scenario of monetary policy stabilisation and inflation close to reaching a maximum in 3Q17, the sector is expected to grow at more moderate rates during the rest of the year. On the credit side, a recovery is expected in credit for private consumption, to the extent that the expected reduction in inflation allows the recovery of household purchasing power and the gradual decline in benchmark rates reduces the cost of financing.

It is estimated that trading activities will grow by 3.2% in 2017, a rate higher than that estimated for GDP growth and, as a result, the share of trade in GDP will increase again, as it is reduced in the mix of tertiary activities. However, consumer confidence and the results of the NAFTA negotiations are crucial points in defining the trade trajectory in the short and medium terms.

In the case of the automotive branch of trade, the growth of auto loans is expected to continue, having been one of the main drivers of credit for private consumption in 1H17. This increase is consistent with lower sales growth, due both to the increase in the number of units financed and to the increase in unit prices within the automotive industry.

The increasing share of trading activities in the informal sector has not succeeded in undermining the growth of its formal counterpart. In addition, despite the short-term expected slowdown, the sector's extraordinary performance in the first half of the year is one of the major drivers of GDP growth in 2017, and gives evidence of the strength of the domestic market vis-à-vis the external shocks and pressures arising from the global economic and financial environment. During 2018, the Trade GDP would moderate its advance to 1.2% annually after a few positive years.

References

Aguirregabiria, Victor (1999). "The Dynamics of Markups and Inventories in Retailing Firms." Review of Economic Studies, 66(2): 275–308.

Alonso-Ortiz, J. and Leal, J. (2016). Cross-Subsidies, and the Elasticity of Informality to Social Expenditures: The Case of Mexico's Seguro Popular. Review of Income and Wealth. doi:10.1111/roiw.12284.

AMDA (2016). Diálogos con la Industria Automotriz 2012-2018. AMDA. https://www.amda.mx/images/stories/estadisticas/dialogos/Dialogos01-12-16.pdf

Blinder, Alan S. (1981). Inventories and Sticky Prices: More on the Microfoundations of Macroeconomics. NBER Working Paper No. 620.

Cámara de Diputados del H. Congreso de la Unión (2017, mayo 2). Código de Comercio. Última Reforma del Nuevo Código publicado en el Diario Oficial de la Federación del 7 de octubre al 13 de diciembre de 1889. Diario Oficial de la Federación, México.

El Economista. (2017, marzo 14). Walmart aumentará su inversión en México este año. En: http://eleconomista.com.mx/industrias/2017/03/14/wal-mex-aumentara-su-inversion-mexico-2017

Guissarri, Andrea C. (1987). La demanda de circulante y la informalidad en Argentina: 1930-1983. Cuadernos de Economía. Año 24, No. 72, pp. 197-22.

Hosken, Daniel y Reiffen, David (2004). Patterns of Retail Price Variation. RAND Journal of Economics, 35(1): 128–46.

Inegi (2013). Encuesta Anual de Empresas Constructoras 2013. EAEC. Síntesis Metodológica, 66 pp.

Nakamura, Emi (2008). Pass Through in Retail and Wholesale. American Economic Review: Papers & Proceedings, 98:2, 430– 437.

OECD (2017). OECD Economic Surveys: México 2017, OECD Publishing, Paris. http://dx.doi.org/10.1787/eco_surveys-mex-2017-en

Pairolero, Nicholas (2014). Assymetric Information, Incompleteness and Inefficiency in Automobile Dealer Trade Networks. Working Paper. Indiana University Department of Economics. 23 pp.

Reardon, Thomas y Berdegué, Julio A. (2002). The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development, Development Policy Review, Blackwell Publishers, Oxford, 20 (4), pp. 377-378.

Roubaud, F. (1995). "La Economía Informal en México. De la esfera doméstica a la dinámica macroeconómica", Fondo de Cultura Económica, México.

Tanzi, Vito (1980). Underground Economy and Tax Evasion in the United States: Estimates and Implications, Quarterly Review, Banca Nazionale del Lavoro (Roma), No. 132 (December 1980), pp. 427-53.

Taymaz, Erol (2009). Country Economic Memorandum (CEM) – Informality: Causes, Consequences, Policies.

3.c Greater integration between Mexico and the US

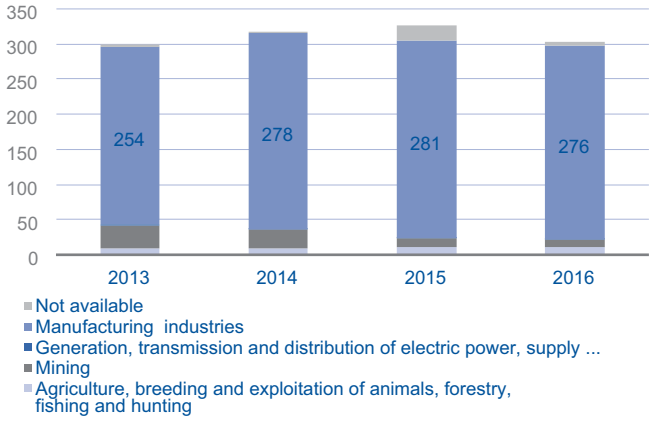
Based on INEGI's administrative records on Mexico's exports and imports by tariff section, here we review the main branches of economic activity involved in trade with the USA. To build this relationship it is necessary to use the correlation table between the TIGIE and the SCIAN that the INEGI itself publishes. Once we can link the exports and imports of each tariff fraction to each branch of economic activity, we identify which of them play a primary role in domestic demand and which of them in the final demand to know their linkage based on the Input Product Matrix, also published by this Institute.

Manufacturing is the leading sector in exports and imports with USA

Manufacturing exports make up 90% of total

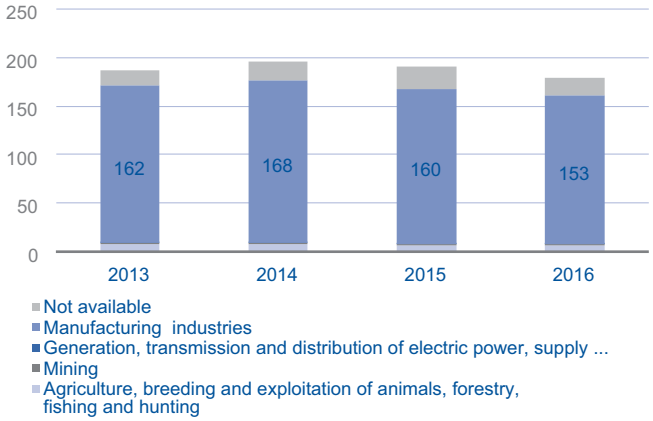
The manufacturing industry is the main sector exported from Mexico to the USA. In 2013, manufacturing exports represented 85% of the total and increased to 90% by the end of 2016. At the other end the trend is similar, in 2013 this sector covered 86% of total imports from the US, a figure that was updated to 85% by the end of 2016. In contrast, exports from the mining sector are becoming less important, while on the import side they are not representative.

Figure 3c.1 Exports from Mexico to USA
Billions of dollars



Source: BBVA Research based on data from the INEGI

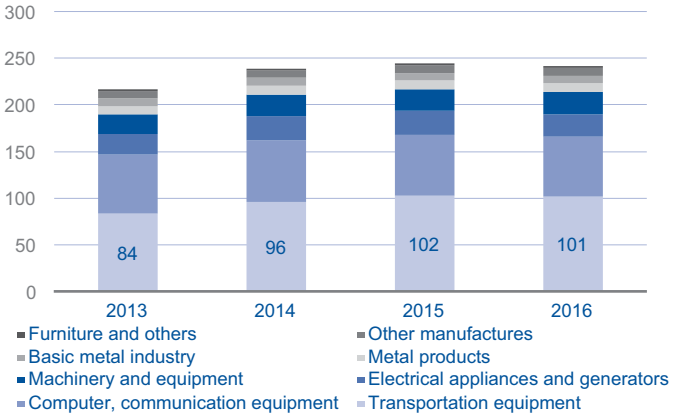
Figure 3c.2 Imports by Mexico from USA
Share %



Source: BBVA Research based on data from the INEGI

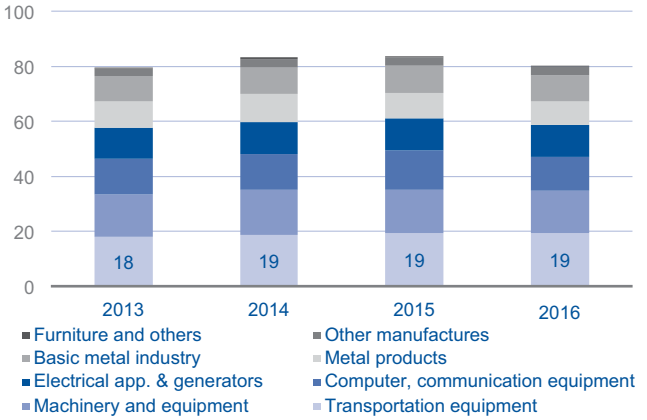
During the same period from 2013 to 2016, Transport Equipment and Computer, Communication and other Equipment are the most exported manufactures. Together, these two subsectors account for almost 70% of Mexico's manufacturing exports to the United States. In the case of imports to Mexico from the US the order of the subsectors changes; while Transportation Equipment remains the main import manufacture, next comes Machinery and Equipment, leaving the production of Computer, Communication and other Equipment in third position. For this reason we will focus our analysis on the bilateral trade in Transportation Equipment.

Figure 3c.3 Manufacturing exports from Mexico to the USA
Millions of workers



Source: BBVA Research based on data from the INEGI

Figure 3c.4 Mexico's manufacturing imports from the US
(YoY % change)



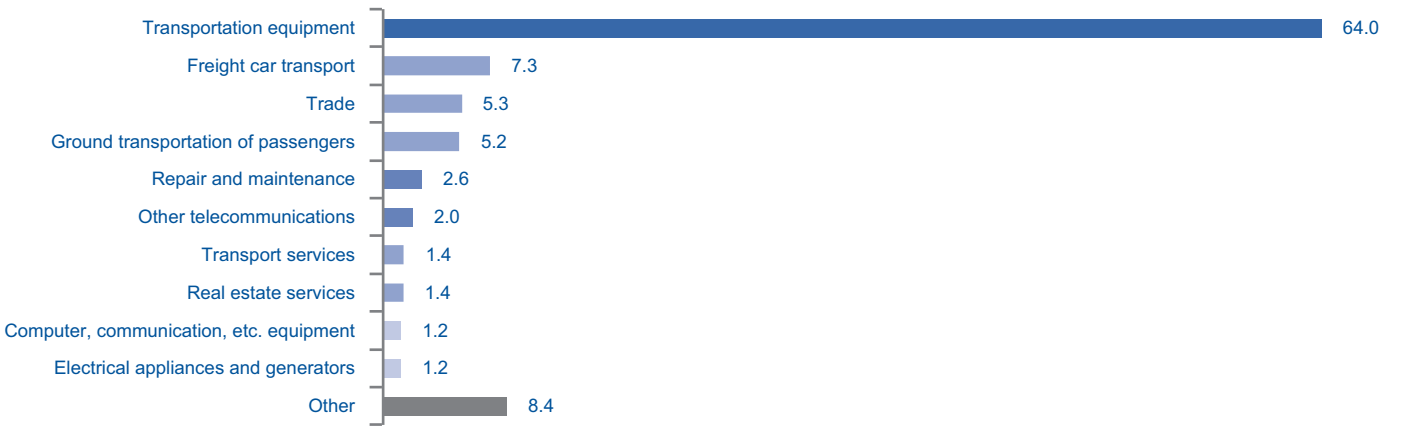
Source: BBVA Research based on data from the INEGI

Transport Equipment generates most of its own inputs

Transport Equipment produces 64% of its own inputs

The Input Product Matrix (IPM) helps us to know the sectors that represent the intermediate demand of the manufacture of Transport Equipment and its proportion. In this way we see that the majority of the inputs of this manufacture are produced in this same activity. Transport Equipment is the main input with a 64% share, indicating that it is a highly integrated industry in itself. After this, the largest manufactures are in Computer, Communication and other Equipment, as well as Electrical Appliances and Generation, but their weight only adds 2.4%. Other activities are more relevant to the Transportation Equipment industry, such as services like Freight Carriers and Ground Transportation of Passengers, with a share of 12.5%. Commerce is the third most important input, contributing 5.3% of the total value of intermediate demand. The total contribution of services to Transportation Equipment comes to 25% of the total. This figure is due both to the sales and distribution of this manufacture and to its transportation for export. Given that the same subsector of Transportation Equipment is the main input of this manufacture, we have broken it down to identify the economic activities with the main inputs that are used from national and imported production.

Figure 3c.5 Intermediate demand by sub-sector of transportation equipment manufacturing
Share %

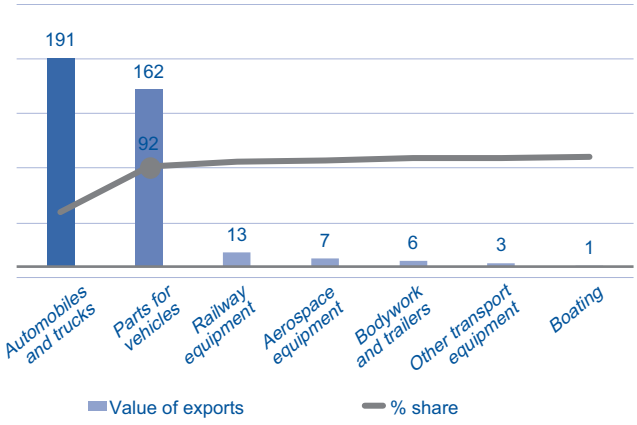


Source: BBVA Research based on data from SCNM and INEGI

A closer look at Mexican exports to the United States by the Transportation Equipment industry also shows a high concentration. During the period from 2013 to 2016, two branches of activity accounted for 92% of these exports, namely Self-Transport and Trucks, as well as Parts for Vehicles, the latter being the input of the first, thus explaining the result analysed in the previous paragraph. The production of Self-Transport came to US$191 billion and Vehicle Parts to US$162 billion in the analysed period. This in turn indicates that Mexico exports the final product more than its parts.

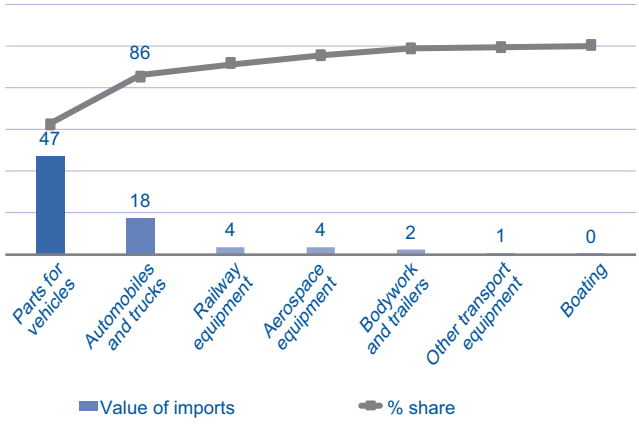
On the other hand, Mexican imports from the United States of this type of manufacturing are also highly concentrated, since 86% of these imports are solely from these two branches of economic activity. However, the order of relevance alternates with respect to exports; that is, Mexico imports more Parts of Vehicles than the final product of Self-Transport and Trucks. These figures already suggest an integration between both economies in the value chain of the production of Transport Equipment.

Figure 3c.6 Export of Transport Equipment from Mexico to USA (Billions of dollars and % share)



Source: BBVA Research based on data from the INEGI

Figure 3c.7 Import of Transport Equipment by Mexico from the US (Billions of dollars and % share)



Source: BBVA Research based on data from the INEGI

The integration of the value chain between Mexico and the US has increased

The US value added in Mexico's exports to that country increased from 40% to 44%

In order to estimate the integration of the value chains between the Mexican and US economies more generally and with greater economic rigor, we have replicated the methodology of Koopman *et al*. (2010).[1] In this paper Koopman *et al* (2010) conclude, among other results, that USA contributed 40% of the value added of its imports from Mexico or of Mexican exports to the USA in the year 2004. This figure has been cited by different sources given the current renegotiation of the North American Free Trade Agreement (NAFTA).

In this section of Mexico Regional Sectorial Outlook we replicate the methodology of Koopman *et al* (2010) for the year 2014 (the most recent year with enough information to perform the calculation). Our estimate is that US value added in total Mexican exports to the USA increased from 40% to 44% over the span of ten years. Some sectors, such as the agricultural or mining sector, are less integrated. Others have a high degree of integration of their value chain as is the case of manufacturing production, specifically the automotive industry. This in turn would explain why exchange rate variations have a smaller impact on the industrial trade of one sector or another, as well as the high relation between the manufacturing cycle of both countries.

1: Koopman, Robert et. al. (2010) Give Credit where Credit is Due: Tracing Value Added in Global Production Chains. NBER Working Paper 16426. Cambridge, MA.

4. Appendix

4.a Indicators of economic performance by state

Table 4a. 1 Selected indicators

					CAGR[4], % 2003 - 2014			Lugar en el Nacional					
	GDP* 2016 (billions of pesos)	Population[1] (persons)	Real GDP 2016 USD[2]	GDP per capita 2016[3]	Real GDP	Popu-lation	Real GDP per capita	Real-GDP 2016[5]	Real GDP per capita 2016[6]	Foreign-Direct Invest. 2016[7]	Jobs created in 2016[8]	Federal Part. 2016[9]	Public Debt 2016[10]
Nacional	**14,050.7**	**122.3**	**752.4**	**6.2**	**2.6**	**2.3**	**0.3**						
Aguascalientes	181.5	1.3	9.7	7.4	4.9	1.6	3.3	25	9	16	13	28	23
Baja California	422.9	3.5	22.6	6.4	2.6	1.9	0.7	10	11	6	7	14	7
Baja California Sur	108.0	0.8	5.8	7.4	4.6	3.4	1.3	29	10	17	19	32	19
Campeche	528.1	0.9	28.3	30.7	-3.8	1.7	-5.5	7	1	23	31	27	29
Coahuila	472.8	3.0	25.3	8.5	3.1	1.4	1.7	8	6	7	10	17	3
Colima	85.4	0.7	4.6	6.2	3.1	1.9	1.2	31	13	32	28	31	14
Chiapas	232.6	5.3	12.5	2.3	1.2	1.5	-0.2	21	32	28	24	8	13
Chihuahua	411.9	3.7	22.1	5.9	3.2	1.3	1.9	13	15	4	5	12	2
Mexico City	2,407.0	8.8	128.9	14.6	2.7	-0.1	2.8	1	2	1	1	2	10
Durango	167.9	1.8	9.0	5.0	2.1	1.1	1.0	26	20	22	20	26	12
Guanajuato	621.9	5.9	33.3	5.7	3.8	0.9	3.0	6	16	3	6	7	26
Guerrero	199.5	3.6	10.7	3.0	2.1	0.7	1.4	24	30	8	29	18	30
Hidalgo	232.8	2.9	12.5	4.3	2.9	1.3	1.6	20	24	26	21	20	22
Jalisco	913.1	8.0	48.9	6.1	3.2	1.3	1.8	4	14	19	2	3	17
México	1,274.3	17.1	68.2	4.0	3.0	1.7	1.3	2	26	5	4	1	20
Michoacán	332.4	4.6	17.8	3.8	2.5	0.7	1.8	15	27	27	15	10	9
Morelos	162.3	1.9	8.7	4.5	2.3	1.3	1.0	27	21	25	27	23	18
Nayarit	94.3	1.2	5.0	4.1	3.5	1.9	1.6	30	25	31	26	30	8
Nuevo León	1,067.9	5.2	57.2	11.1	4.1	1.6	2.4	3	3	2	3	5	4
Oaxaca	213.8	4.0	11.4	2.8	1.9	0.6	1.2	22	31	24	25	15	16
Puebla	442.9	6.3	23.7	3.8	2.7	1.1	1.6	9	28	10	11	6	25
Querétaro	321.6	2.0	17.2	8.5	5.3	1.7	3.6	16	5	13	8	21	31
Quintana Roo	239.0	1.6	12.8	7.9	4.9	3.4	1.5	19	7	21	9	25	1
San Luis Potosí	281.3	2.8	15.1	5.4	3.6	1.0	2.6	18	17	12	14	19	24
Sinaloa	301.9	3.0	16.2	5.4	2.8	1.0	1.8	17	18	18	16	16	21
Sonora	421.1	3.0	22.6	7.6	3.8	1.6	2.2	11	8	14	12	13	5
Tabasco	411.1	2.4	22.0	9.1	2.9	1.2	1.7	14	4	20	30	9	27
Tamaulipas	420.8	3.6	22.5	6.3	2.1	1.5	0.7	12	12	9	18	11	15
Tlaxcala	77.2	1.3	4.1	3.2	2.1	1.5	0.5	32	29	29	23	29	32
Veracruz	661.0	8.1	35.4	4.4	2.2	0.8	1.4	5	23	11	32	4	6
Yucatán	211.7	2.1	11.3	5.3	3.3	1.4	1.9	23	19	30	17	22	28
Zacatecas	130.6	1.6	7.0	4.4	3.7	0.8	2.9	28	22	15	22	24	11

* 2016 GDP at current prices
1: Mexico population projections 2010-2030, Conapo. Figures in million persons
2: Billions of US dollars (annual average exchange rate)
3: Thousands of US dollars (annual average exchange rate)
4: Compounded Annual Growth Rate (%)
5: Ranking based on 2016 GDP
6: Ranking based on 2016 GDP per capita
7: Ranking based on foreign direct investment in the state during 2016
8: Ranking based on the change in IMSS-registered workers during 2016
9: Ranking based on the federal participations included in branch 28 of the PEF 2016
10: Ranking based only on financial obligations registered at the SHCP as a share of the budgeted federal participations for each state in 2016
Source: BBVA Research with Inegi, Conapo, Banxico, STPS, SE and SHCP data

4.b Indicators by state

	Aguascalientes						Baja California					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	4.3	6.7	8.1	8.3	10.4		7.0	3.4	3.9	1.8	2.4	
Primary Sector	2.4	7.0	7.1	-2.5	8.2		17.8	0.3	2.3	-10.3	5.6	
Secondary Sector	3.2	6.9	9.3	10.0	11.1		10.1	3.2	3.6	1.1	0.3	
Tertiary Sector	5.6	6.7	7.1	7.8	10.0		5.1	3.7	4.1	2.8	3.5	
Industrial Activity	3.3	6.7	9.7	10.4	9.3	4.9	10.2	3.3	3.9	0.8	-0.1	4.4
Manufacturing production	5.3	4.2	1.8	10.0	6.9	13.7	9.4	6.2	6.2	6.1	7.0	9.5
Construction	-3.2	35.2	60.2	22.3	29.6	-27.5	28.7	-2.8	-12.3	-6.1	-18.2	-2.7
Public works	13.1	23.1	47.2	0.0	33.2	-18.3	28.2	34.4	46.6	49.8	8.0	15.0
Private works	-18.5	105.8	128.0	179.6	29.0	-58.8	35.6	-23.9	-47.5	-35.1	-41.2	-18.9
Retail sales	5.2	16.9	15.3	15.9	3.5	1.6	13.8	23.3	23.8	25.6	9.1	4.4
Wholesales	9.8	49.9	52.8	57.8	56.1	0.1	4.4	13.2	13.8	15.6	5.3	1.2
Total Employment (IMSS-registered workers)	5.6	7.3	7.7	7.0	5.9	5.2	7.0	4.7	4.5	5.5	5.8	5.3
Permanent	6.0	6.8	7.2	6.6	6.3	6.2	6.5	4.8	5.0	5.3	5.9	5.6
Temporary (urban)	2.6	11.4	13.0	10.7	2.2	-4.8	7.1	5.7	7.1	7.3	4.5	1.7
Federalized resources (Branch 28)	6.8	8.1	8.5	6.5	11.9	-4.5	2.9	12.2	22.6	13.9	45.5	11.7
Foreign Direct Investment (millions of USD)	692.3	472.0	124.5	153.7	402.0	252.2	1193.2	1469.0	208.1	392.3	471.5	574.7

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Baja California Sur						Campeche					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	6.1	4.4	7.6	4.7	5.7		-6.6	-7.4	-8.2	-8.7	-9.9	
Primary Sector	8.4	4.7	27.5	-12.5	12.7		4.0	9.8	20.2	13.0	-2.5	
Secondary Sector	1.7	2.5	9.0	-1.0	-6.1		-7.6	-7.9	-8.6	-9.2	-11.2	
Tertiary Sector	7.5	5.2	6.3	7.8	8.8		-0.2	-5.4	-6.8	-6.9	-2.5	
Industrial Activity	2.0	2.6	8.9	-0.7	-5.4	6.1	-7.5	-8.1	-8.7	-9.1	-10.4	-8.4
Manufacturing production	-0.6	4.3	4.0	7.5	5.1	3.3	2.6	3.3	-0.2	3.0	0.4	1.8
Construction	53.0	-4.4	5.7	32.2	2.7	90.6	0.7	-21.4	-12.4	-52.0	-51.9	-50.2
Public works	204.9	33.7	16.8	123.7	39.5	135.7	11.6	-40.6	-39.7	-28.1	-37.0	34.7
Private works	5.4	-19.0	-10.3	-32.1	-21.0	29.5	1.4	-19.1	-10.0	-53.1	-52.3	-52.7
Retail sales	9.0	29.1	32.4	41.5	21.5	8.9	8.5	0.7	-9.5	-7.7	-11.7	-8.3
Wholesales	14.8	4.1	-0.1	8.2	5.2	1.1	11.4	-3.6	-11.3	0.3	5.6	-2.1
Total Employment (IMSS-registered workers)	5.8	7.4	7.5	8.5	10.0	9.0	-4.8	-12.4	-14.3	-14.3	-11.6	-5.5
Permanent	3.7	5.8	6.7	7.2	7.8	6.9	-4.4	-8.3	-9.4	-10.0	-9.4	-5.0
Temporary (urban)	6.8	12.1	11.4	18.6	22.6	21.1	-6.8	-27.3	-32.3	-30.1	-20.1	-7.4
Federalized resources (Branch 28)	2.8	5.0	15.9	10.3	30.1	17.6	17.7	-8.5	-9.7	-12.1	0.1	-31.4
Foreign Direct Investment (millions of USD)	370.5	450.5	66.9	50.2	124.3	138.8	502.9	212.4	45.1	61.7	79.6	33.8

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Chiapas						Chihuahua					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	-4.5	2.3	4.0	1.2	0.2		4.9	2.8	1.7	1.6	2.6	
Primary Sector	0.0	4.1	18.0	1.6	5.7		2.5	-6.7	2.8	2.4	6.7	
Secondary Sector	-11.8	-3.1	0.4	-9.5	-9.2		6.7	2.3	-0.5	-2.6	1.7	
Tertiary Sector	-1.5	4.4	4.3	5.5	3.0		4.2	3.7	2.9	4.3	2.9	
Industrial Activity	-11.7	-3.0	0.4	-8.7	-10.1	-6.1	7.0	2.0	-0.2	-2.8	1.8	-1.0
Manufacturing production	-1.4	0.7	-1.9	-10.4	-6.8	-9.2	7.5	4.6	3.9	2.8	8.5	6.2
Construction	-1.1	11.2	9.3	37.9	41.4	23.1	16.4	5.3	10.3	0.8	-7.4	-10.0
Public works	22.7	116.9	231.1	123.5	150.8	19.3	54.4	5.8	8.7	11.7	-6.0	-10.4
Private works	-5.5	-27.2	-40.6	-14.8	9.1	25.6	-24.1	7.7	14.0	-19.0	-8.2	-9.4
Retail sales	-9.3	47.5	51.8	44.6	12.8	0.5	5.2	19.3	19.3	23.7	3.0	2.7
Wholesales	17.2	-1.8	-4.5	-0.5	4.6	0.4	8.9	17.4	13.3	14.6	3.3	-0.7
Total Employment (IMSS-registered workers)	2.2	1.2	0.7	1.3	0.3	0.2	6.0	5.4	5.1	4.3	4.3	3.8
Permanent	2.3	1.7	1.0	1.6	0.0	0.2	6.6	5.6	5.2	4.3	4.0	3.6
Temporary (urban)	6.5	-2.0	-1.8	-1.5	2.2	-1.1	0.7	3.4	5.1	5.0	7.3	7.0
Federalized resources (Branch 28)	1.0	7.5	9.1	3.3	10.8	-6.5	5.1	5.3	6.4	6.0	27.1	8.4
Foreign Direct Investment (millions of USD)	222.3	125.8	30.6	19.1	105.2	14.4	2466.0	1970.5	515.8	599.1	463.8	514.2

	Mexico City						Coahuila					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	2.5	4.1	3.6	5.1	4.6		2.2	1.7	0.4	2.8	3.9	
Primary Sector	-6.1	-11.1	-8.4	-9.6	9.2		-5.1	-4.8	2.9	-7.2	2.8	
Secondary Sector	-4.6	0.5	1.3	2.8	3.6		0.5	2.0	-0.3	4.0	4.8	
Tertiary Sector	3.4	4.5	3.9	5.4	4.7		4.6	1.7	0.9	2.0	3.0	
Industrial Activity	-4.6	0.6	1.7	3.4	1.9	-0.7	0.4	2.2	-0.4	4.5	3.4	6.7
Manufacturing production	-2.4	-1.0	-1.6	-0.1	-2.2	-1.7	1.2	3.1	1.8	6.2	2.9	3.3
Construction	-32.4	19.4	40.7	21.3	15.6	8.1	9.4	1.7	-19.8	23.5	48.9	90.3
Public works	-27.0	19.1	51.4	31.8	43.5	35.0	17.4	-6.1	-22.8	12.1	23.8	50.1
Private works	-35.8	28.1	28.5	12.0	-19.1	-36.4	-11.7	42.3	-9.4	75.9	128.7	243.3
Retail sales	1.5	22.6	22.5	24.0	4.5	0.8	8.9	14.3	16.0	20.2	11.8	7.1
Wholesales	-1.4	10.0	8.0	19.0	15.6	3.2	7.6	11.2	4.8	12.2	8.7	-1.5
Total Employment (IMSS-registered workers)	4.5	3.6	3.4	3.9	4.2	3.7	5.1	3.4	3.8	3.1	3.3	3.3
Permanent	4.4	3.6	3.3	3.9	4.5	4.1	4.9	3.8	4.4	3.9	4.1	3.9
Temporary (urban)	5.6	3.8	4.4	4.3	2.3	1.2	7.1	0.5	-1.1	-2.9	-2.2	-1.1
Federalized resources (Branch 28)	12.0	8.2	7.3	4.8	14.8	-3.7	1.1	12.2	14.2	6.9	17.3	-3.1
Foreign Direct Investment (millions of USD)	5612.0	5870.8	880.8	897.6	1864.6	723.5	1389.5	1286.3	131.6	841.9	368.7	316.8

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Colima						Durango					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	3.0	4.5	6.4	3.8	3.2		1.1	3.3	2.2	4.9	4.4	
Primary Sector	2.3	13.6	14.3	53.9	4.3		-1.1	1.8	0.8	8.7	13.4	
Secondary Sector	3.1	0.7	-3.7	-11.6	-8.3		-1.1	-0.1	0.0	0.6	6.1	
Tertiary Sector	3.1	5.7	10.2	7.7	8.0		3.3	5.6	3.9	6.8	2.2	
Industrial Activity	3.1	1.0	-3.7	-11.8	-9.3	3.0	-1.0	0.0	-0.4	1.0	4.7	-0.2
Manufacturing production	14.7	-2.6	-10.8	-7.8	-7.0	2.8	2.0	-0.8	0.8	3.0	5.9	2.3
Construction	-2.4	22.3	12.5	-19.2	-3.4	22.2	-15.1	24.0	16.3	16.4	11.4	-11.2
Public works	10.2	49.7	47.4	-10.2	16.5	33.0	-32.5	26.1	-1.2	1.8	-22.8	-46.2
Private works	-7.7	-8.1	-24.5	-32.6	-33.9	14.7	5.3	23.9	31.7	24.1	46.5	16.6
Retail sales	4.6	23.4	47.7	37.8	28.0	41.9	10.1	35.9	33.7	30.2	7.6	-0.1
Wholesales	-1.2	39.4	55.3	44.5	18.6	-4.7	3.7	10.8	12.2	21.8	-2.5	-16.7
Total Employment (IMSS-registered workers)	2.3	1.8	2.1	3.5	4.6	5.2	2.8	3.7	3.3	4.4	3.4	2.7
Permanent	1.6	3.1	3.3	5.2	4.6	5.3	2.9	4.7	4.5	5.3	4.4	3.1
Temporary (urban)	5.1	-5.5	-5.2	-5.3	3.1	5.1	2.3	-3.3	-4.9	-2.6	-5.4	-1.2
Federalized resources (Branch 28)	4.7	13.1	36.8	10.6	31.8	5.4	5.6	5.6	8.7	4.1	19.4	3.8
Foreign Direct Investment (millions of USD)	143.3	-35.9	-43.2	-29.1	43.4	22.9	217.6	262.1	20.2	48.2	36.6	5.5

	State of Mexico						Guanajuato					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	1.8	3.6	3.7	3.9	5.2		6.5	5.0	7.8	6.5	7.1	
Primary Sector	2.8	8.5	8.3	10.6	2.1		-3.8	2.4	-5.0	7.5	6.8	
Secondary Sector	0.4	4.6	5.4	5.6	9.1		9.6	4.6	7.5	9.0	9.7	
Tertiary Sector	2.4	3.1	2.8	2.9	3.4		5.0	5.5	8.8	4.6	5.2	
Industrial Activity	0.4	4.8	5.3	6.3	6.7	7.6	9.8	4.4	8.5	9.0	9.4	4.9
Manufacturing production	0.6	1.5	4.5	3.6	4.4	6.3	12.9	4.4	3.5	5.9	6.3	1.8
Construction	-4.4	27.6	15.7	23.5	49.4	21.1	7.5	-8.4	3.3	5.9	21.9	4.6
Public works	-26.3	37.5	29.0	26.4	34.6	24.6	5.9	2.3	16.8	18.9	19.1	-8.5
Private works	30.1	21.5	7.4	21.4	63.0	20.9	15.9	-29.6	-28.4	-20.3	33.2	46.2
Retail sales	5.8	21.8	19.5	25.4	6.4	2.6	11.1	31.8	31.9	37.8	10.3	4.7
Wholesales	4.2	19.5	17.6	18.6	10.8	-3.3	8.8	12.5	10.7	11.6	11.3	-0.5
Total Employment (IMSS-registered workers)	4.0	4.0	3.8	4.2	4.1	4.1	6.5	5.5	5.9	5.6	5.8	6.0
Permanent	3.8	4.0	3.9	4.0	3.8	4.0	5.9	5.0	5.0	5.6	6.3	7.0
Temporary (urban)	5.1	3.8	3.7	5.2	5.5	4.3	11.0	7.7	10.4	6.0	3.3	-0.8
Federalized resources (Branch 28)	6.1	5.2	5.5	4.5	22.7	8.3	7.8	9.0	7.0	4.6	19.1	0.8
Foreign Direct Investment (millions of USD)	2882.3	2221.4	293.3	626.2	933.0	728.6	1753.3	1278.0	244.8	155.2	647.2	379.3

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Guerrero						Hidalgo					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	0.0	1.5	1.8	-1.1	-2.6		3.9	3.9	4.8	-1.6	-2.8	
Primary Sector	-5.4	14.7	28.4	29.8	4.2		1.1	2.1	4.3	-0.1	7.2	
Secondary Sector	-10.4	0.9	4.3	4.6	-11.1		3.6	2.0	3.1	-8.3	-10.6	
Tertiary Sector	4.2	1.1	-0.1	-4.4	-0.8		4.1	5.6	6.0	4.1	2.5	
Industrial Activity	-9.9	1.1	4.1	5.2	-10.6	-9.0	3.7	2.1	3.2	-8.2	-10.2	-4.3
Manufacturing production	3.2	-0.9	1.7	-0.3	1.0	1.7	1.4	-0.2	1.9	-8.2	-5.3	-1.7
Construction	-20.4	-5.0	15.9	-1.7	-26.0	-26.4	18.3	-2.4	-19.6	-21.6	-52.3	-41.1
Public works	-26.0	71.5	111.1	89.0	45.5	-10.8	-21.2	-6.7	-4.1	-25.2	-29.6	-24.2
Private works	-17.1	-28.3	-12.2	-34.2	-52.8	-34.5	55.3	1.0	-24.9	-20.2	-60.4	-47.0
Retail sales	14.9	9.3	2.6	0.5	-3.5	-0.2	2.5	31.6	31.2	25.2	-4.9	-7.5
Wholesales	3.0	11.4	3.8	3.3	-3.0	-17.2	5.9	9.6	9.0	20.3	26.5	4.4
Total Employment (IMSS-registered workers)	1.2	0.9	1.9	1.8	2.3	3.9	2.2	3.7	4.0	4.1	3.3	2.3
Permanent	0.6	1.5	2.7	2.5	3.9	5.1	2.3	5.5	6.2	6.0	4.4	2.7
Temporary (urban)	4.0	-1.3	-1.4	-1.1	-3.4	0.5	1.9	-1.9	-2.7	-2.1	-0.4	1.1
Federalized resources (Branch 28)	5.7	4.0	2.4	7.2	17.0	-5.9	2.9	10.0	6.5	8.9	28.3	-0.7
Foreign Direct Investment (millions of USD)	167.3	172.9	24.8	52.0	28.6	157.1	528.2	429.2	79.8	168.8	63.1	118.7

	Jalisco						Michoacán					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	4.8	2.6	2.7	0.7	3.3		0.0	4.1	0.6	9.0	4.6	
Primary Sector	2.4	3.6	17.4	2.5	13.7		-2.6	6.9	3.5	16.0	14.9	
Secondary Sector	7.1	0.5	-3.5	-1.5	2.0		-3.9	3.4	-2.0	18.1	8.0	
Tertiary Sector	3.9	3.7	4.9	1.7	3.1		2.0	4.0	1.1	4.9	2.0	
Industrial Activity	7.2	0.5	-3.6	-1.2	0.0	-0.5	-4.0	3.5	-2.4	18.6	6.5	-0.4
Manufacturing production	5.7	1.0	-0.5	-2.3	0.8	0.7	-8.3	3.4	3.6	21.2	16.7	9.5
Construction	27.9	-2.7	-13.0	8.0	4.5	13.3	28.5	8.1	-28.1	23.3	-35.5	-49.8
Public works	49.1	-5.5	-20.5	3.7	-5.4	20.9	-18.3	44.5	11.0	64.6	-4.5	-41.4
Private works	-5.3	7.8	12.6	19.6	33.6	-5.9	96.6	8.9	-46.1	15.1	-59.3	-57.5
Retail sales	4.7	21.7	21.7	29.6	11.8	5.6	2.2	23.3	13.8	26.4	-7.3	2.0
Wholesales	9.0	15.7	8.2	8.5	-5.9	-5.9	5.2	14.5	13.5	15.4	13.0	12.1
Total Employment (IMSS-registered workers)	5.1	5.4	5.8	6.1	6.2	6.0	4.3	5.0	4.4	5.9	6.2	6.9
Permanent	4.4	4.7	5.2	5.4	5.4	5.2	2.6	5.4	5.5	6.3	6.2	7.2
Temporary (urban)	11.0	10.0	8.9	9.4	9.7	9.8	10.9	-2.0	-5.3	-1.0	3.9	3.8
Federalized resources (Branch 28)	7.8	9.9	6.8	8.7	23.2	7.1	3.5	9.2	12.1	10.7	18.4	-6.0
Foreign Direct Investment (millions of USD)	2735.7	1952.3	48.4	151.3	371.8	140.6	426.1	163.4	11.6	53.6	91.6	29.2

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Morelos						Nayarit					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	2.8	1.7	2.7	3.1	4.6		4.7	2.4	2.2	5.9	2.7	
Primary Sector	-9.2	21.2	40.9	40.1	-7.6		-1.5	8.5	17.6	5.6	12.2	
Secondary Sector	-0.7	6.8	4.1	26.0	0.4		5.5	-2.1	-5.1	-1.0	1.6	
Tertiary Sector	3.9	-0.1	1.0	2.5	4.1		7.5	1.0	0.8	1.3	2.4	
Industrial Activity	1.8	4.6	4.4	2.1	6.6	3.7	0.0	7.4	5.6	26.1	0.5	-9.6
Manufacturing production	6.0	2.8	3.1	-2.6	3.0	4.1	7.1	-0.3	-2.3	-0.8	-0.1	-4.6
Construction	-8.7	-25.0	-28.2	21.7	160.0	63.8	5.5	5.0	4.2	22.1	16.8	-22.1
Public works	23.3	-24.2	-34.7	18.0	29.2	40.8	-22.6	32.6	42.8	37.7	49.1	12.7
Private works	-26.3	25.0	28.0	46.6	645.1	127.2	90.0	-0.7	-16.7	9.7	-10.7	-48.0
Retail sales	4.9	8.7	8.9	15.2	14.5	-2.0	7.9	14.9	14.2	17.6	4.4	9.1
Wholesales	1.4	9.8	13.5	10.5	1.9	-2.7	8.1	9.0	4.6	18.8	15.5	-2.7
Total Employment (IMSS-registered workers)	1.5	1.7	1.6	2.4	1.2	1.1	4.0	3.7	5.2	3.6	4.7	3.5
Permanent	1.0	1.7	1.7	2.5	1.3	0.9	3.1	4.1	5.2	3.9	3.8	2.6
Temporary (urban)	7.9	2.3	0.7	1.7	1.6	2.1	6.5	2.0	3.2	3.8	8.6	9.8
Federalized resources (Branch 28)	3.0	1.3	6.6	-2.6	23.1	11.1	4.2	7.5	9.5	11.4	31.2	0.8
Foreign Direct Investment (millions of USD)	448.6	182.3	22.1	22.7	105.9	110.1	100.1	83.9	10.4	28.3	43.5	18.3

	Nuevo León						Oaxaca					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	4.3	2.5	1.7	4.1	3.6		1.7	0.0	0.0	1.0	2.3	
Primary Sector	-9.7	-4.9	-3.1	-8.0	0.0		-3.0	6.7	8.4	5.7	2.3	
Secondary Sector	1.4	-0.7	0.6	2.9	4.6		2.4	0.8	1.3	2.2	6.8	
Tertiary Sector	3.7	5.5	6.0	7.4	4.8		2.3	-0.2	-0.7	-0.5	1.2	
Industrial Activity	5.5	-2.4	-5.0	-1.0	1.4	1.1	1.5	-0.7	0.6	2.6	2.9	-8.9
Manufacturing production	0.0	2.2	2.0	7.0	6.3	5.0	-1.1	-1.1	-4.9	-7.3	-1.3	-11.4
Construction	30.5	-21.5	-30.0	-26.5	-16.6	7.7	2.2	-29.1	-22.3	-34.6	-47.1	-62.8
Public works	12.1	-2.1	-9.3	-10.3	-7.3	13.2	-65.8	62.5	223.9	-40.2	-9.6	66.0
Private works	94.5	-57.5	-68.6	-66.1	-47.1	-13.8	53.6	-35.6	-40.3	-32.0	-57.9	-80.0
Retail sales	5.3	17.6	14.1	19.2	3.0	3.2	4.5	9.5	10.7	11.8	1.3	0.3
Wholesales	-6.9	0.9	5.3	7.8	0.9	-0.1	-0.3	9.4	10.1	9.2	3.1	-5.6
Total Employment (IMSS-registered workers)	5.0	4.3	4.0	4.5	4.8	4.5	3.7	1.2	1.1	1.4	1.7	2.0
Permanent	5.2	5.5	5.4	5.4	5.4	4.7	3.8	3.5	3.5	3.3	3.0	2.8
Temporary (urban)	3.1	-5.7	-7.2	-3.8	-0.7	2.4	2.4	-13.3	-13.6	-10.9	-7.6	-2.5
Federalized resources (Branch 28)	5.0	13.2	11.2	9.4	13.7	-3.8	-2.2	6.7	7.7	0.7	17.4	-2.1
Foreign Direct Investment (millions of USD)	3280.9	2699.8	421.8	339.1	794.5	116.7	292.7	186.4	1.9	39.4	134.9	9.9

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Puebla						Querétaro					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	2.3	1.7	2.9	1.6	4.5		8.0	2.1	-0.2	3.0	6.1	
Primary Sector	10.1	-0.7	-1.0	2.8	-2.5		7.6	-0.1	11.1	-13.4	15.9	
Secondary Sector	10.4	0.9	-3.7	3.9	7.9		-3.6	29.5	54.2	36.7	12.3	
Tertiary Sector	1.8	2.4	4.0	1.2	3.7		6.1	3.3	2.5	3.1	4.2	
Industrial Activity	2.6	0.5	1.3	2.3	8.9	11.9	10.5	1.0	-2.9	4.1	6.0	3.9
Manufacturing production	1.3	-2.0	0.4	1.0	14.7	21.6	10.7	1.3	-2.2	-0.4	1.0	1.5
Construction	23.7	9.4	5.7	0.4	-21.8	-32.1	6.7	1.5	3.6	25.5	39.2	4.2
Public works	55.3	6.9	20.4	26.1	2.1	18.1	-8.6	3.4	8.1	27.7	30.3	-20.6
Private works	9.8	22.6	-7.0	-15.0	-44.9	-74.0	70.0	0.6	-6.1	20.8	53.3	75.1
Retail sales	5.0	17.3	20.6	18.1	4.3	2.5	12.7	29.0	28.7	27.8	7.6	0.2
Wholesales	3.9	4.6	5.6	5.6	6.7	1.2	19.6	1.9	-5.7	2.2	0.0	-10.3
Total Employment (IMSS-registered workers)	5.1	4.1	3.9	5.2	5.4	5.6	5.8	7.5	7.7	7.8	8.0	8.4
Permanent	4.2	4.4	4.2	4.6	3.9	3.9	5.6	7.5	7.7	8.0	8.3	8.9
Temporary (urban)	9.9	2.5	3.1	8.9	13.2	14.9	6.9	7.9	7.7	7.0	6.7	6.6
Federalized resources (Branch 28)	3.7	5.8	8.6	2.3	22.6	7.0	6.7	10.5	4.3	7.2	12.4	3.2
Foreign Direct Investment (millions of USD)	739.2	1202.4	409.1	376.5	260.5	-77.1	1420.3	942.5	147.1	175.2	487.0	80.9

	Quintana Roo						San Luis Potosí					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	5.0	6.9	9.5	7.9	6.3		5.3	3.1	1.3	3.3	6.2	
Primary Sector	0.2	-1.9	7.8	0.9	23.2		1.5	8.1	5.7	14.4	15.2	
Secondary Sector	6.1	1.5	-2.0	-0.4	6.4		5.3	5.3	2.3	-3.6	-0.5	
Tertiary Sector	6.5	3.8	3.4	4.1	5.3		4.8	4.1	3.8	5.6	5.4	
Industrial Activity	-3.4	31.2	54.7	37.0	13.0	-9.5	6.0	1.6	-2.2	0.1	4.6	8.1
Manufacturing production	2.0	5.3	5.1	10.2	12.0	7.4	3.3	2.9	0.0	3.9	6.7	8.0
Construction	-13.8	66.4	111.9	61.1	34.3	-38.9	23.6	-0.1	-14.2	-8.1	0.8	28.2
Public works	4.4	70.1	111.1	50.0	11.4	-55.5	14.6	36.7	33.1	54.6	48.4	49.9
Private works	-42.8	54.9	117.0	101.0	137.3	60.2	48.6	-35.0	-63.3	-63.1	-58.7	-5.4
Retail sales	9.1	21.2	21.2	24.4	14.7	7.0	4.0	28.6	32.5	37.0	12.9	3.9
Wholesales	2.1	14.7	15.9	15.9	9.9	2.4	10.5	9.8	2.9	20.0	14.2	12.9
Total Employment (IMSS-registered workers)	7.7	10.1	10.7	10.5	9.9	9.8	4.4	4.6	4.3	4.3	5.7	7.5
Permanent	6.4	7.3	7.0	6.8	6.8	8.1	3.5	4.0	3.7	3.7	5.0	6.3
Temporary (urban)	11.8	18.5	21.8	21.9	18.8	14.8	9.1	8.0	7.5	8.3	9.9	13.6
Federalized resources (Branch 28)	6.3	4.9	10.0	1.4	21.4	2.8	3.2	12.2	11.5	7.4	39.5	13.2
Foreign Direct Investment (millions of USD)	360.9	252.9	32.1	53.4	118.8	48.5	1850.2	880.2	212.2	365.9	424.0	194.5

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Sinaloa						Sonora					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	5.6	3.7	1.5	2.6	1.2		1.4	5.0	6.3	5.0	6.7	
Primary Sector	12.6	-0.4	-10.1	0.3	-10.8		6.6	5.3	8.8	2.8	17.9	
Secondary Sector	1.4	7.2	9.1	6.5	6.8		-1.4	-6.0	-8.9	-12.8	-16.3	
Tertiary Sector	4.1	4.0	2.4	5.3	4.4		0.7	3.1	3.5	4.0	5.1	
Industrial Activity	5.4	4.7	1.6	-4.2	0.7	-7.7	1.3	7.2	8.3	7.7	1.0	2.9
Manufacturing production	6.6	2.1	5.2	-1.6	3.6	-2.2	3.0	1.6	7.0	-6.3	-6.8	1.0
Construction	4.2	23.9	2.4	-17.5	-38.4	-32.5	-16.2	17.1	17.7	38.2	31.4	34.9
Public works	22.4	15.8	18.0	1.0	-5.8	-0.2	-16.9	10.0	16.2	12.6	-0.3	12.4
Private works	-7.7	38.4	-16.6	-31.3	-59.5	-62.7	-9.8	31.8	20.5	92.2	118.9	78.5
Retail sales	5.8	26.0	25.1	37.7	16.5	1.6	-1.8	19.4	21.2	24.5	9.1	3.7
Wholesales	2.7	17.0	20.2	7.4	0.4	-1.2	-0.3	16.2	14.1	20.4	11.8	-1.9
Total Employment (IMSS-registered workers)	5.2	6.3	6.0	6.6	3.9	4.8	2.4	3.3	3.4	4.1	5.0	4.5
Permanent	5.0	5.5	5.3	6.0	4.7	4.9	2.5	3.0	3.1	3.4	4.0	4.3
Temporary (urban)	3.8	11.2	10.8	6.6	3.1	0.0	3.0	3.6	3.7	4.8	3.7	3.3
Federalized resources (Branch 28)	0.4	4.5	2.3	4.9	18.6	2.6	1.2	1.7	7.5	3.1	19.5	10.3
Foreign Direct Investment (millions of USD)	439.1	371.3	81.9	80.4	90.7	139.8	604.9	566.3	115.9	184.5	279.4	351.6

	Tabasco						Tamaulipas					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	-0.1	-5.2	-7.5	-10.8	-11.5		2.4	-0.8	-0.8	-4.2	0.4	
Primary Sector	2.7	3.6	2.2	10.1	18.0		-9.7	11.1	-16.1	7.0	3.2	
Secondary Sector	1.2	-4.0	-3.9	-9.9	-5.3		8.6	3.7	4.8	3.2	3.0	
Tertiary Sector	2.8	-3.8	-4.4	-7.0	-1.3		4.1	0.7	2.0	-0.9	3.8	
Industrial Activity	-1.2	-6.4	-8.6	-13.0	-14.9	-11.4	1.2	-4.4	-4.0	-10.1	-3.4	-2.2
Manufacturing production	-13.2	0.5	6.0	3.8	18.3	3.0	4.0	-1.5	-1.4	-1.8	4.8	8.2
Construction	-21.8	-42.5	-52.3	-43.6	-60.2	-26.0	18.3	0.0	-2.2	-38.9	-5.9	-14.6
Public works	-12.5	-31.7	-7.3	-21.8	-20.4	-18.4	84.8	-0.8	-21.4	-53.9	-18.6	-27.3
Private works	-27.3	-39.0	-68.9	-50.9	-74.7	-27.9	-19.3	5.4	23.9	-13.6	15.4	3.1
Retail sales	5.5	-1.7	-5.0	-6.9	-7.2	-9.6	2.4	10.4	12.8	10.7	5.4	0.7
Wholesales	6.6	5.3	1.5	5.8	-4.2	-4.5	3.0	4.3	6.7	10.4	27.2	2.3
Total Employment (IMSS-registered workers)	-0.6	-8.6	-10.2	-8.4	-6.9	-5.3	2.4	1.9	1.9	2.3	3.5	4.3
Permanent	-0.5	-5.2	-6.5	-6.0	-5.6	-5.1	2.9	2.5	2.6	2.9	3.8	4.2
Temporary (urban)	0.1	-26.4	-29.2	-21.7	-15.7	-6.6	-1.4	-3.1	-3.1	-1.8	1.3	5.6
Federalized resources (Branch 28)	4.1	3.4	-0.1	-4.1	-6.1	-13.3	4.4	6.3	9.8	5.4	18.8	-2.8
Foreign Direct Investment (millions of USD)	646.0	244.0	52.0	67.4	136.1	55.0	1067.5	1152.0	67.7	449.0	385.7	393.8

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

	Tlaxcala						Veracruz					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	3.8	2.3	1.9	2.8	3.4		0.5	-2.4	-3.4	-1.9	-1.4	
Primary Sector	4.5	-1.2	0.6	0.1	-5.6		3.3	0.4	-0.7	1.7	6.9	
Secondary Sector	-4.3	-5.6	-8.5	-1.0	-4.7		4.8	9.1	7.5	14.1	12.4	
Tertiary Sector	1.5	1.6	0.1	2.7	4.2		3.6	-0.4	-0.3	-2.7	-0.2	
Industrial Activity	8.7	3.8	4.6	3.7	1.4	4.8	-4.2	-6.1	-9.2	-1.4	-3.8	-7.0
Manufacturing production	4.0	6.2	7.1	5.1	5.1	5.1	-4.8	-11.1	-12.7	-6.2	-1.9	-8.4
Construction	172.5	-23.0	-33.3	-2.0	-50.4	-7.7	-21.3	-3.3	-21.5	-1.9	-27.2	-27.7
Public works	300.1	-23.1	-28.0	26.3	22.2	-8.4	-10.8	-35.3	-49.4	-45.0	-49.7	-2.8
Private works	114.2	-9.4	-35.7	-14.7	-79.8	-3.6	-22.9	17.1	-8.1	21.0	-7.7	-34.7
Retail sales	0.8	22.0	23.9	25.6	8.2	-2.3	6.3	13.2	19.4	5.1	-7.2	-4.8
Wholesales	6.1	20.8	11.6	15.6	24.1	7.1	13.1	10.1	5.5	8.4	7.4	-0.2
Total Employment (IMSS-registered workers)	5.3	5.9	5.5	6.8	9.7	9.1	-0.2	-2.4	-2.5	-2.7	-1.5	-0.3
Permanent	3.5	4.7	4.9	6.5	10.0	10.1	0.3	0.2	0.2	-0.5	-0.5	-0.3
Temporary (urban)	9.5	10.2	11.5	7.9	8.7	5.2	-3.2	-15.3	-16.3	-14.6	-8.6	-3.3
Federalized resources (Branch 28)	1.0	6.9	5.7	7.3	17.2	3.3	-2.5	4.9	5.6	2.5	20.4	10.9
Foreign Direct Investment (millions of USD)	123.2	207.2	-1.5	128.8	53.5	22.8	1627.6	1056.7	201.1	176.9	398.0	-2.6

	Yucatán						Zacatecas					
	2015	2016	3Q16	4Q16	1Q17	2Q17	2015	2016	3Q16	4Q16	1Q17	2Q17
Economic Activity (QIEAS) Total**	4.0	3.9	2.9	5.5	6.1		3.0	-0.6	0.0	3.9	2.4	
Primary Sector	-0.7	1.6	7.1	2.9	9.0		-1.5	17.5	18.9	25.4	11.7	
Secondary Sector	3.6	-9.1	-12.4	-1.7	-3.0		1.7	4.4	4.4	1.3	6.8	
Tertiary Sector	3.8	1.3	0.4	1.2	3.0		3.2	3.1	6.2	2.8	6.0	
Industrial Activity	4.8	9.3	7.3	14.1	10.3	8.3	3.7	-8.9	-12.6	-1.5	-3.3	11.8
Manufacturing production	12.4	11.7	7.3	13.4	13.2	10.1	4.2	-0.7	-4.7	-3.5	-8.5	-1.7
Construction	-15.6	20.7	29.6	11.6	16.3	-23.6	-17.6	70.2	48.6	92.6	58.5	0.3
Public works	-0.7	18.9	35.9	6.4	26.7	-10.7	1.3	135.0	65.3	196.8	118.3	8.3
Private works	-37.5	30.9	19.4	32.3	-15.1	-46.9	-32.6	-7.7	17.6	-30.6	-37.1	-20.4
Retail sales	-0.5	13.8	13.2	11.3	-2.0	-1.8	7.5	21.8	25.5	27.8	9.7	2.3
Wholesales	15.4	6.5	4.0	5.8	7.0	-8.3	0.6	4.9	1.7	7.2	20.1	6.3
Total Employment (IMSS-registered workers)	4.0	4.4	4.6	4.7	4.6	4.1	4.8	3.6	3.3	3.2	2.7	2.6
Permanent	3.4	3.8	4.0	3.8	4.0	3.8	5.5	4.3	4.0	3.6	3.4	3.1
Temporary (urban)	9.5	10.5	11.5	13.5	11.0	6.4	2.0	-1.6	-2.2	-0.9	-1.1	0.0
Federalized resources (Branch 28)	4.8	4.7	6.6	5.7	21.6	2.8	4.6	13.8	8.8	3.0	18.5	-6.3
Foreign Direct Investment (millions of USD)	205.6	102.4	13.0	16.0	76.1	16.2	132.5	532.9	100.2	-50.2	140.5	-7.3

* All indicators, except Foreign Direct Investment, are real annual percentage changes
** Quarterly Indicator of Economic Activity Statewide (Indicador Trimestral de la Actividad Económica Estatal)
Source: Inegi, STPS, Sectur, SHCP and SE

5. Special topics included in previous issues

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
The aeronautics industry in Mexico
The future challenge will be to integrate petrochemicals with the domestic oil and gas industry

Second Half 2015
The automotive industry in Mexico is the key driving force behind the economy
The resilience of the automotive industry worldwide
Mexico is gaining a firm foothold in the US automotive market
Factors to consider for reducing costs and electricity rates
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

June 2013
Household electrical appliances industry: challenges & opportunities to improve its competitive position
The electronics industry in Mexico and the challenge of increasing productivity
Key sectors to an effective energy reform

November 2012
Toward a better management of Mexican subnational public debt
Energy in Mexico: facing innumerable challenges and opportunities

May 2012
Analysis of the Competitiveness of Mexican Exports in the U.S.
Severe drought in Mexico: a marginal impact on total GDP but important in micro regions

Available in www.bbvaresearch.com in Spanish and English

DISCLAIMER

This document and the information, opinions, estimates and recommendations expressed herein, have been prepared by Banco Bilbao Vizcaya Argentaria, S.A. (hereinafter called "BBVA") to provide its customers with general information regarding the date of issue of the report and are subject to changes without prior notice. BBVA is not liable for giving notice of such changes or for updating the contents hereof.

This document and its contents do not constitute an offer, invitation or solicitation to purchase or subscribe to any securities or other instruments, or to undertake or divest investments. Neither shall this document nor its contents form the basis of any contract, commitment or decision of any kind.

Investors who have access to this document should be aware that the securities, instruments or investments to which it refers may not be appropriate for them due to their specific investment goals, financial positions or risk profiles, as these have not been taken into account to prepare this report. Therefore, investors should make their own investment decisions considering the said circumstances and obtaining such specialized advice as may be necessary. The contents of this document is based upon information available to the public that has been obtained from sources considered to be reliable. However, such information has not been independently verified by BBVA and therefore no warranty, either express or implicit, is given regarding its accuracy, integrity or correctness. BBVA accepts no liability of any type for any direct or indirect losses arising from the use of the document or its contents. Investors should note that the past performance of securities or instruments or the historical results of investments do not guarantee future performance.

The market prices of securities or instruments or the results of investments could fluctuate against the interests of investors. Investors should be aware that they could even face a loss of their investment. Transactions in futures, options and securities or high-yield securities can involve high risks and are not appropriate for every investor. Indeed, in the case of some investments, the potential losses may exceed the amount of initial investment and, in such circumstances, investors may be required to pay more money to support those losses. Thus, before undertaking any transaction with these instruments, investors should be aware of their operation, as well as the rights, liabilities and risks implied by the same and the underlying stocks. Investors should also be aware that secondary markets for the said instruments may be limited or even not exist.

BBVA or any of its affiliates, as well as their respective executives and employees, may have a position in any of the securities or instruments referred to, directly or indirectly, in this document, or in any other related thereto; they may trade for their own account or for third-party account in those securities, provide consulting or other services to the issuer of the aforementioned securities or instruments or to companies related thereto or to their shareholders, executives or employees, or may have interests or perform transactions in those securities or instruments or related investments before or after the publication of this report, to the extent permitted by the applicable law.

BBVA or any of its affiliates´ salespeople, traders, and other professionals may provide oral or written market commentary or trading strategies to its clients that reflect opinions that are contrary to the opinions expressed herein. Furthermore, BBVA or any of its affiliates' proprietary trading and investing businesses may make investment decisions that are inconsistent with the recommendations expressed herein. No part of this document may be (i) copied, photocopied or duplicated by any other form or means (ii) redistributed or (iii) quoted, without the prior written consent of BBVA. No part of this report may be copied, conveyed, distributed or furnished to any person or entity in any country (or persons or entities in the same) in which its distribution is prohibited by law. Failure to comply with these restrictions may breach the laws of the relevant jurisdiction.

This document is provided in the United Kingdom solely to those persons to whom it may be addressed according to the Financial Services and Markets Act 2000 (Financial Promotion) Order 2001 and it is not to be directly or indirectly delivered to or distributed among any other type of persons or entities. In particular, this document is only aimed at and can be delivered to the following persons or entities (i) those outside the United Kingdom (ii) those with expertise regarding investments as mentioned under Section 19(5) of Order 2001, (iii) high net worth entities and any other person or entity under Section 49(1) of Order 2001 to whom the contents hereof can be legally revealed.

The remuneration system concerning the analyst/s author/s of this report is based on multiple criteria, including the revenues obtained by BBVA and, indirectly, the results of BBVA Group in the fiscal year, which, in turn, include the results generated by the investment banking business; nevertheless, they do not receive any remuneration based on revenues from any specific transaction in investment banking.

BBVA Bancomer and the rest of BBVA Group who are not members of FINRA (Financial Industry Regulatory Authority), are not subject to the rules of disclosure for these members.

"BBVA Bancomer, BBVA and its subsidiaries, among which is BBVA Global Markets Research, are subject to the Corporate Policy Group in the field of BBVA Securities Markets. In each jurisdiction in which BBVA is active in the Securities Markets, the policy is complemented by an Internal Code of Conduct which complements the policy and guidelines in conjunction with other established guidelines to prevent and avoid conflicts of interest with respect to recommendations issued by analysts among which is the separation of areas. Corporate Policy is available at: www.bbva.com / Corporate Governance / Conduct in Securities Markets".

BBVA | Research

This report has been produced by:

Editors
Carlos Serrano
carlos.serranoh@bbva.com

Samuel Vázquez
samuel.vazquez@bbva.com

Alma Martínez
ag.martinez2@bbva.com

Gerónimo Ugarte
franciscogeronimo.ugarte@bbva.com

BBVA Research

Group Chief Economist
Jorge Sicilia

Macroeconomic Analysis
Rafael Doménech
r.domenech@bbva.com

Global Macroeconomic Scenarios
Miguel Jiménez
mjimenezg@bbva.com

Global Financial Markets
Sonsoles Castillo
s.castillo@bbva.com

Global Modelling and Long Term Analysis
Julián Cubero
juan.cubero@bbva.com

Innovation & Processes
Oscar de las Peñas
oscar.delaspenas@bbva.com

Financial Systems and Regulation
Santiago Fernández de Lis
sfernandezdelis@bbva.com

Countries Coordination
Olga Cerqueira
olga.gouveia@bbva.com

Digital Regulation
Álvaro Martín
alvaro.martin@bbva.hk

Regulation
María Abascal
maria.abascal@bbva.com

Financial Systems
Ana Rubio
arubiog@bbva.com

Financial Inclusion
David Tuesta
david.tuesta@bbva.com

Spain and Portugal
Miguel Cardoso
miguel.cardoso@bbva.com

United States of America
Nathaniel Karp
Nathaniel.Karp@bbva.com

Mexico
Carlos Serrano
carlos.serranoh@bbva.com

Turkey, China & Geopolitics
Álvaro Ortiz
alvaro.ortiz@bbva.com

Turkey
Álvaro Ortiz
alvaro.ortiz@bbva.com

Asia
Le Xia
le.xia@bbva.com

South America
Juan Manuel Ruiz
juan.ruiz@bbva.com

Argentina
Gloria Sorensen
gsorensen@bbva.com

Chile
Jorge Selaive
jselaive@bbva.com

Colombia
Juana Téllez
juana.tellez@bbva.com

Peru
Hugo Perea
hperea@bbva.com

Venezuela
Julio Pineda
juliocesar.pineda@bbva.com

BBVA Research Mexico
Paseo de la Reforma 510
Colonia Juárez
C.P. 06600 México D.F.
Publications:
e-mail: bbvaresearch_mexico@bbva.com

These and other BBVA Research publications are available in English and in Spanish at:
www.bbvaresearch.com

Other publications: