BANCO DE MÉXICO

Compilation of Quarterly Reports Released in 2017

PRESENTATION

This document is a compilation of four Quarterly Reports of 2017, released in line with Article 51 of Banco de México's Law and in accordance with the calendar published in advanced by this Central Institute.

These Quarterly Reports address inflation, the evolution of economic activity and the performance of other economic indicators of Mexico over the referred period. Likewise, the monetary policy conduction in the reference year, as well as other activities of Banco de México in each respective period are discussed.

In addition, this document includes a statistical appendix with relevant annual data of the Mexican economy and an annex reporting the relation between Mexico and some international bodies and forums.

We trust that this compilation will provide the public with an easier access to the relative data of the reference year, by bringing this information together in a single document.

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Section I: Quarterly Report January - March 2017

1.   Introduction

During the first months of 2017, the Mexican economy continued facing diverse shocks, which generated significant and highly persistent, albeit transitory, impacts on inflation. In fact, since July 2016 an upward trend of inflation has prevailed for over 10 consecutive months, which resulted from increments in both core and non-core components. Thus, headline inflation attained levels close to 5 percent in the first quarter of 2017, and accelerated to 6.17 percent in the first fortnight of May. The effects of the accumulated depreciation of the national currency since the end of 2014, and the consequences of higher energy prices (in particular gasoline and LP gas prices), which were registered since the onset of 2017, are noteworthy. Furthermore, the raise in the minimum wage at the beginning of the year also contributed to the increment in annual headline inflation. The first of these shocks has considerably affected the trajectory of core inflation, as revealed through a gradual adjustment in relative prices of merchandise with respect to those of services. Meanwhile, higher energy prices affected non-core inflation directly and its core component indirectly by raising production costs of different goods and some services, mainly food-related services, that use such energy products as inputs. More recently, in April annual inflation was further affected by increments in some agricultural products' prices and in government approved fares, especially in passenger transport services.

It should be noted that despite the significant impact on inflation and its short-term expectations produced by the simultaneity and the magnitude of these shocks, the monetary policy, implemented by Banco de México in a timely manner, contributed to maintain medium- and long-term inflation expectations relatively stable; as a result, so far no second round effects on the price formation process in the economy have been observed. Thus, to prevent contamination to the price formation process in the economy, to anchor inflation expectations and to reinforce the contribution of monetary policy to the inflation's convergence to its target, in the period covered by this Report, Banco de México's Board of Governors raised the target for the Overnight Interbank Interest Rate by 100 basis points, to a level of 6.75 percent. These decisions mainly considered the inflation trend in a context of the afore mentioned transitory shocks in relative prices, the expectation of no aggregate demand-related pressures on inflation and increments in the monetary policy rate since 2015, along with the 25 basis-point increase in the target range for the U.S. Federal Reserve reference rate in its March meeting.

This occurred in a context in which the world economy kept recovering in early 2017, reflecting an upturn in investment, industrial production and global trade. However, the expected outlook of a moderate global growth in 2017 and 2018 is still subject to downward risks including the high uncertainty regarding the course of advanced countries' economic policies, vulnerabilities in the Chinese economy that seem to have heightened, the possible consequences of the U.K. exit from the European Union and increased geopolitical risks across various regions of the world. In particular, the characteristics of the fiscal and trade reforms to be adopted in the U.S., along with the rate of its monetary policy normalization, will continue bringing considerable uncertainty to the world economic outlook over the next

quarters. Inflation kept growing across the main advanced economies during the first quarter of the year, among other factors, reflecting increments in energy prices during most of 2016. Nevertheless, in most countries comprising this group the said indicator remains below the respective central banks' targets and inflation expectations still persist at low levels.

Thus, the monetary policy stance of the main central banks in advanced economies remained accommodative, despite the persisting divergences across the countries, which reflect differences in their relative positions in the economic cycle. In particular, after increasing the federal funds' target range in March, the Federal Reserve left it unchanged in its May meeting. However, it is still expected that the monetary stimulus withdrawal in the U.S. will proceed at a gradual pace, and that this central bank will raise this range again in June. In addition, the expectation that the Federal Reserve will start to take actions aimed at reducing the size of its balance sheet, which would speed up the process of the monetary policy normalization, has been strengthening. In the meantime, the European Central Bank and the Bank of Japan maintained their monetary stances unchanged, emphasizing the need to keep them accommodative, although no further stimuli are expected in light of the decrease of deflationary risks.

The economic activity in emerging economies recovered during the first quarter, even though this recovery began from low levels. The recent boost in world trade, which originated from a greater activity in advanced economies, as well as a certain rebound in international commodity prices during 2016 contributed to this recovery. However, vulnerabilities in the Chinese economy and the recent political crisis in Brazil could impact the growth of these economies over the next quarters.

Despite the persisting uncertainty regarding economic policy and growing geopolitical risks, volatility levels declined dramatically in international financial markets, and asset prices went up with respect to the last quarter of 2016. The markets' positive performance seems to respond more to the outlook of sustained growth, backed by favorable credit conditions, the recovery of business profits, stronger demand and global trade, than to high levels of political and economic uncertainty. However, despite low volatility indicators, markets do not rule out extreme or tail risks, observed in the increment in risk hedging costs. Indeed, episodes of major instability in financial markets still cannot be ruled out, in light of the persisting uncertainty over the possible scenario that is still supporting favorable expectations, as well as the probability of the materialization of the above mentioned extreme risks faced by world economy.

Domestic financial markets were strongly affected at the beginning of the year, especially by uncertainty over the possible implementation of trade and migration policies by the incoming U.S. administration, which could negatively impact the Mexican economy. Thus, the Mexican peso observed a significant depreciation and high volatility, while interest rates for all terms increased. However, given the monetary policy actions put in place by Banco de México, the measures set forth by the Foreign Exchange Commission and some constructive comments by the members of the U.S. government relative to the future bilateral U.S. – Mexico relation, the afore mentioned depreciation of the national currency reverted as of the second half of January. In particular, the exchange rate appreciated

considerably, to levels comparable to those registered before the elections in the U.S. concluded, and long-term interest rates decreased.

Regarding the domestic economy, in the first quarter of 2017 productive activity expanded at a rate similar to that in the previous one. This was the result mainly of the persistent growth of private consumption and of external demand. In contrast, weakness of investment became more pronounced, as the negative trend in public investment has been recently accompanied by a slowdown in the private component. In this context, no significant aggregate demand-related pressures on prices have been observed yet, although the labor market slack has been reducing, which, in turn, has been reflected in an upward trajectory in unit labor costs, although starting from low levels.

Economic growth in the first quarter of 2017 was slightly greater than the one anticipated in the previous Report. As a consequence, a greater expansion of GDP is expected for 2017 as a whole, so that the forecast interval for that year is adjusted from one between 1.3 to 2.3 percent to one between 1.5 to 2.5 percent. Despite the relatively favorable performance of the economic activity in early 2017, the most recent data point to a certain slowdown of the productive activity over the next quarters, which seems to be partially linked, as indicated in the previous Report, to the effects of relative uncertainty over the future Mexico – U.S. economic relationship over the decisions on investment and consumption, even though they have slightly attenuated. For 2018, the forecast interval of the GDP growth is not modified with respect to the last Report, remaining at 1.7 to 2.7 percent, so a greater growth rate of the economy is still estimated with respect to 2017, reflecting the expectation of a greater dynamism of the U.S. industrial production in that year, as well as more evident positive effects in 2018 generated by the structural reforms on investment conditions.

It is anticipated that over the next months annual headline inflation will remain temporarily affected by higher auto transport tariffs and by higher prices of some agricultural products, as well as by adjustments caused by the changes in the relative prices of merchandise with respect to services, as a result of the accumulated depreciation of the real exchange rate, as well as the transitory impact of higher energy prices and the raise in the minimum wage in January 2017. Hence, annual headline inflation is estimated to exceed the upper limit of the variability interval of Banco de México during 2017, although over the last months of 2017 and during 2018 it is anticipated to resume its tendency of convergence to the 3 percent target and to reach this level at the end of the forecast horizon. In line with this estimation, in 2017 annual core inflation will also persist above the referred interval, but significantly below the annual headline inflation trajectory, and at the end of that year and in early 2018 it will resume its convergence trend towards this Central Bank's inflation target. These trajectories will be the result of a number of factors, such as the fading of the above mentioned shocks, the reversal of the exchange rate that has been registered in recent months, the expected widening of the negative output gap, and significant adjustments in the monetary policy that have been put into place since December 2015, as well as those that may be required in the future, all of which will continue affecting the inflation performance over the following quarters.

It should be noted that as uncertainty regarding the economic policy to be implemented in the U.S. and its effects on the Mexico - U.S. bilateral relationship still persists, new volatility episodes cannot be ruled out. In this context, this Central Institute will contribute to the robustness of Mexico's macroeconomic framework by procuring low and stable inflation. Fulfilling this mandate is the best manner in which Banco de México can contribute to growth and to the recovery of real wages of the economy. The macroeconomic stability will be also contributed to by fiscal consolidation measures that have been implemented and that are expected to be put into effect over the next years. In addition, on May 22, 2017, the Executive Board of the International Monetary Fund ratified the availability of the Flexible Credit Line equivalent to USD 86 billion.[1] This confirms the fact that Mexico continues complying with all qualifications required to have access to the contingent resources and generates strong incentives to continue maintaining the soundness of the economic fundamentals, while it is required to retain the access to this credit line.

In the future, the Board of Governors will closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially the possible pass-through of exchange rate adjustments and higher energy prices onto the rest of prices. Likewise, it will be watchful of the performance of the monetary position of Mexico relative to the U.S., and the evolution of the output gap. This will be done in order to continue taking the necessary measures to attain the efficient convergence of inflation to its 3.0 percent target.

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[1] This is an amount equivalent to SDR 62.4 billion, at the exchange rate of May 22, 2017.

2.   Recent Evolution of Inflation

2.1.   Inflation

Annual headline inflation keeps registering an upward trend, as a reflection of an array of shocks that have been affecting both its core and non-core components. In the former case, the depreciation of the exchange rate since late 2014 is still manifested through a gradual adjustment in the relative prices of merchandise with respect to services. At the same time, the increment in energy prices (in particular gasoline and LP gas prices), which were registered since the onset of 2017, and the sustained increase in industrial and commercial electricity tariffs, indirectly affected the prices of some items of core inflation, by causing increments in the production costs of different goods and some services, mainly food-related ones. On the other hand, non-core inflation maintained its upward trend, reflecting both the referred higher energy prices and the recent increments in the prices of some agricultural products and in government approved fares, such as the case of auto transport. Meanwhile, the increment in the minimum wage in early 2017 also moderately contributed to the increase in inflation this year so far. Despite the simultaneity and the magnitude of the said shocks, no second round effects on the price formation process of the economy have been perceived so far, and long-term inflation expectations remain stable.

As a reflection of the above environment, annual headline inflation increased from an average of 3.24 percent in the fourth quarter of 2016 to 4.98 percent in the first one of 2017, marking 6.17 percent in the first fortnight of May. In particular, average annual core inflation changed from 3.28 to 4.19 percent between the referred quarters, while in the first fortnight of May it registered 4.75 percent. On the other hand, the average annual change of the non-core component went up from 3.14 to 7.38 percent between the last quarter of 2016 and the first one of 2017, marking 10.71 percent in the first fortnight of May (Table 1 and Chart 1).

Table 1
Consumer Price Index, Main Components and Trimmed Mean Indicators
Annual change in percent

	2015	2016				2017	
	IV	I	II	III	IV	I	1f May
CPI	**2.27**	**2.69**	**2.56**	**2.78**	**3.24**	**4.98**	**6.17**
Core	**2.40**	**2.69**	**2.91**	**3.00**	**3.28**	**4.19**	**4.75**
Merchandise	**2.78**	**3.04**	**3.51**	**3.79**	**3.98**	**5.33**	**6.24**
Food, beverages and tobacco	2.55	2.88	3.69	3.89	4.26	5.93	6.73
Non-food merchandise	2.98	3.17	3.36	3.71	3.75	4.83	5.82
Services	**2.09**	**2.40**	**2.41**	**2.34**	**2.68**	**3.23**	**3.49**
Housing	2.00	2.11	2.21	2.32	2.40	2.52	2.53
Education (tuitions)	4.28	4.21	4.13	4.17	4.26	4.37	4.42
Other services	1.52	2.15	2.09	1.80	2.50	3.62	4.21
Non-core	**1.87**	**2.71**	**1.46**	**2.10**	**3.14**	**7.38**	**10.71**
Agriculture	**2.76**	**6.51**	**4.48**	**3.81**	**4.98**	**-0.20**	**6.56**
Fruit and vegetables	6.33	22.45	13.30	8.58	8.32	-6.88	10.97
Livestock	0.84	-1.60	-0.01	1.26	3.09	4.02	4.06
Energy and government approved fares	**1.33**	**0.39**	**-0.45**	**1.01**	**2.00**	**12.28**	**13.50**
Energy	0.52	-1.10	-1.49	-0.03	1.75	16.85	16.23
Government approved fares	2.86	3.23	1.41	2.83	2.48	3.91	8.87
Trimmed Mean Indicator [1]							
CPI	2.45	2.46	2.62	2.86	3.15	4.17	4.69
Core	2.76	2.86	3.05	3.20	3.29	4.02	4.45

1/ Prepared by Banco de México with data from INEGI.
Source: Banco de México and INEGI.

Chart 1
Consumer Price Index
Annual change in percent
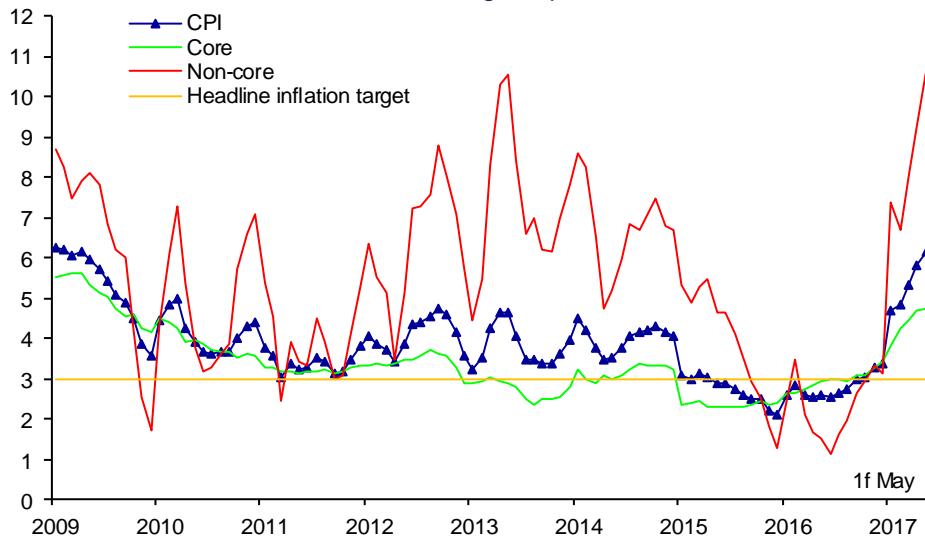
Source: Banco de México and INEGI.

To analyze both the headline and core inflation trends, and the performance of inflation at the margin, the following indicators are shown. Firstly, the proportion of the CPI basket is calculated, exhibiting annual price changes within certain intervals. In this way, generic items comprising the basket of both headline and core index are grouped into three categories according to the annual change in their prices: i) items with an annual change below 2 percent; ii) between 2 and 4 percent; and iii) over 4 percent. In the same vein, the percentage of the said baskets is

presented in additional categories: the one with annual price changes lower or equal to 3 percent, and the one with annual price changes over 3 percent (Chart 2).

This analysis illustrates that the percentage of both headline and core baskets with price increments below 4 percent has been declining (the blue and green areas, Chart 2a and Chart 2b). Specifically, in the fourth quarter of 2016, the share of the CPI basket of goods and services of the headline inflation with price increments lower than 4 percent was on average 61 percent, while in the first quarter of 2017 this share was 45 percent and in the first fortnight of May it was 37 percent. As regards the basket of the core index, these shares were 60, 47 and 41 percent, respectively, in the same time frames. Likewise, the share of the headline index basket with price changes lower or equal to 3 percent (the area below the yellow line) was on average 46 percent in the fourth quarter of 2016, 35 percent in the first one of 2017 and 27 percent in the first fortnight of May. In the case of the core index, the respective shares were 45, 37 and 33 percent.

Chart 2
Percentage of CPI Basket according to Intervals of Annual Increments
Percent
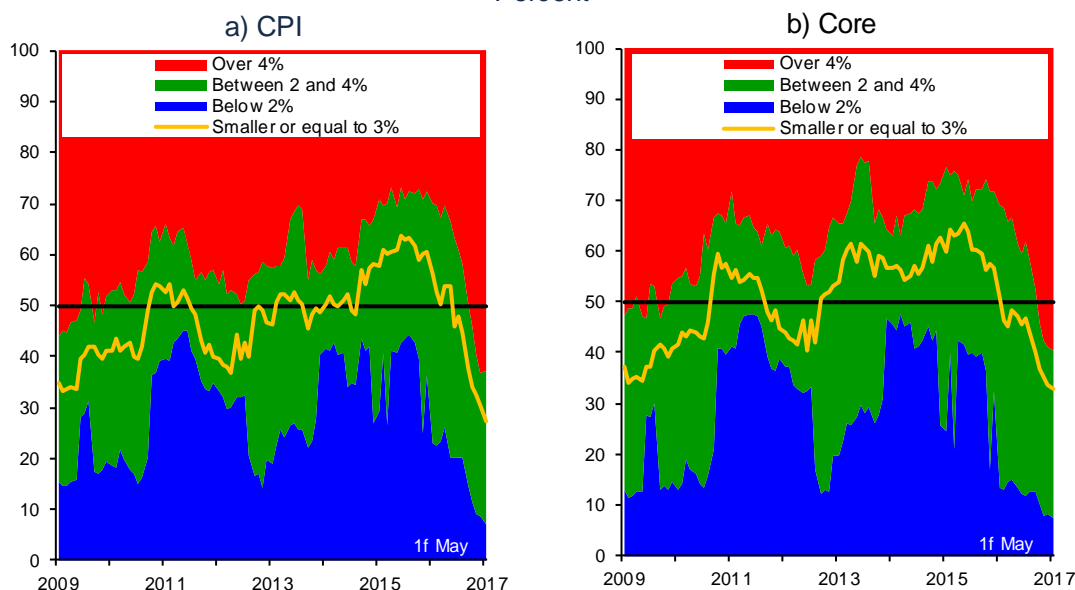
Source: Banco de México and INEGI.

Secondly, the medium-term trend of headline inflation is shown, represented by the Trimmed Mean Indicator, which has increased from 3.15 percent in the fourth quarter of 2016 to 4.17 percent in the first one of 2017, and which marked 4.69 percent in the first fortnight of May. Likewise, the referred indicator for core inflation went up, exhibiting 3.29 percent in the last quarter of 2016, 4.02 percent in the first quarter of 2017 and 4.45 percent in the first fortnight of May. Even though the figures of the Trimmed Mean Indicator for headline and core inflations are below the observed data, their upward trend and the high levels of both indicators point to a growing trajectory of most generic items' prices comprising it (Chart 3 and Table 1).

Thirdly, the evolution of annualized monthly (seasonally adjusted) headline and core inflation, and their trends are presented (Chart 4a and Chart 4b). As can be appreciated, the trend of both headline and core inflation is upward, reflecting the

shocks these indicators have been exposed to, although both of them somewhat declined at the margin. The components of core inflation (merchandise and services) have performed similarly (Chart 4c and Chart 4d).

Chart 3
Price Indices and Trimmed Mean Indicators [1]
Annual change in percent

1/ The Trimmed Mean Indicator excludes the contribution of extreme variations in the prices of some generic items from the inflation of a price index. To eliminate the effect of these changes, the following is done: i) monthly seasonally adjusted changes of the generic items of the price index are arranged from the smallest to the largest value; ii) generic items with the biggest and the smallest variation are excluded, considering in each distribution tail up to 10 percent of the price index basket, respectively; and iii) using the remaining generic items, which by construction lie closer to the center of the distribution, the Trimmed Mean Indicator is calculated.
Source: Prepared by Banco de México with own data and data from INEGI.

Chart 4
Annualized Seasonally Adjusted Monthly Change and Trend
Percent
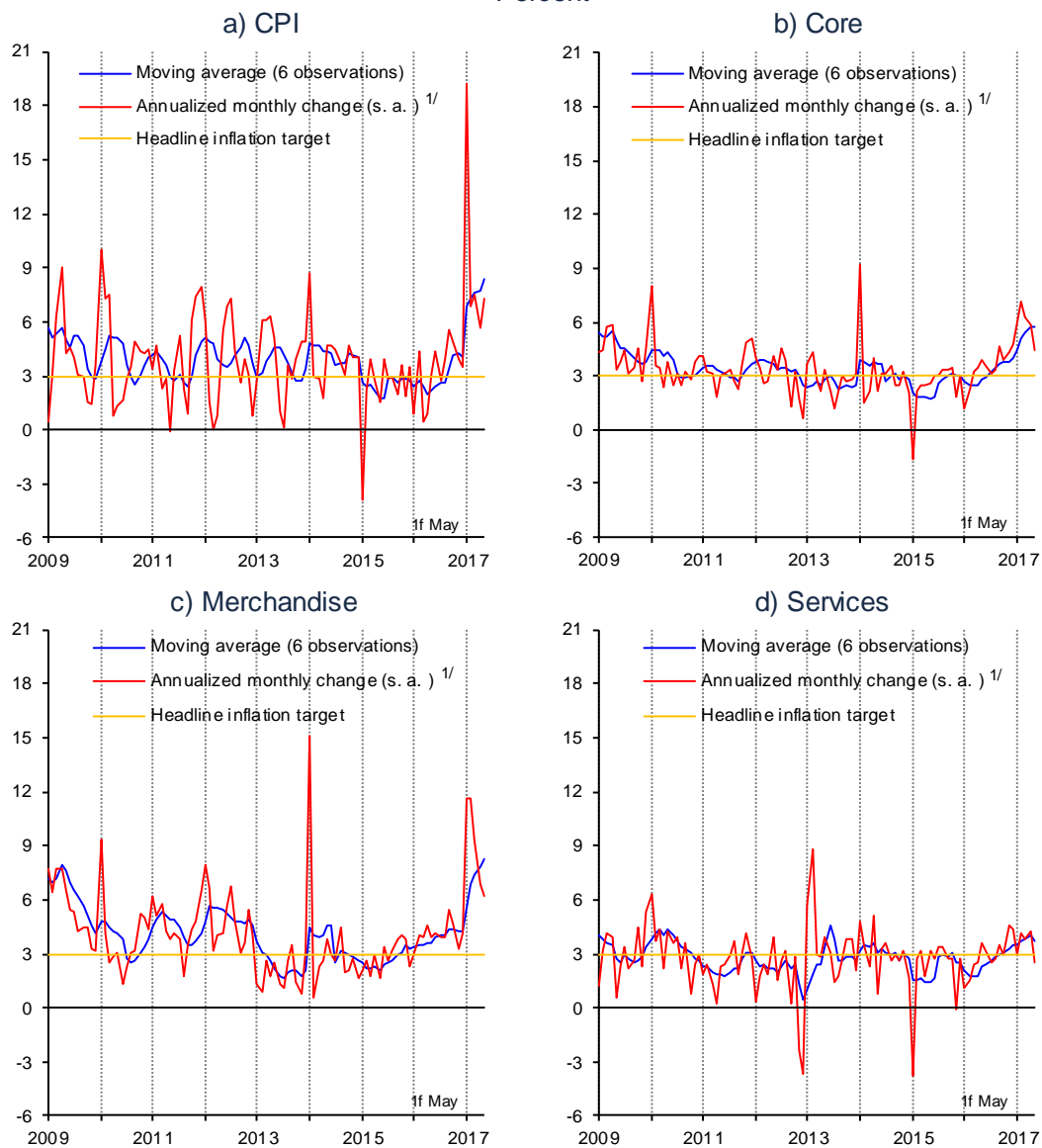
a) CPI

b) Core

c) Merchandise

d) Services

s. a. / Seasonally adjusted data.
1/ For the last observation, the annualized biweekly change is used.
Source: Seasonal adjustment prepared by Banco de México with own data and data from INEGI.

Within the performance of core inflation, a marked acceleration of annual growth rates of the merchandise subindex stands out. As a result of this trajectory, the contribution of the change in merchandise prices to annual headline inflation increased from 1.40 to 2.19 percentage points between December 2016 and the first fortnight of May 2017. Meanwhile, the impact of the subindex of services prices on annual headline inflation also increased, albeit to a lower degree, shifting from 1.19 to 1.44 percentage points between the referred periods (Chart 5). In particular:
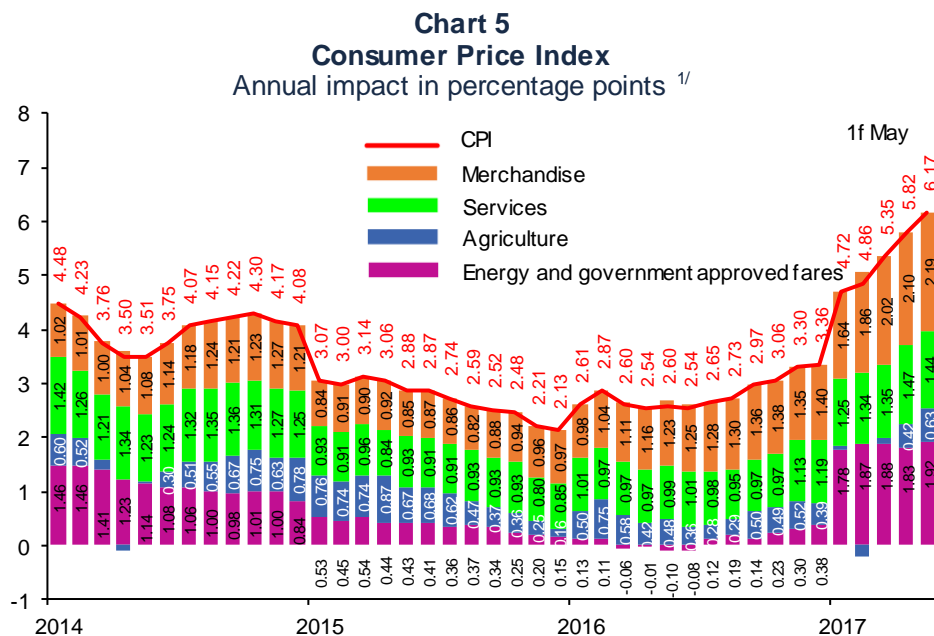
Chart 5
Consumer Price Index
Annual impact in percentage points [1]

CPI
Merchandise
Services
Agriculture
Energy and government approved fares

1f May

(Chart: stacked bar chart with CPI line, values by quarter from 2014 to 2017, y-axis from -1 to 8)

CPI line values: 4.48, 4.23, 3.76, 3.50, 3.51, 3.75, 4.07, 4.15, 4.22, 4.30, 4.17, 4.08, 3.07, 3.00, 3.14, 3.06, 2.88, 2.87, 2.74, 2.59, 2.52, 2.48, 2.21, 2.13, 2.61, 2.87, 2.60, 2.54, 2.60, 2.54, 2.65, 2.73, 2.97, 3.06, 3.30, 3.36, 4.72, 4.86, 5.35, 5.82, 6.17

i.   In recent months, growth of the merchandise price subindex has been reflecting more evidently the effects of the accumulated depreciation of the national currency, as the pass-through apparently accelerated in the aftermath of the U.S. elections. This may have derived from the fact that, so far, the depreciation of the real exchange rate was perceived as a more permanent phenomenon and that other shocks that affected inflation converged. Thus, this subindex shifted from an average annual change rate of 3.98 percent in the last quarter of 2016 to 5.33 percent in the first one of 2017, locating at 6.24 percent in the first fortnight of May. Even though both food and non-food merchandise prices observed increments in their annual changes, it was the former group that accelerated more, their annual growth rate shifting from 4.26 to 5.93 percent between the said quarters, attaining 6.73 percent in the first fortnight of May. Average annual change rates of non-food merchandise were, on the other hand, 3.75, 4.83 and 5.82 percent over the same time frames (Chart 6a and Chart 6b).

ii.   The subindex of services' prices also exhibited increments in the annual growth rates, even though they have remained relatively more moderate. This largely derived from lower reductions in mobile phone tariffs as compared to last year, as well as for price increases in food services, which reflected the price increments in food and energy products, especially LP gas. In this way, the average annual change of the services price' subindices shifted from 2.68 to 3.23 percent between the fourth quarter of 2016 and the first one of 2017, registering 3.49 percent in the first fortnight of May (Chart 6a). In particular, the item of services other than housing and education presented annual average changes of 2.50 and 3.62 percent in the indicated quarters, marking 4.21 percent in the

first fortnight of May. It is noteworthy that in the data on the first fortnight of May tourism services' prices slightly adjusted downwards, with respect to the high levels exhibited in April, which were affected by the calendar effect of the Holy Week.

Chart 6
Core Price Index
Annual change in percent

a) Merchandise and Services

b) Merchandise

Source: Banco de México and INEGI.
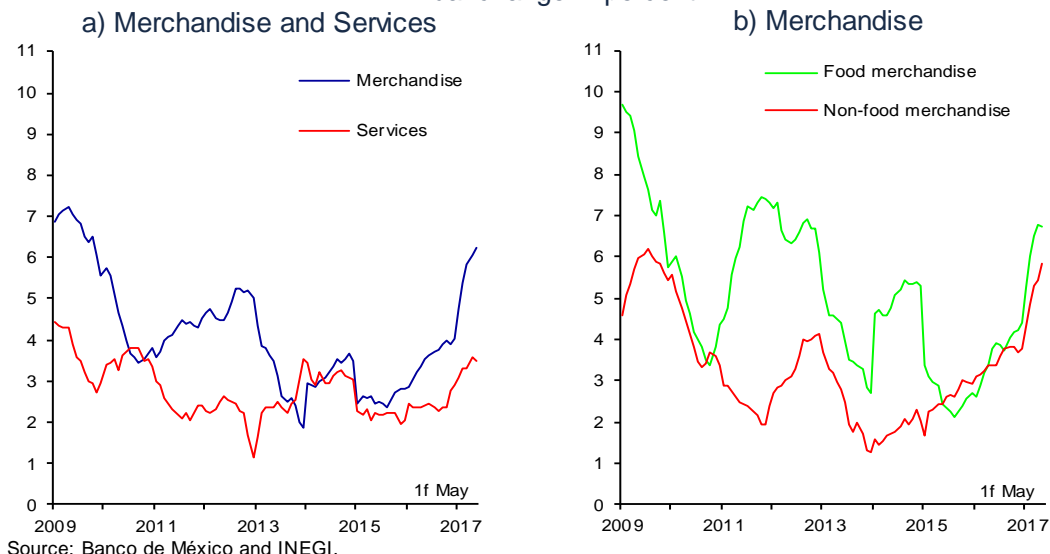
On the other hand, as stated above, non-core inflation remains high and has continued to go up in the reference period. This reflects the effects of energy price increments, with an emphasis on gasoline and LP gas prices, which occurred at the beginning of the year and were complemented in April and May by a rebound in agricultural goods' prices, as well as increments in some passenger transport services (Chart 5 and Table 1).

i.   Indeed, even though the average annual change of the agricultural price subindex decreased from 4.98 to -0.20 percent between the fourth quarter of 2016 and the first one of 2017, in the first fortnight of May it rebounded to 6.56 percent, largely due to the increase in the prices of some fruit and vegetables, such as tomato, onion and avocado.

ii.   Between the last quarter of 2016 and the first one of 2017, the average annual change of the price subindex of energy products and government approved fares spiked from 2.00 to 12.28 percent and marked 13.50 percent in the first fortnight of May, through which its contribution to inflation increased as well (Chart 5).

With respect to the above, it is noteworthy that:

•   Between January 1 and February 17, 2017, maximum gasoline prices were the ones that had been determined on December 27, 2016 by the Ministry of Finance across 90 regions of the country, based on a formula in which the international prices of this fuel, converted to Mexican pesos, continued to directly enter the calculation of the said maximum prices, excluding the upper and the lower limits between which the price was allowed to fluctuate

during 2016. As of February 18, 2017, the maximum gasoline prices started to be determined on a daily basis in line with a new formula, which, although still considering the prices of international references converted to the Mexican pesos, seeks to moderate the impact of excessive fluctuations in these references. In line with the timeline announced on December 20, 2016 by the Energy Regulating Commission (CRE) regarding the liberalization of gasoline prices in Mexico, gasoline prices in the states of Baja California and Sonora were liberalized on March 30, 2017, while in the rest of Mexico prices set by the Ministry of Finance will remain effective, until their liberalization is stipulated in line with the said timeline. The direct impact of gasoline price adjustments on inflation has been considerable this year. In particular, the monthly change of gasoline prices in January 2017 was 17.29 percent. Moreover, these increments strongly affected annual inflation. Thus, out of annual inflations of 4.72 percent in January; of 4.86 percent in February, of 5.35 percent in March; of 5.82 percent in April, and of 6.17 percent in the first fortnight of May, gasoline prices directly contributed with 1.35, 1.36, 1.30, 1.23 and 1.20 percentage points, respectively (Chart 7).

- As regards LP gas, starting from January 1, 2017, its prices were liberalized, which generated a raise of 17.85 percent relative to December 2016. The monthly changes of this fuel's prices were 2.27, 0.30 and -2.95 percent in February, March and April, respectively, while the change in the first fortnight of May was -0.76 percent (see Box 1).

- Natural gas prices, determined in line with their international references, exhibited high annual growth rates, presenting an average of 20.27 percent in the last quarter of 2016 and of 27.16 percent in the first one of 2017. In the first fortnight of May, the price of this fuel observed an annual change of 21.27 percent.

- In early 2016, low consumption electricity tariffs for domestic sector decreased by 2 percent and in 2017 they are expected to remain unchanged. On the other hand, high consumption electricity tariffs for domestic sector (DAC) have been rising approximately since mid-2016, as a reflection of the performance of input costs required to generate electric power, mainly fuels. In 2017 so far, the monthly changes in DAC tariffs have been 2.6 percent in January, 3.8 percent in February, 8.0 percent in March, -1.5 percent in April and -4.8 percent in May.

- The average annual growth rate of the component of government approved fares has increased from 2.48 percent in the fourth quarter of 2016 to 3.91 percent in the first one of 2017. The most noticeable acceleration has taken place recently, when an annual change of 6.29 percent was registered in April, and 8.87 percent in the first fortnight of May. This performance was largely due to the increment in public transport fares across different cities. In particular, in Mexico City, public transport and urban bus fares generally increased by 1 peso, which represents an increase of

16.7 and 25 percent, depending on the specific considered service. This rise started as of April 27, reason why most of the impact generated by this increment was perceived in May, which led to an increment of 10.14 percent in annual terms in the CPI component of urban public transport in the first fortnight of May (Chart 7). Other cities that observed adjustments in different public transport tariffs during April were Huatabampo, Son.; San Luis Potosí, S.L.P; Tehuantepec, Oax.; and Tijuana, B.C., even though their impact on headline inflation was lower.

Chart 7
Indices of Selected Transport Services' Prices and Energy Products
Annual change in percent

Source: Banco de México and INEGI.
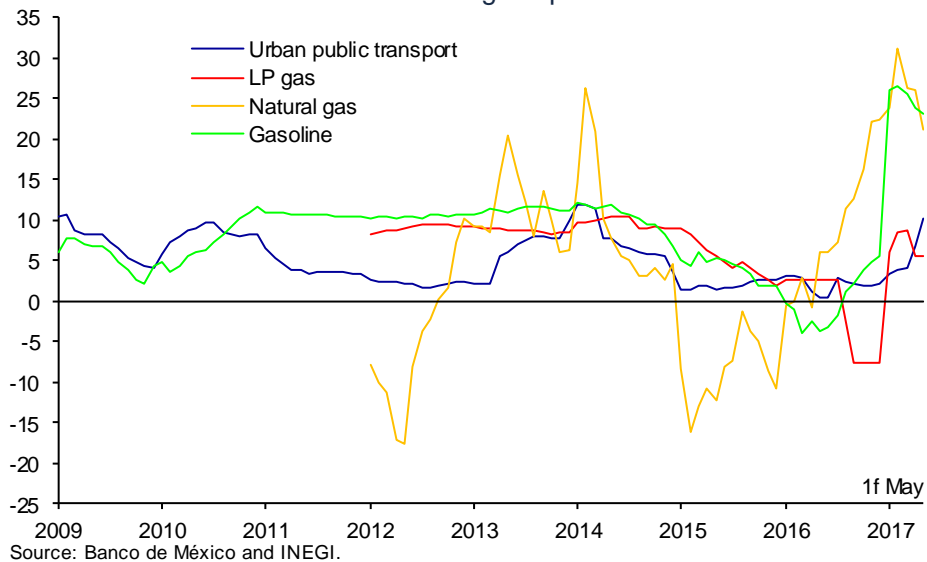
Box 1
Recent Evolution of LP Gas Price and Market Considerations

1. Introduction

This Box analyzes the recent evolution of LP gas prices in Mexico in view of the liberalization process that started in 2016 upon opening up the imports to be carried out by individual businesses, and which ended on January 1, 2017 with the full liberalization of this fuel's consumer prices. In particular, it presents the analysis of some of the main factors that affected the dynamics of LP gas prices, along with the relation between the degree of the competition level in this market and this fuel's prices. Available information shows that prior to 2016 consumer and producer prices in Mexico observed an upward trend, which was not related to the dynamics of the international reference, as it decreased considerably in recent years. On the other hand, starting from January 2017, the evolution of the international reference was only partially reflected in the prices of this good. Similarly, consumer prices of this energy product increased more than its producer prices.

It also shows that there are significant differences among price increments at the regional level, the highest increases having been registered in the Northern region. In this context, it is established that for different states of Mexico, the higher the number of retail businesses distributing this good, the lower are, on average, both the level of the price and its growth rate, a phenomenon that has been observed during 2017. This evidence could be congruent with the presence of differences at the level of competition at the regional level, as a result of which some regions with fewer suppliers may have a greater margin to increase LP gas consumer prices, which could partly account for the performance of this good's price since early 2017. Therefore, competition conditions in this market should be strengthened by incorporating a greater number of businesses, especially in the regions in which the price of this energy product has risen the most.

2. Evolution of LP Gas Prices in Mexico

The process of the liberalization of LP gas prices was announced in the Hydrocarbons Law, which was published on August 11, 2014 in the Federal Official Gazette, establishing the following: i) that until December 31, 2015 permits for LP gas imports will be exclusive to PEMEX, its subsidiary bodies and affiliate companies; ii) as of January 1, 2016, any interested party that complied with applicable legal provisions could obtain licenses to import LP gas; iii) up until December 31, 2016, the Mexican President will set maximum LP gas prices for final consumption; and, iv) as of January 1, 2017 public LP gas prices will be determined under market conditions.

Chart 1 exhibits the price indices of the LP gas international reference, as well as producer and consumer price indices of this energy product in Mexico. The quote used to prepare the Producer Price Index (PPI) corresponds to the Pemex's selling price, as it is the sole producer in Mexico. This firm sets its price, which is called first-hand sale price (FHSP), based on the methodology established by the Energy Regulatory Commission (CRE).[1] On the other hand, until December 31, 2016, the LP gas monthly consumer price was determined based on four elements: i) the producer price; ii) freight from the shipping center to the storage plant for distribution; iii) the marketing margin; and, iv) the value added tax.

As exhibited in Chart 1, in the trajectories prior to January 2017, LP gas producer and consumer prices in Mexico did not reflect the adjustments in the international reference, as the former were determined by the Federal Government. In particular, producer and consumer prices in Mexico presented an upward trend until 2016, which stands in contrast to the fact that the price of the international reference significantly declined in the period from 2014 to 2016. On the other hand, following the price liberalization in January 2017, LP gas prices in Mexico, to a limited extent, reflected the evolution of the international reference.

Chart 1
LP Gas: Consumer, Producer Price Indices and the International Reference
Indices Jan-2012=100
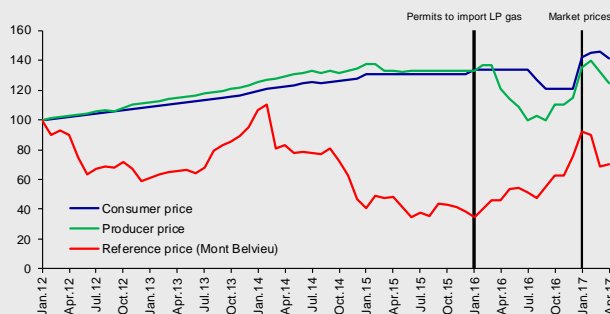
Source: Prepared by Banco de México with data from Bloomberg (the reference price expressed in pesos), INEGI (consumer and producer prices).

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[1] The CRE establishes that the FHSP is composed of: i) the price of the international reference in the Mont Belvieu Market, Texas; ii) the cost of attributable internment; iii) the adjustment due to transportation costs to reflect opportunity costs and competitiveness conditions in each point of sale; and iv) tariffs of the supply facility in which the delivery of LP gas is carried out.

Furthermore, while LP gas producer prices in Mexico went up 8.6 percent during the months in which the liberalization of prices has been carried out, consumer prices increased by 17.3 percent (Chart 2 and Table 1). These data contrast with the 6.7 percent decline in the price of the international reference expressed in Mexican pesos during the same period and indicate that the distributors of LP gas have passed through the increments that had not been registered in the international market onto consumers. In addition, they have passed through a greater increment as compared to that observed in producer prices.

Table 1
LP Gas: Consumer and Producer Prices in Mexico
Accumulated changes since Dec-2016, in percent

Region	2017			
	January	February	March	April
CPI	17.9	20.5	20.9	17.3
Central	17.4	18.6	18.3	14.8
North-Central	19.6	23.1	23.6	16.5
Northern	18.4	24.6	27.3	26.0
Southern	16.4	18.1	17.4	15.1
PPI	17.4	21.6	15.3	8.6

Source: INEGI.

Chart 2
LP Gas: Consumer and Producer Prices [1]
MXN/kg
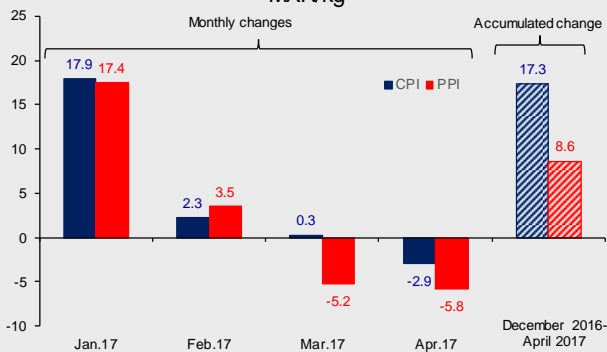
1/ As stated above, the producer price corresponds to FHSP.
Source: Prepared by Banco de México with data from INEGI.

During 2017, there were differences in the performance of LP gas prices at the local level. In particular, by pooling 46 cities that are considered in the CPI across the four regions, that is, the Northern, the North-Central, the Central and the Southern regions, it stands out that from December 2016 to April 2017, prices in all regions increased more than the increment in LP gas reported in the PPI and more than the increase in the international reference prices expressed in Mexican pesos, those in the Northern region being especially notable (Table 1).[2] Within the Northern region, increments in the cities of the CPI, that are located in Baja California (Tijuana and Mexicali) and Coahuila (Monclova and Torreón) stand out, observing accumulated increments of around 30 percent over the first four months of the year, while in Monterrey the increase in the same time period was almost half as low (Chart 3).

Chart 3
Northern Region: LP Gas Consumer Prices
Accumulated change from December 2016 to April 2017
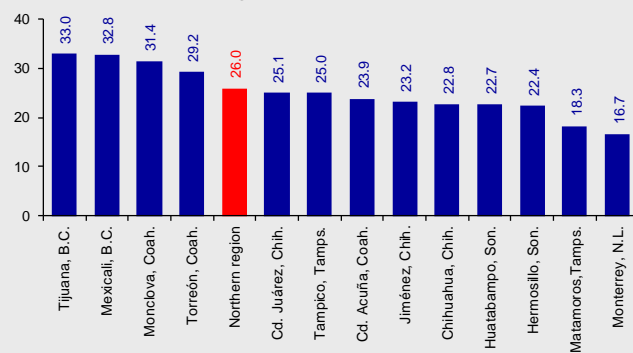
Source: Prepared by Banco de México with data from INEGI.

Additionally, when analyzing the CPI microdata during 2017, it is established that the Northern and the North-Central regions registered the highest share of LP gas prices with upward adjustments, as well as the lowest share of downward price adjustments (Chart 4a and Chart 4b).

Chart 4a
Frequency of LP Gas Price Increases
Data in percent

Source: Prepared by Banco de México with data from INEGI.

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2   This regionalization coincides with that used in the Regional Economic Report published by Banco de México.
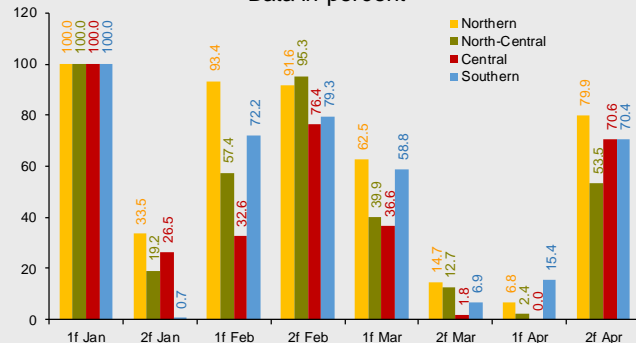
Chart 4b
Frequency of LP Gas Price Decreases
Data in percent
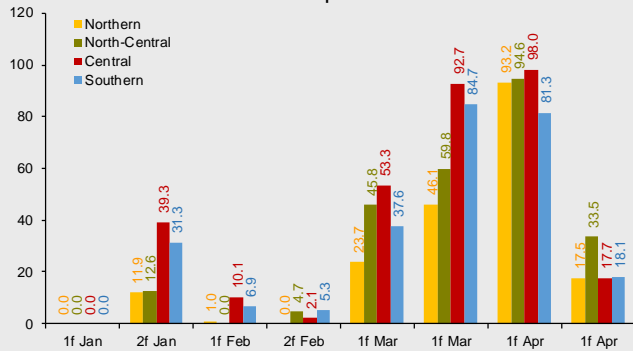
Source: Prepared by Banco de México with data from INEGI.

In view of the recent nature of the liberalization of the LP gas price, it is relevant to analyze factors that affected the evolution of consumer prices. In particular, it is important to identify the elements that maybe limiting the consumer from benefitting from the reductions both in the quote of the LP gas international reference and in the U.S. dollar quote, following the increments at the beginning of the year.

3. Market Structure and LP Gas Prices in Mexico

It is argued in this Section that one of the factors affecting LP gas consumer prices in different states of Mexico is the number of distributors of this energy product. To do so, Mexican states were split into two groups: the first encompasses the states that from December 2016 to April 2017 presented price increments of LP gas, which were higher than the average price increment of this energy product in the CPI at the national level, and the second incorporates the states in which price increments were lower than the average in the same period. It turns out that the states with LP gas price increments above the average increase at the national level are characterized by a lower number of distribution companies. Indeed, while in the first group (an accumulated price change above the national average) the price change was 23.3 percent, the number of firms per state was on average 12.6. Conversely, states that increased the price less than the national average, did it by 14.4 percent, having on average of 20 distribution firms (Chart 5a). Additionally, a second exercise was carried out, which used the price levels reported by distributors to the CRE on April 30, 2017, by Mexican state, generally yielding the same result: the bigger the average number of firms, the lower the price level and vice versa, showing coincidence across most states (Chart 5b).

In addition, Chart 6 shows, by means of a scatter diagram, the relation between the accumulated consumer price increment of LP gas between December 2016 and April 2017 and the number of firms by state. The results point

to an inverse association between the number of retail firms distributing this fuel and consumer price increments that have been observed during 2017. Furthermore, this chart presents the regression equation, which is statistically significant and with an R^2 of 0.35. In line with the results of this estimation, on average, the smaller the number of firms distributing LP gas, the higher the price increment in this fuel, and vice versa. This evidence complements the above results, suggesting that there are benefits for the consumer to promote a greater inflow of firms distributing this fuel, to generate an environment of higher competition.

Chart 5a
LP Gas: Accumulated Change of Consumer Prices and Number of Distributing Businesses by State
Businesses and data in percent
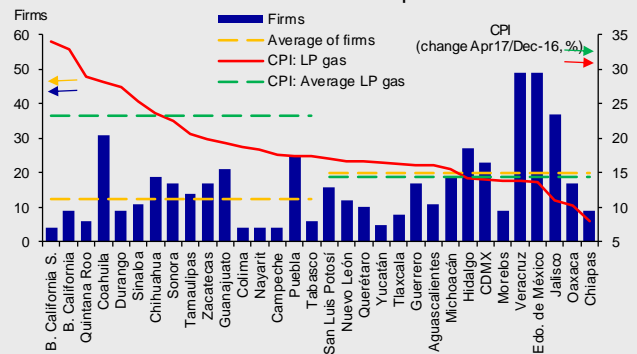
Source: CRE (businesses) and INEGI (accumulated change of LP gas in the CPI index).

Chart 5b
LP Gas: Consumer Prices and Number of Distributing Businesses by State
Businesses and prices in MXN/kg
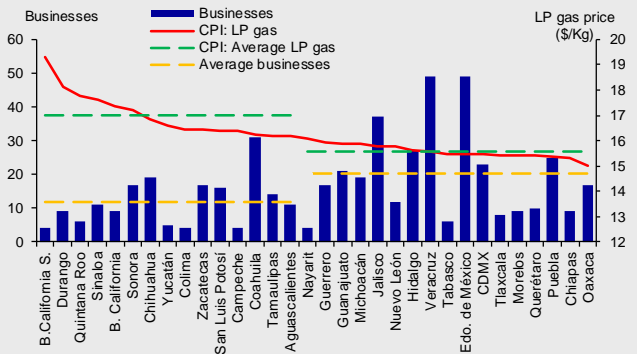
Source: CRE.

Chart 6
Relation between the Accumulated Change of Consumer Prices and Number of Distributing Businesses by State
Businesses and data in percent
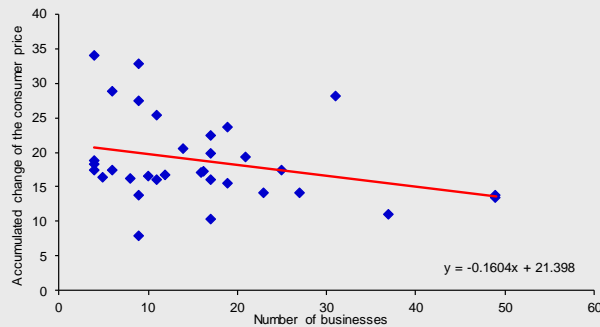
Source: CRE (businesses) and INEGI (accumulated change of LP gas in the CPI index).

It is noteworthy that, based on the above exercises, 12 states of the Mexican Republic can be found both in the group characterized by accumulated price increments above the national average and in the group with the prices above the national average. These are Baja California, Baja California Sur, Campeche, Chihuahua, Coahuila, Colima, Durango, Quintana Roo, Sinaloa, Sonora, Tamaulipas and Zacatecas. However, some states that registered price changes from December 2016 to April 2017 that are above the national average belong to the group of Mexican states with prices below the national average. This could indicate that the price that prevailed in December 2016 in these states was relatively low, reason why its high change could in part be reflecting a price adjustment that was previously relatively distorted. Hence, despite the evidence presented in this Box that is congruent with a possible competition problem in some states, not all price performance should be associated to the said situation.

4. Final Remarks

As a result of the LP gas liberalization in January 2017, there was an accumulated increment of 17.3 percent in consumer prices of this energy product between December 2016 and April 2017, which has been greater than the accumulated increment of 8.6 percent in producer prices, which also currently serve as FHSP. LP gas prices increased in a widespread manner across different regions of the country, the Northern region exhibiting the highest increments. Similarly, evidence for different states of Mexico shows that in the states characterized by a higher number of retail businesses distributing LP gas, both prices and accumulated increments in 2017 tended to be lower. Previous results seem to suggest that the LP gas market in Mexico began its liberalization with competition levels that were differentiated across the states and, therefore, it would be advisable to have a larger number of businesses distributing this energy product in those regions where the price increased the most, in the interest of competition.

2.2.   Producer Price Index

Between the fourth quarter of 2016 and the first one of 2017, the Producer Price Index (PPI) of total production, excluding oil registered an increment in the average annual change rate from 7.70 to 9.57 percent, marking 8.75 percent in April 2017 (Chart 8). The PPI subindex of exports presented the highest annual change rate (13.31 and 12.71 percent in the fourth quarter of 2016 and the first one of 2017, while in April 2017 it was 9.35 percent), as it is an indicator that includes goods quoted in USD, and, thus, it reflects to a greater extent the national currency depreciation. However, the appreciation of the national currency in recent months seems to be contributing to gradually decrease the change rate of these goods' prices, even though the said rate still remains high. Meanwhile, the subindex of finished merchandise prices for domestic consumption exhibited more moderate annual change rates (4.99 and 6.36 percent in the fourth quarter of 2016 and in the first one of 2017, respectively, while in April 2017 it marked 6.39 percent). As stated in previous Reports, the PPI subindex of finished merchandise for domestic consumption is the one with the maximum predictive power on the performance of the core prices of merchandise destined to consumers.[2]

Chart 8
Producer Price Index [1/]
Annual change in percent
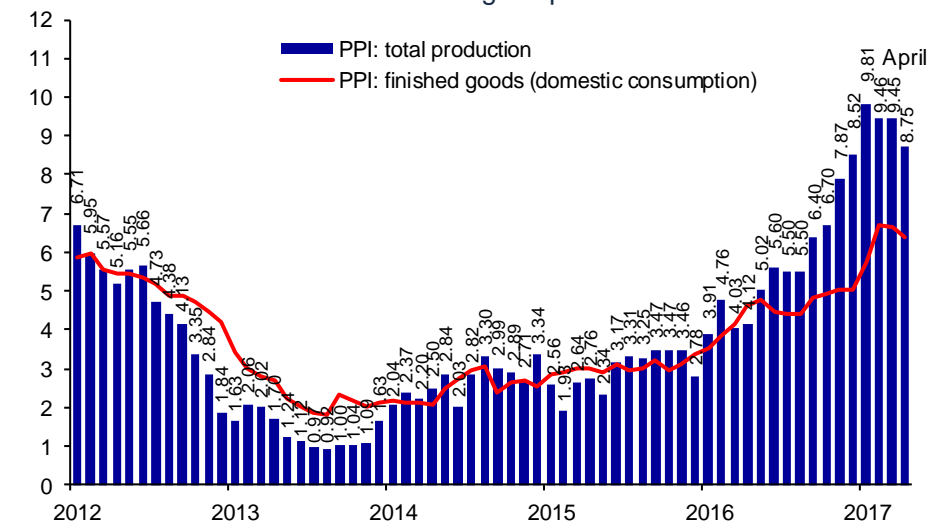
1/ Total Producer Price Index, excluding oil.
Source: Banco de México and INEGI.

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[2]   See Box 1 of the Quarterly Report April – June 2016 "Can Inflationary Pressures be Identified when Measured with CPI by means of the Performance of PPI Merchandise Subindices?"

3.   Economic and Financial Environment

3.1.   External Conditions

Strengthening of the world economic growth rate that had begun in the second half of 2016 continued during the first quarter of the year, as a result of the rebound in investment, in industrial production and global trade. World economy is still expected to recover in 2017 and 2018, which is attributed to a greater-than-previously-estimated expansion of some of the main advanced economies and to the expected greater growth of the emerging ones (Chart 9). This is largely supported by the relative strength of fixed investment in the main advanced and in some emerging economies, which has been registered since the end of 2016. This recovery has been driven by favorable credit conditions, lower indebtedness levels, greater business profits, and a relative decrease in financial volatility levels, as well as the strengthening of global demand.

However, growth remains modest and risks to this scenario are downward, high uncertainty prevailing over the direction of the economic policy in advanced economies, in particular in relation to the U.S. fiscal and trade policies, the possibility of a faster-than-estimated rate of the monetary policy normalization in that country, risks associated to macroeconomic and financial stability in China, the evolution of negotiations between the U.K. and the European Union over the future of their economic and financial relations, the persistence of geopolitical risks across different regions of the world. These factors could propitiate new volatility episodes in international financial markets and affect the world growth outlook.

Chart 9
World Economic Activity

a) Growth Forecast of World GDP
Annual change in percent

b) World Trade in Goods [1/] and Global Manufacturing PMI
Annual change of the 3-month moving average in percent and diffusion indices, s. a.
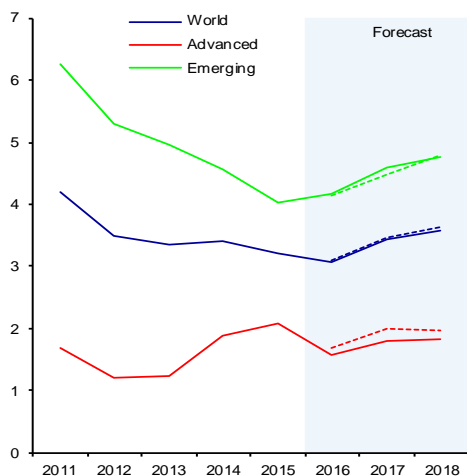
Note: The dotted lines refer to WEO forecasts of April 2017, the solid lines refer to WEO forecasts of October 2016.
Source: IMF, WEO October 2016 and April 2017.
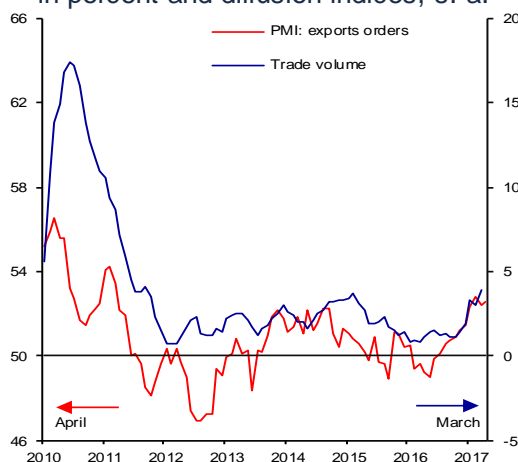
s. a. / Seasonally adjusted data.
1/ It refers to the sum of exports and imports.
Source: CPB Netherlands and Markit.

3.1.1.   World Economic Activity

The U.S. economy slowed down during the first quarter of 2017, as its annualized quarterly growth rate shifted from 2.1 percent in late 2016 to 1.2 percent in the first quarter of 2017 (Chart 10a). The low growth pace has been associated to such

transitory factors, as lower demand for energy during the winter season in light of unusually warm weather conditions, the delay in tax returns and a lower rate of inventories' accumulation. Besides, just like in the first quarter of the previous years, the measurement of GDP could be biased to the downside due to the difficulties related to the seasonal adjustment of some of its components. Therefore, a greater rate of expansion is expected over the next quarters. In particular, even though growth of private consumption moderated significantly, the persisting growth of employment and high levels of wealth and households' confidence are estimated to contribute to the rebound in private consumption over the next quarters (Chart 10b). Furthermore, the expansion of the economy is anticipated to remain supported by the recovery of residential and non-residential investment.

On the other hand, the growth rate of the U.S. industrial production accelerated in the first quarter of 2017, as it grew at an annualized quarterly rate of 1.8 percent, the highest change registered since 2014 (Chart 10c). This recovery persisted in April, in response to the recovery in the manufacturing sector and in mining, which is a sector that has been supported by improved oil activities observed since the crude oil prices stabilized. Conversely, gas and electricity production were affected at the beginning of the year by unusual weather conditions.

Chart 10
U.S. Economic Activity

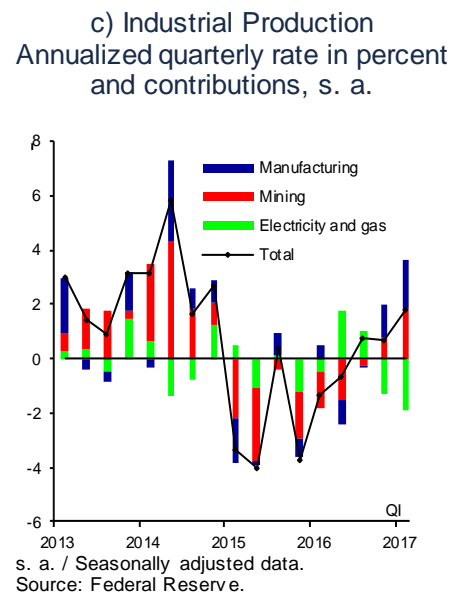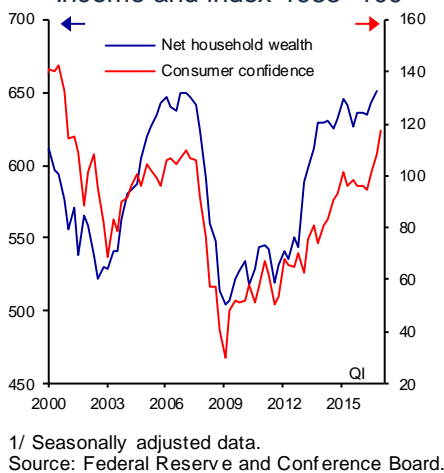| a) Real GDP and Components Annualized quarterly change in percent and percentage point contributions, s. a.	b) Net Household Wealth and Consumer Confidence [1] In percent of Disposable Personal Income and index 1985=100	c) Industrial Production Annualized quarterly rate in percent and contributions, s. a.

s. a. / Seasonally adjusted data.
Source: Bureau of Economic Analysis.

1/ Seasonally adjusted data.
Source: Federal Reserve and Conference Board.

s. a. / Seasonally adjusted data.
Source: Federal Reserve.
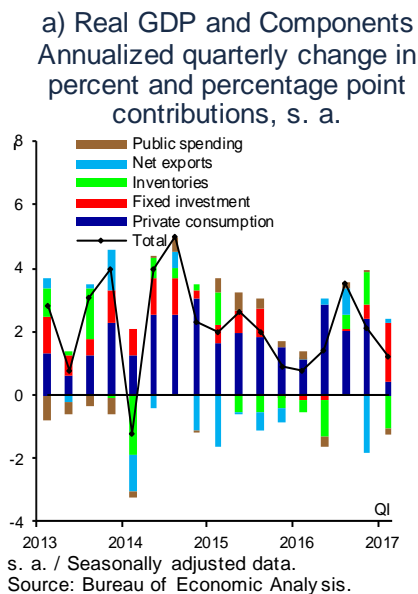
In this context, the U.S. labor market continued strengthening during the first months of 2017. Indeed, on average, there was a monthly increment of 185 thousand new jobs during the first four months of the year, which is a similar rate to that observed on average during all 2016. This represented a higher rate than the one that is considered necessary to absorb the growing labor force, as a result of which the unemployment rate lied at 4.4 percent in April, which is below the natural unemployment rate estimated by the Federal Reserve (Chart 11a). Additionally, in April the number of employed people as a share of the civil population attained the highest level since 2009. Still, hourly remunerations kept expanding at a moderate

pace during the first quarter of 2017, which is similar to that exhibited in the last quarter of 2016 (Chart 11b).

Chart 11
U.S. Labor Market

a) Observed Unemployment Rate and
Estimated Natural Unemployment Rate
In percent, s. a.

b) Wage Indicators
Annual change in percent, s. a.
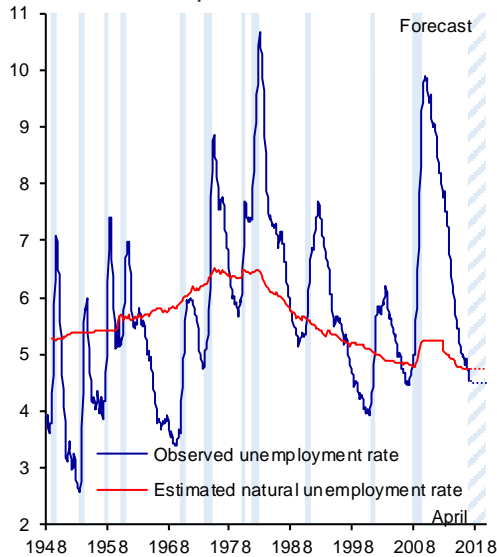
Note: Columns refer to recessions. The dotted lines refer to medians of the Federal Reserve long-term unemployment rate estimates (red) and estimates for the next three years (blue).
s. a. / Seasonally adjusted data. The observed unemployment rate corresponds to the 3-month moving average.
Source: BLS, CBO, Federal Reserve and the Federal Reserve Bank of San Luis.
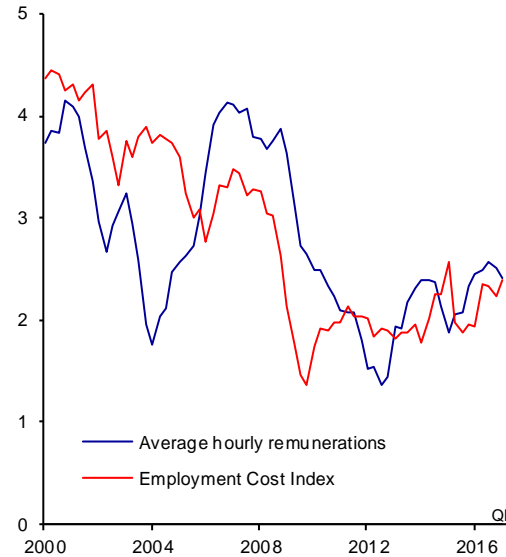
s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

GDP in the Euro area expanded at an annualized quarterly rate of 2.0 percent during the first quarter of 2017, which implies a slightly higher growth rate than the average in the last four quarters, which was 1.8 percent (Chart 12a). On the other hand, in April the purchasing managers' composite index reached the highest level for the last six years and reflected a more widespread recovery across sectors and countries, which suggests a possible acceleration of growth in the second quarter of the year (Chart 12b). The dynamism of economic activity in this region remained driven by domestic demand, in a context of a persisting recovery of the labor market and a continuous rebound in economic agents' confidence (Chart 12c). Nevertheless, despite the moderation of downward risks to growth after the announcement of the elections' results in France, there is still uncertainty regarding the strength of the banking sector in some countries and the impact of the U.K. withdrawal from the European Union.

Chart 12
Economic Activity in the Euro Area

a) Real GDP
Index 1Q-2008=100, s. a.

s. a. / Seasonally adjusted data.
Source: Eurostat.

b) Consumer Confidence, Economic
Sentiment and the Purchasing
Managers' Index [1]
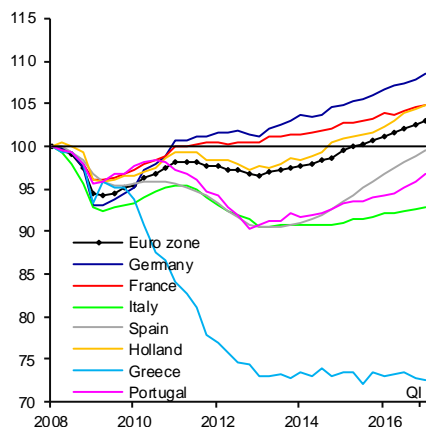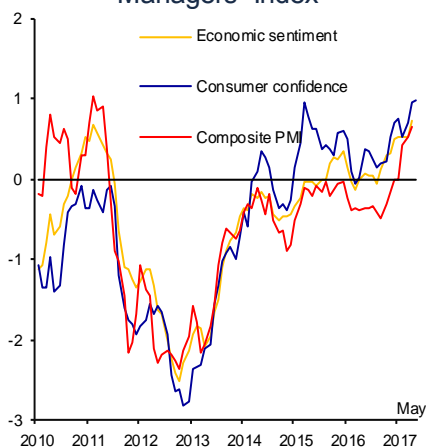
1/ Seasonally adjusted data.
Source: European Commission and Markit.

c) Unemployment Rate
In percent of economically active
population, s. a.
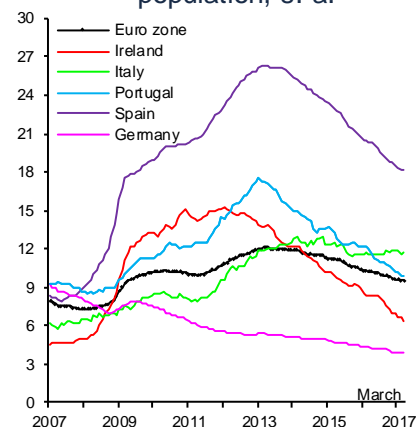
s. a. / Seasonally adjusted data.
Source: Eurostat.

In Japan, the economy continued expanding at an annualized quarterly growth rate of 2.2 percent during the first quarter of the year, after registering 1.4 percent in the previous quarter (Chart 13a). The greater dynamism of economic activity was largely due to the soundness of external demand, growth of public spending, higher corporate profits and the rebound in businesses' confidence levels. On the other hand, even though industrial production moderated its growth rate during the first quarter of the year, prospective indicators point to its solid growth during the second quarter of 2017, which is consistent with a greater public spending in the construction sector. In this scenario, the unemployment rate reached its lowest level since 1994, and the labor market seems to be tightening.

In the U.K., the growth rate of economic activity moderated, registering an annualized quarter growth rate of 0.7 percent in the first quarter of the year, after the expansion of 2.7 percent in the last quarter of 2016 (Chart 13b). This occurred after the relatively high growth of financial and commercial services and the moderate expansion of industrial production and public spending were counteracted by the low dynamism of construction and the contraction of the private consumption-related services. With respect to demand, spending on consumption decelerated significantly and net exports negatively affected the GDP growth. In contrast, public spending and investment rebounded considerably. Prospective indicators point to a scenario of moderate growth in the second quarter.

Chart 13
Economic Activity in Japan and the U.K.

a) Japan: Real GDP and its Components
Annualized quarterly change in percent and
share in percentage points, s. a.

b) U.K.: Real GDP
Annualized quarterly change in percent, s. a.

s. a. / Seasonally adjusted data.
Source: Cabinet Office.

s. a. / Seasonally adjusted data.
Source: Office for National Statistics.
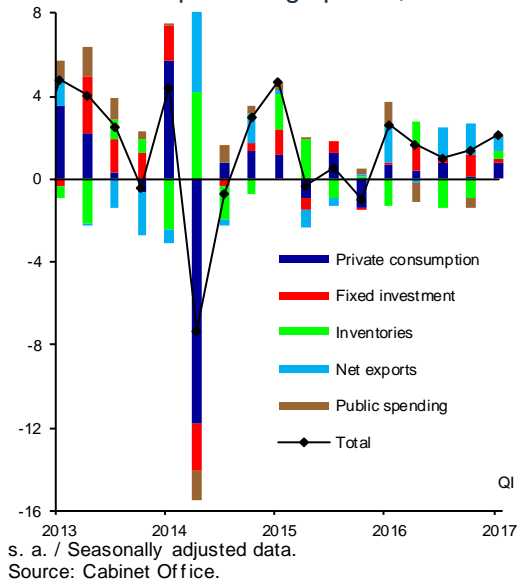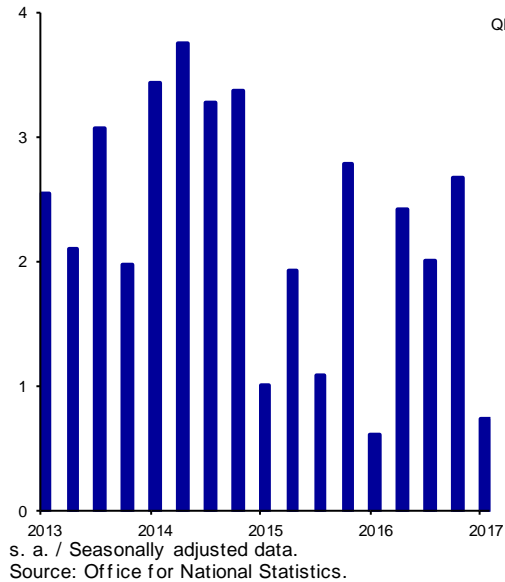
In emerging economies, timely indicators suggest an improvement in industrial activity, retail sales and exports during the reference period (Chart 14). This has been contributed to by the recent momentum gained by the world trade in view of the improvement in advanced economies and a certain recovery in international commodity prices during 2016. The growth rate of the Chinese economy accelerated with respect to the last quarter of 2016, and registered an annual growth rate of 6.9 percent. However, available indicators point to a moderation in its growth rate over the following quarters and there is a risk that this slowdown may be greater than anticipated, due to the tightening of liquidity conditions and the implementation of macroprudential measures to strengthen its financial system, which could lead to tightening of credit conditions in the next quarters. In Brazil, despite the recovery of economic activity in the first quarter, the recent deterioration of the political situation could affect the growth of the economy by increasing the probability that the process of the monetary policy relaxation may be interrupted and that the approval of structural reforms in that economy may be hampered. Meanwhile, most emerging economies are still facing risks, mainly in light of a possible introduction of trade and investment barriers, and a tightening of global financial conditions. These factors could favor capital outflows and affect demand and production levels in these economies.

Chart 14
Economic Indicators of Emerging Economies

a) China: Indicators of Economic Activity
Annual change in percent
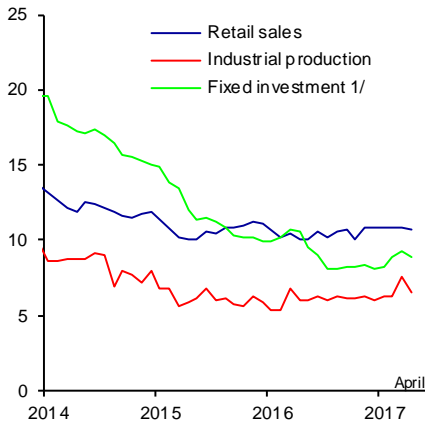
1/ It corresponds to the accumulated annual change in percent.
Source: Haver Analytics.

b) Emerging Economies: Indicators of Economic Activity
Diffusion index (50=neutral) and annual change, the 3-month moving average, s. a.
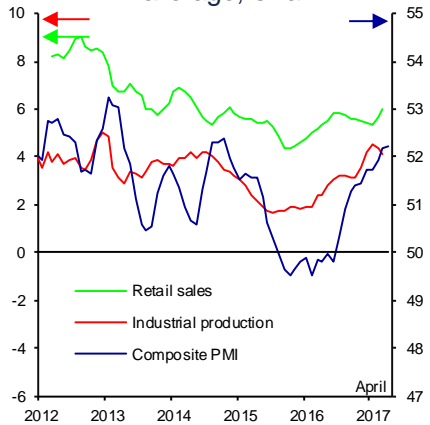
s. a. / Seasonally adjusted data.
Note: Industrial production and retail sales expressed in volumes.
Source: Markit, CPB Netherlands, Haver Analytics and IMF.

c) Emerging Economies: Exports
Annual change of the 3-month moving average in percent
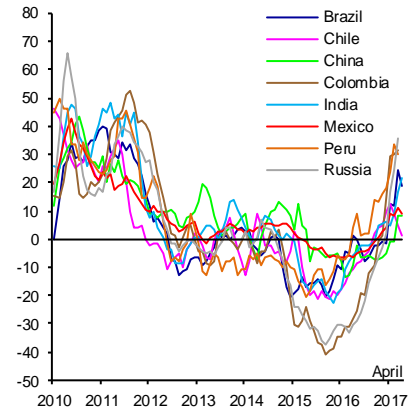
Note: Nominal figures.
Source: Haver Analytics.

3.1.2.   Commodity Prices

During the period analyzed in this Report, international commodity prices generally stabilized around the levels registered in late 2016. In particular, oil prices decreased as a result of higher levels of crude oil production in the U.S., even though in recent weeks there has been a certain recovery in light of the agreement established among the OPEC member countries and other oil producing economies to extend production cutbacks until March 2018. On the other hand, industrial metal prices reverted the increment at the beginning of the year, as production went up. In the meantime, grain prices went down after a moderate recovery at the beginning of the year, in view of the increment in the forecast for global final inventories, released by U.S. Department of Agriculture (Chart 15).

Chart 15
International Commodity Prices [1]

a) Crude Oil
USD/barrel

b) Corn and Wheat
USD/bushel

c) Metals
Index 01/01/2013=100

1/ Spot Market.
Source: Bloomberg.
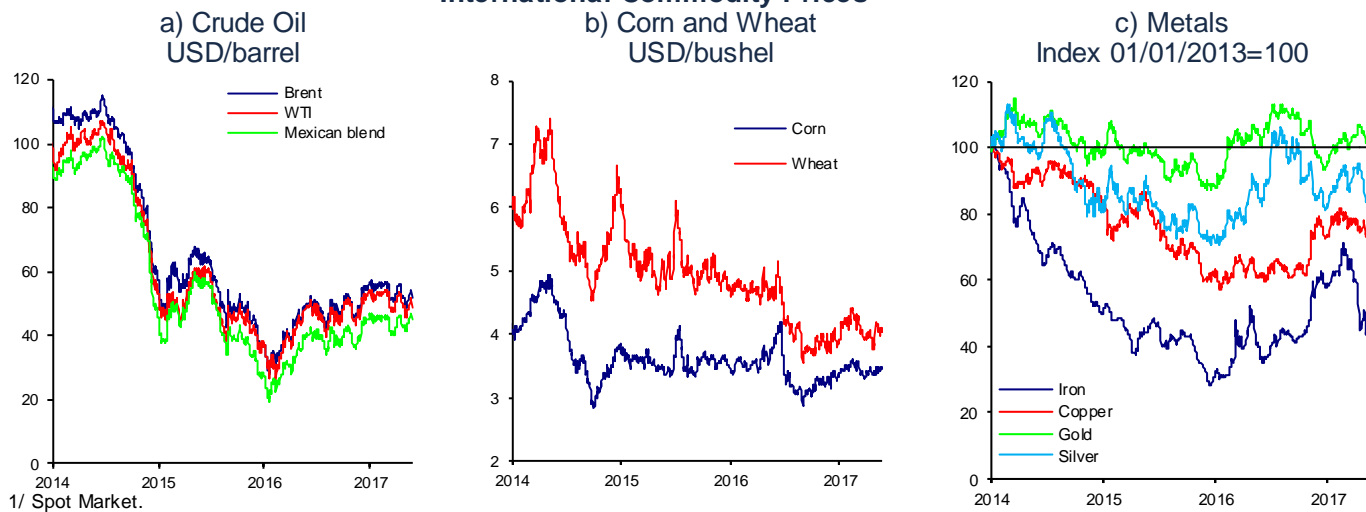
3.1.3.   Inflation Trends Abroad

Inflation kept rising in the main advanced economies during the first quarter of 2017, reflecting energy price increments during most of 2016, as well as lower slackness in the use of resources. Still, in most economies inflation remains below the respective central banks' targets, while its core component and inflation expectations are at even lower levels (Chart 16a and Chart 16b).

In the U.S., the consumption deflation shifted from an annual rate of 1.6 percent in December 2016 to 1.8 percent in March 2017. Even though the annual change of the core index decreased from 1.7 to 1.6 percent in this period, it was largely due to transitory factors, such as drops in telecommunication tariffs.

In the Euro area, inflation continued increasing during the reference period, from an annual rate of 1.1 percent in December 2016 to 1.9 percent in April 2017. Meanwhile, core inflation went up from 0.9 percent to 1.2 percent in the said period, mainly due to temporary factors, especially higher prices of the tourism services' component, as a result of the Easter calendar effect. Although inflation exhibited a major convergence among the economies of the region, inflation and its expectations still lied below the target set by the European Central Bank. This reflects the presence of a certain degree of slackness in the labor market in the Euro area.

In the U.K., progress of consumer inflation continued, as it shifted from an annual rate of 1.8 percent in December 2016 to 2.6 percent in April, exceeding the 2 percent target established by the Bank of England for the first time since September 2013. Similarly, the core indicator presented an increase in its rate from 1.8 percent in December to 2.4 percent in April. The inflation rebound was largely due to the pass-through effect of the previous depreciation of the pound sterling onto prices, a tendency, which, albeit being offset by a limited increase in domestic costs, could imply greater inflation pressures throughout the year.

In Japan, headline inflation increased from an annual rate of 0.3 percent in December to 0.4 percent in April. On the other hand, the indicator, which excludes fresh foods, shifted from a rate of -0.2 percent to 0.3 percent in this period, and thus

continued with a recovery trend it had started in the last quarter of 2016, which was mainly related to the progress in energy prices during most of 2016. Despite the estimation that the recent tightening in the labor market could generate greater inflation pressures, wage indicators of the first quarter suggest that they will remain moderate. Additionally, inflation expectations and break-even inflation reflected in financial instruments remained far below the target set by the Bank of Japan.

In emerging economies, inflation has performed in a differentiated manner across countries and regions, but in many cases inflation pressures have moderated insofar as the effects of the pass-through of the previously observed exchange rate weakness onto prices dissipated in many of these countries, along with a lower impact of increments in public tariffs and taxes, which occurred in most cases in 2016. Lower inflation pressures derived from exchange rate adjustments and from higher commodity prices allowed inflation in this group of economies to be largely determined by their relative position in the business cycle (Chart 16c).

Chart 16
Annual Headline Inflation and Inflation Expectations in Advanced and Emerging Economies
In percent

a) Advanced Economies: Headline Inflation

b) Advanced Economies: Long-term Inflation Expectations Derived from Financial Instruments [1]

c) Emerging Economies: Headline Inflation
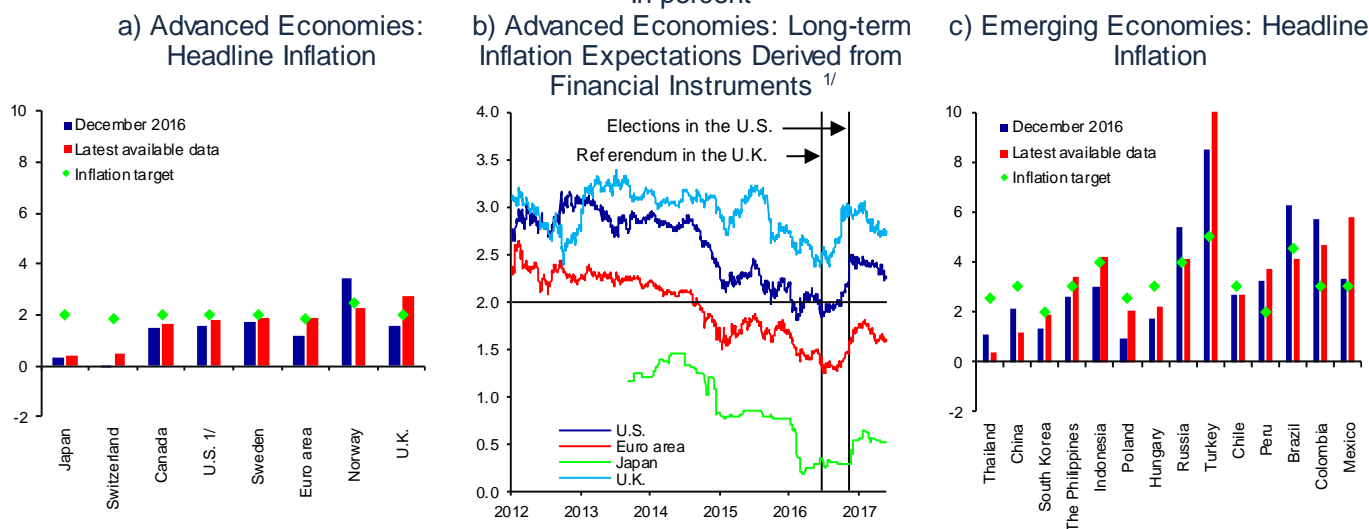
1/ It refers to consumption deflator. Seasonally adjusted data.
Source: Haver Analytics.

1/ Inflation expectation in a 5-year period for the following 5 years. Expectations obtained from swap contracts in which one counterparty agrees to pay a fixed rate in exchange for receiving a referenced payment at an inflation rate over a specified period.
Source: J.P. Morgan.

Source: Haver Analytics.

3.1.4.   International Monetary Policy and Financial Markets

In advanced economies, the monetary stance of the main central banks remained accommodative during the first months of 2017, even though there are still divergences across countries, as a reflection of the differences in their relative positions in the economic cycle. While the monetary normalization process in the U.S. continues, in the Euro area and Japan the importance of maintaining an accommodative policy has been called attention to, even though a lower need of further stimuli is perceived in view of lower deflationary risks.

In its meeting of March, the Federal Reserve increased the target for the federal funds' rate by 25 basis points, locating it between 0.75 to 1 percent, and

subsequently maintained it unchanged in its meeting of May. In the latest press release, this Institution emphasized the strength of the labor market and its expectation that economic activity will continue expanding, despite the deceleration during the first quarter, which was perceived as an eminently temporary phenomenon. In this context, the market expectation that the cycle of upward adjustments in the federal funds' rate is to be resumed in the next meeting of June has not been modified. In this environment, it has been confirmed that the most appropriate strategy to stabilize inflation around its 2 percent target is still through a gradual increment in the reference rate, and that the referred institution will continue monitoring the evolution of inflation and its expectations with respect to a symmetrical objective. Furthermore, there was a strengthening of the expectation that by the end of 2017 the Federal Reserve will start taking actions aimed at decreasing the size of its balance, which would accelerate the process of the monetary policy normalization. Still, this institution has been emphasizing that the said process should take place in a gradual and predictable manner, by not reinvesting at least part of the securities' maturities held by it.

In its meeting of April, the European Central Bank maintained its levels of the reference interest rates unchanged. This institution perceives a lower probability of implementing further monetary stimuli, considering that the risks to growth, despite being biased to the downside, have moderated. Nonetheless, even though deflation risks decreased and the dispersion of inflation levels across the economies has diminished, this institution acknowledges that inflation pressures are still low and do not give any clear signals of increasing, reason why the need to maintain an accommodative monetary stance persists. In this sense, the ECB confirmed that it remains prepared to adjust the size and/or the duration of its asset purchase program, if necessary.

In its meeting of April, the Bank of Japan maintained unchanged the amount of its asset buying program and its guide to manage the yield curve, with the deposit rate of -0.1 percent and the 10-year government rate around 0 percent. Although its press release specified that the economy could initiate a moderate expansion process and that inflation remains at low levels mainly due to transitory factors, the need to maintain the monetary stance accommodative was emphasized. In accordance with that, the Bank of Japan increased its growth expectations for 2017 and 2018, and, despite moderately reducing its inflation forecast for 2017, it estimates that inflation will attain its 2 percent target in 2019.

In its meeting of May, the Bank of England also maintained its monetary stance unchanged. Even though this institution keeps perceiving downward risks to growth, it stood out that the economic activity has continued presenting dynamism, despite the uncertainty with respect to the U.K. exit from the European Union, and it signaled that its monetary stance will continue depending on the balance between the inflation above its target and the level of slackness in the economy. In its Inflation Report of May, this institution lowered its growth expectation for 2017 and raised it for the subsequent years. Moreover, it increased its inflation forecast for 2017 and adjusted its outlook for the following years downwards, even though it anticipated that inflation will still remain above its target during the next three years, slowly converging towards it. Thus, this institution stressed that, if the economy evolves in accordance with the estimates, the monetary policy will have to follow a

slightly greater tightening trajectory than that reflected in the yield curve of the market.

In emerging economies, in the first months of 2017 monetary stances remained differentiated in accordance with the cyclical position of the countries, as well as with different idiosyncratic factors. Indeed, moderation of inflation pressures contributed to the fact that the monetary stance remained unchanged in a great number of economies and even relaxed in such countries as Brazil, Colombia and Russia, where pressures declined considerably and the output gap remained significant. On the other hand, some other central banks, Turkey among them, preferred monetary tightening in view of greater inflation risks derived from geopolitical factors.

There was lower volatility in international financial markets and asset prices increased during the first months of 2017, with respect to the last months of 2016. This occurred despite the persisting uncertainty regarding the economic policy in the main advanced economies and despite the increasing geopolitical risks across different regions of the world. The favorable performance of the markets seems to be responding more to the expected scenario of sustained growth rather than to high levels of political and economic uncertainty. Thus, interest rates in advanced economies remained at historically low levels, while their stock markets kept increasing (Chart 17). Emerging markets registered significant capital inflows, reverting the outflows that had been observed in the wake of the U.S. elections. In this context, most currencies in emerging economies strongly appreciated (Chart 18). Additionally, market indicators that measure the sovereign credit risk for this group of countries exhibited a widespread decrease. Still, despite low volatility measures, markets do not rule out extreme or tail risks, observing an increment in the costs of these risk hedges. Indeed, episodes of greater instability in financial markets cannot be ruled out yet, given the persisting uncertainty over the materialization of the scenario that is sustaining favorable expectations, such as the probability that the above referred extreme risks to the global economy may take place.

Chart 17
Financial Indicators in Selected Advanced Economies
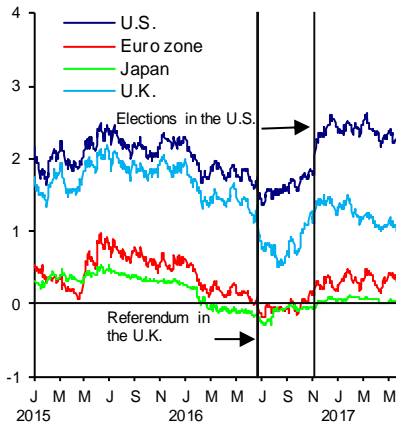
a) 10-Year Bond Yield
In percent

b) Exchange Rate
Index 01/01/2015=100
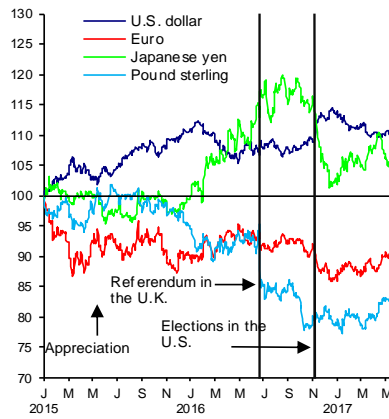
c) Stock Markets
Index 01/01/2015=100
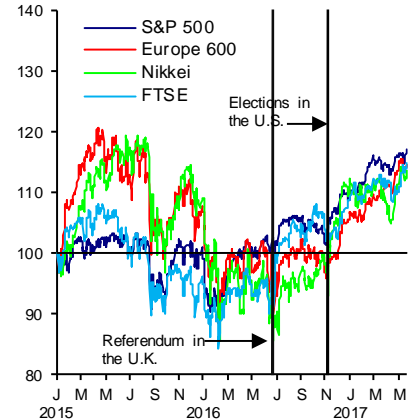
Source: Bloomberg.

Chart 18
Financial Indicators in Selected Emerging Economies

a) Stock Markets
Index 01/01/2015=100
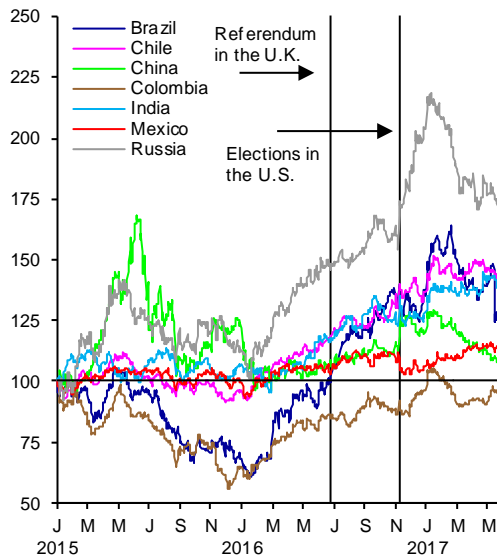
b) Exchange Rate
Index 01/01/2015=100
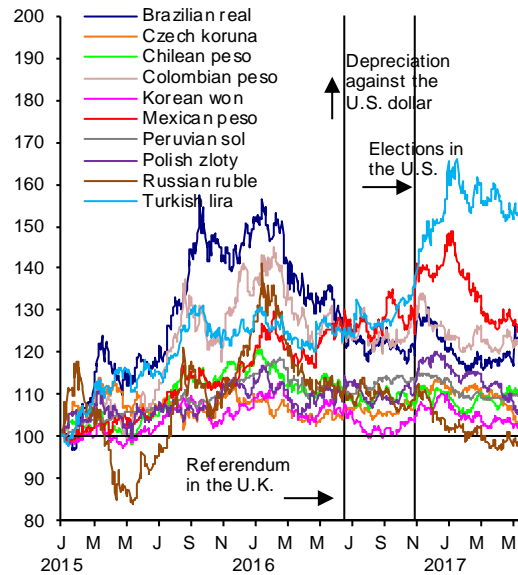
Source: Bloomberg.

c) Sovereign Credit Risk Market Indicators
(CDS)
In basis points
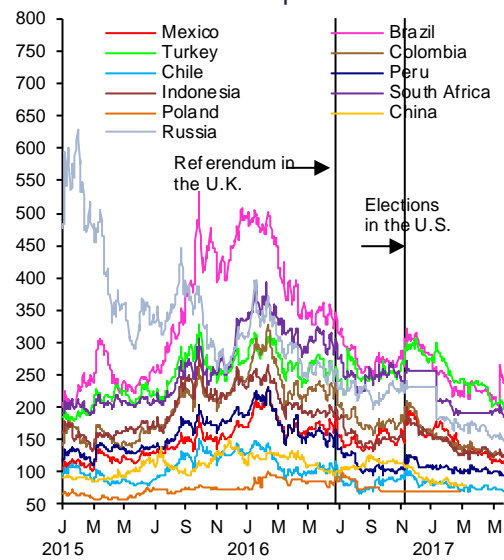
Source: Bloomberg.

d) Weekly Flows of Funds to Emerging
Economies (Debt and Stock) [1]
In USD billion
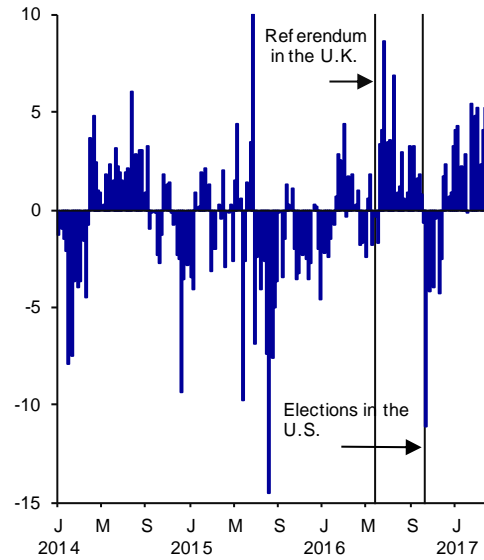
1/ The sample includes funds used for emerging economies'
stock and bond transactions, registered in advanced
economies. The flows exclude the performance of the portfolio
and the exchange rate movements.
Source: Emerging Portfolio Fund Research.

3.2.   Evolution of the Mexican Economy

3.2.1.   Economic Activity

In the first quarter of 2017, the growth rate of the Mexican economy was similar to that observed in the last quarter of 2016. This largely reflected the expansion of both private consumption and external demand. In contrast, weakness of investment accentuated.

Indeed, in the period of January – March 2017 manufacturing exports kept recovering, following the negative trend displayed during 2015 and in early 2016, which had been contributed to by the depreciation of the real exchange rate and the gradual strengthening of global economic activity in general, and in particular of the U.S. industrial production and foreign trade. The improvement in Mexican exports was observed both in those destined to the U.S. and to the rest of the world (Chart 19a). Likewise, the reactivation was visible in both automotive and non-automotive exports (Chart 19b and Chart 19c). Meanwhile, oil exports expanded in the first quarter of the year, although they remain at low levels. This increment is accounted for by a higher average price of the Mexican blend for exports, given that the crude oil platform for exports decreased (Chart 19d).

Chart 19
Mexican Exports
Index 2008=100, s. a.
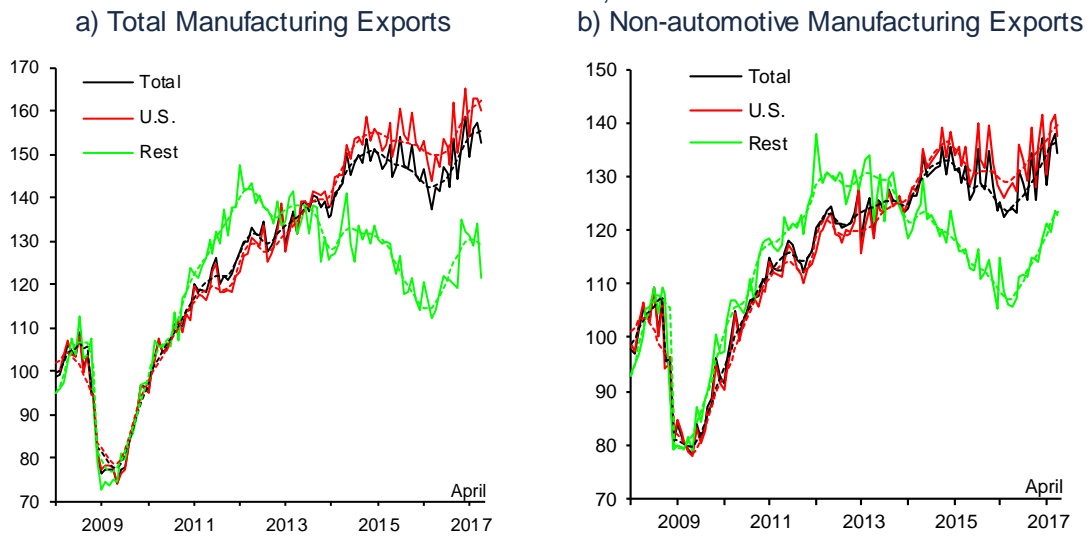
a) Total Manufacturing Exports

b) Non-automotive Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

c) Automotive Manufacturing Exports

d) Oil Exports and Crude Oil Export Platform
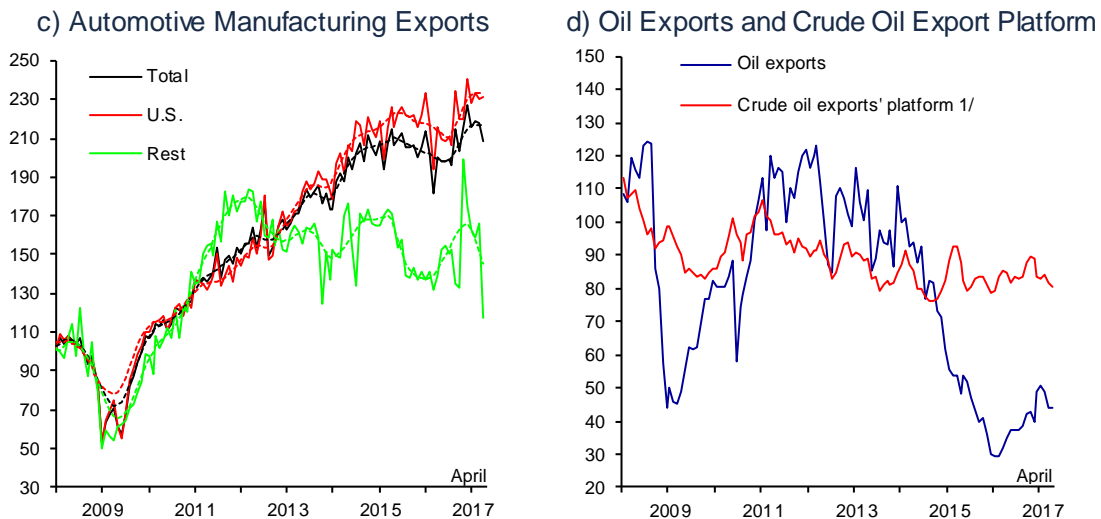
s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

s. a. / Seasonally adjusted series based on data in nominal dollars.
1/ 3-month moving average of daily barrels of the seasonally adjusted series.
Source: SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest and Banco de México with data from *PMI Comercio Internacional*, S.A. de C.V.

As regards domestic demand, in early 2017 the monthly indicator of domestic private consumption continued with a positive trend. The increasing trajectory of this indicator reflected the performance of both the domestic goods and services' component, and the consumption of imported goods (Chart 20a and Chart 20b).

i. Despite the above, more timely indicators, but with less coverage, suggest a certain deceleration of private consumption. In fact, the revenues of retail businesses and the sales of light vehicles declined in the quarter (Chart 20c).

ii. Strength of the labor market seems to have contributed to maintaining relatively high private consumption levels, even though in the quarter there was a drop in real wages as a result of higher inflation. Moreover, remittances and the growth rate of consumer credit slightly decelerated in the reference period, although they remain at high levels (Chart 21a, Chart 21b and see Section 3.2.3). Similarly, consumer confidence remained low, in spite of the recovery following the plunge registered last January (Chart 21c).

Chart 20
Consumption Indicators
Index 2008=100, s. a.

a) Monthly Indicator of Domestic Private Consumption

b) Components of the Monthly Indicator of Domestic Private Consumption

c) Domestic Retail Sales of Light Vehicles and Revenues of Retail Businesses

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from the Mexican Automotive Industry Association (AMIA) and the Monthly Survey of Commercial Establishments (EMEC), INEGI.

Chart 21
Determinants of Consumption

a) Total Real Wage Bill
Index I-2008=100, s. a.

b) Workers' Remittances
Billion, constant USD and MXN,
s. a.

c) Consumer Confidence
Index January 2003=100, s. a.

s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data
from the National Employment Survey
(ENOE), INEGI.

s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the
latter by a dotted line.
1/ Prices as of the second fortnight of December
2010.
Source: Banco de México and INEGI.

s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the
latter by a dotted line.
Source: National Consumer Confidence Survey
(ENCO), INEGI and Banco de México.

On the other hand, over the first two months of 2017 weakness of investment, which had been registered before, accentuated, even indicating an incipient negative trend (Chart 22a). In particular, the imported component of investment in machinery and equipment kept decreasing, while the domestic component slightly decelerated (Chart 22b). As regards construction, the positive trend prevailing in residential construction has been offset by the negative trend in non-residential construction (Chart 22c). In turn, the performance of the latter has been affected by the contraction in public sector construction and by a deceleration in private sector construction relative to the growth rate that was observed in the first half of 2016 (Chart 22d). Specifically, considering construction projects contracted by the private sector, there was a quarterly decrease in the construction of industrial, commercial and service buildings. On the contrary, a positive trend persisted in works related to installations in buildings, such as electromechanical and air-conditioning installations (Chart 22e). Notably, there is a possibility that in late 2016 and in early 2017 private investment in Mexico was at levels below those that would have been observed in the absence of uncertainty related to the protectionist rhetoric of the new U.S. administration (see Box 2).

Chart 22
Investment Indicators
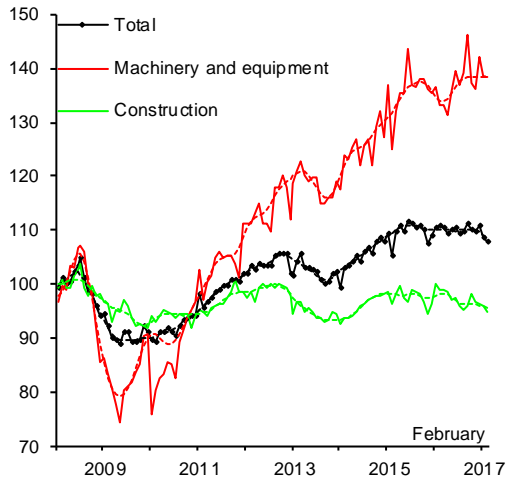
a) Investment and its Components
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is represented
by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

b) Investment in National and Imported
Machinery and Equipment
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

c) Investment in Residential and Non-
residential Construction
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the
latter by a dotted line.
Source: Mexico's National Accounts System, INEGI.

d) Real Value of Production in
Construction by Contracting
Institutional Sector
Index January 2008 = 100, s. a. [1/]

s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the
latter by a dotted line.
1/ Seasonally adjusted by Banco de México, except
for the total.
Source: Prepared by Banco de México with data
from ENEC, INEGI.

e) Real Value of Production in
Construction of the Private Sector
Index January 2008 = 100, s. a. [1/]
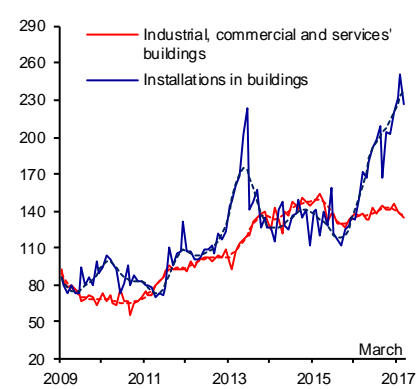
s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the
latter by a dotted line.
1/ Seasonally adjusted by Banco de México.
Source: Prepared by Banco de México with data
from ENEC, INEGI.

Box 2
Analysis of the Recent Performance of Private Investment

1. Introduction

In recent years, the Mexican economy has faced a particularly complex external environment, characterized by weak global economic activity and world trade, along with volatility in international financial markets and lower oil prices. Besides, since the beginning of the U.S. elections and subsequently after their outcome, the latent risk that in the future the U.S. authorities may implement policy measures that would hamper international trade generated an environment of high uncertainty in Mexico, which led to a deterioration in business confidence. This, in turn, seems to have generated less private investment as compared to the level that would have been observed in the absence of the protectionist rhetoric of U.S. authorities. Thus, the uncertainty that has prevailed in recent months seems to have contributed to the weakness in private investment from a medium-term perspective and, in particular, since the second half of 2015.

In this context, this Box presents evidence indicating that uncertainty and the deterioration of the economic outlook negatively affected the recent evolution of private investment in Mexico. To this end, an econometric model was estimated, which controlled for different factors affecting investment decisions.

2. Econometric Model

To explain the recent performance of private investment in Mexico, an error correction model was estimated using data from 1999-I to 2016-IV. This model takes private investment as the independent variable (measured by the gross formation of fixed capital in the private sector) and includes the deterioration level of the business environment as an explanatory variable, while controlling for other factors that can affect investment.

Business agents' and investors' expectations over future economic activity are an important determinant of investment decisions, as they directly affect the assessment of profitability and risks associated to any production project. To carry out the econometric analysis, information from the question of business environment expectations asked in the Survey of Professional Forecasters carried out by Banco de México on a monthly basis was used. Specifically, the quarterly average of the percentage of analysts, who consider that the business environment will worsen over the next six months was employed. This indicator has strongly deteriorated since the second half of 2016 (Chart 1). Even though this deterioration may be related to an array of factors, the observed sharp increase, given the dates over which it took place, seems to be

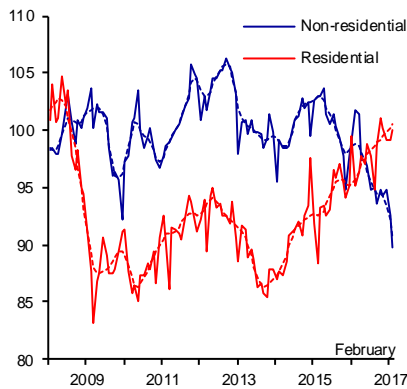related to the process of the U.S. elections and their outcome. Indeed, these events gave rise to great uncertainty over the U.S. – Mexico economic relationship. In this respect, it should be noted that in the same survey, the percentage of analysts that mentioned international political uncertainty as one of the main obstacles for growth shifted from an average of 1 percent in the first quarter of 2016 to 13 percent in the same period of 2017.

Chart 1
Indicator of Business Environment Deterioration [1/]
Data in percent
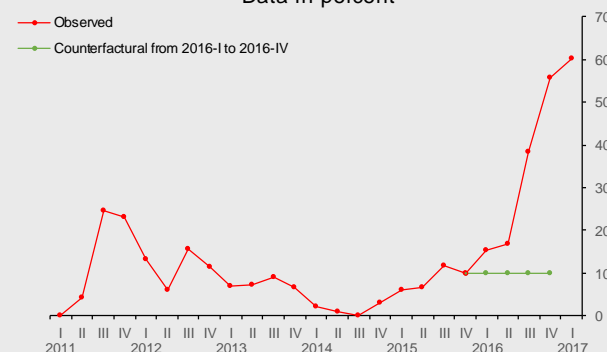
1/ Percentage of analysts who consider that business environment will worsen over the next six months, in line with the Survey of Professional Forecasters carried out by Banco de México.
Source: Prepared by Banco de México with own data.

The cost of capital is another factor that determines investment decisions. The econometric analysis controls for the behavior of cost of capital using a measure of the real ex ante interest rate, based on the annualized yields of 28-day Cetes and the 12-month ahead inflation expectations. Additionally, the econometric analysis controls for the growth of the Gross Domestic Product and public investment. The former, to a certain degree, captures the resources available for investment, while providing signals on the profitability of productive projects. Similarly, public investment also affects private investment decisions, even though its effect is ambiguous from a theoretical point of view. Insofar as public investment contributes to a greater and better infrastructure, its effect on private investment will be complementary. However, lower private investment could also arise as a consequence of a crowding-out effect generated by public investment.

Cointegration tests show that in the long run private investment is positively related to GDP, and negatively to public investment. According to this model, the long-term relation of private investment with GDP and public investment is given by the following equation:[1]

$$IPr_t = \underset{(0.08)}{1.34}Y_t - \underset{(0.05)}{0.11}IPu_t$$

Where:

IPr = Gross formation of fixed capital in the private sector, at 2008 prices;

Y = Real GDP of Mexico, at 2008 prices; and

IPu = Public investment in national accounts, at 2008 prices.

In turn, the short-term relationship is described by the following equation:

$$\Delta IPr_t = \underset{(0.49)}{-1.61} - \underset{(0.06)}{0.27}EC_{t-1} + \underset{(0.07)}{0.35}\Delta IPr_{t-4} + \underset{(0.14)}{1.29}\Delta Y_t$$
$$- \underset{(0.03)}{0.06}\Delta IPu_{t-2} - \underset{(0.03)}{0.06}Conf_{t-1} + \underset{(0.03)}{0.07}Conf_{t-2}$$
$$- \underset{(0.02)}{0.05}Conf_{t-5} - \underset{(0.40)}{1.16}\Delta R_{t-1} - \underset{(0.31)}{0.77}\Delta R_{t-3}$$
$$- \underset{(0.23)}{0.54}\Delta R_{t-5}$$

Where:

EC = Error correction term;

Conf = Indicator of a worsening in the business environment;

R = Real interest rate; and

Δ = Difference operator.

The estimated short-term dynamics suggest that a deterioration in the business environment is related to lower growth of private investment. Thus, the analysis suggests that the loss of confidence could indeed be adversely affecting private investment. In this sense, uncertainty related to the mere possibility that the U.S. implements policies that could hamper its economic relationship with Mexico, even if specific polices have not been put into effect, seems to be already generating real negative effects on the Mexican economy.

3. Counterfactual Exercise

To analyze the extent to which the loss of confidence has affected private investment, this section evaluates a counterfactual scenario of the behavior of the perception of the business environment in Mexico. In particular, it is assumed that the indicator of a business environment worsening remains unchanged from the last quarter of 2015 and until the end of 2016 (Chart 1). The results of this exercise suggest that the annual

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[1]   The model was estimated with the quarterly data without seasonal adjustment in logarithms, except for the case of the interest rate and the indicator of the worsening in the business environment. Standard errors of the coefficients are included in parenthesis. The Johansen trace test suggests that the cointegration relation among variables is significant at conventional significance levels. Equations that describe short-term dynamics satisfy traditional specification tests and diagnostics at conventional significance levels, and include indicator variables that control for outliers.

growth rate of private investment in 2016 would have been 0.56 percentage points higher than the observed rate of 2.21 percent, in the absence of the deterioration of the business environment that was registered throughout that year (Table 1 and Chart 2).

Table 1
Private Investment, s. a.
Results of the dynamic simulation

	Observed annual change	Marginal effect of the counterfactual scenario on the annual growth rate
	Percent	Percentage points
2016	2.21	0.56

s. a. / Seasonally adjusted data.
Source: Estimates by Banco de México.

Chart 2
Private Investment
Indices in real terms 2015-I = 100, s. a.
Dynamic simulations 2016-I to 2016-IV

s. a. / Seasonally adjusted data.
Source: INEGI, National Accounts' System and Banco de México' estimates.
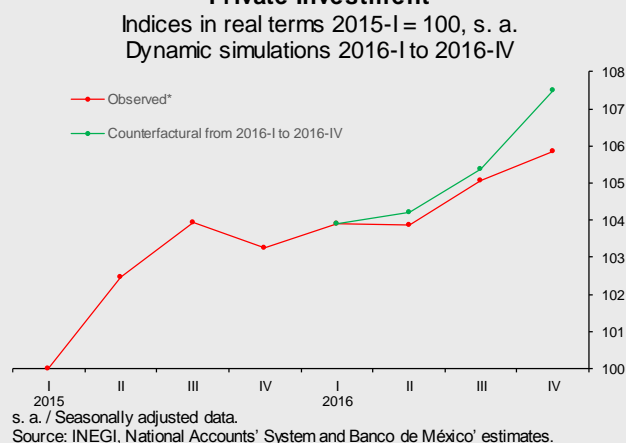
As described in Section 3.2.1 of this Report, private investment kept decelerating at the beginning of the first quarter of 2017. In line with the estimates prepared for this Box, the said weakness can be attributed to the further deterioration in the business climate observed in that period (Chart 1), which, in turn, can be associated to greater uncertainty regarding the U.S. authorities' stance on the future of the North American Free Trade Agreement.

4. Final Remarks

The results of this Box suggest that private investment in Mexico has been affected by the reduced business confidence in light of the uncertainty over the economic policies that may be implemented by the new U.S. administration. Still, from a medium-term perspective, weakness of private investment in Mexico, registered since the 2008 global financial crisis, is worrisome. Furthermore, this weakness has been observed in a context in which public investment over the same period presented a marked decreasing trend. Thus, the continuous growth of the Mexican economy in recent years could be incurring certain imbalances, given that private consumption has been relatively dynamic, while private investment has been registering a prolonged atony. This composition may turn out unsustainable in

the medium run, in particular due to the fact that, if weakness in investment spending persists, the potential growth of Mexico could be negatively affected. Therefore, it is imperative for the country to intensify its efforts to generate the conditions that would allow business confidence to recover and would lead to more investment. In this sense, economic policy actions that strengthen the macroeconomic framework of Mexico

should continue to be adopted and further progress in the modernization efforts of the country by adequately implementing structural reforms should be made. Similarly, it is indispensable to continue strengthening the rule of law, so that corruption and a lack of safety do not become obstacles to greater investment, and, therefore, impediments to the economic development of the country.

As regards the performance of economic activity from the production side, in the first quarter of 2017 GDP grew 0.67 percent with respect to the previous period, based on seasonally adjusted data, after having presented respective quarterly changes of 1.08 and 0.73 percent in the third and the fourth quarters of 2016. In the annual comparison based on seasonally adjusted data, in the period of January – March 2017, the Mexican economic activity presented an annual growth rate of 2.6 percent, after annual increments of 2.0 and 2.3 percent in the third and the fourth quarters of 2016, respectively. Based on non-seasonally adjusted data, in the reference quarter, GDP expanded at an annual rate of 2.8 percent, figure that compares to an annual increase of 2.0 percent in the third quarter and of 2.3 percent in the fourth quarter of 2016 (Chart 23).

Chart 23
Gross Domestic Product

a) Quarterly Change
Percent, s. a.

b) Annual Change
Percent

s. a. / Seasonally adjusted data.
Source: Mexico's National Accounts System, INEGI.
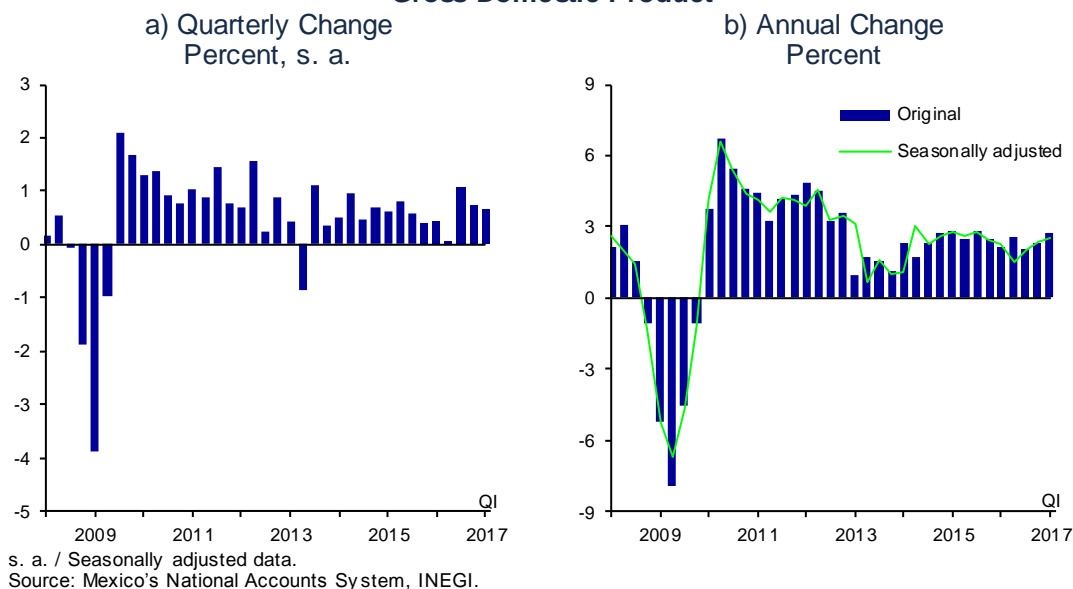
In the first quarter of 2017, GDP growth continued reflecting the dynamism of services, while the secondary activities as a whole kept exhibiting stagnation they had registered since mid-2014 (Chart 24a). In particular, within industrial activity, manufacturing production maintained a positive performance, which was offset by the stagnation in construction, a negative evolution in the electricity sector and a downward trend in mining.

i.   Indeed, in the period being reported, the positive trend in manufacturing production persisted, indicating a recovery with respect to the levels observed in 2015 and the first half of 2016 (Chart 24b). This improvement reflected the positive trends both in the items of transport equipment and in the non-transport manufacturing aggregate, even though the latter contracted in March, largely as a result of drops in the subsectors of chemical industry; beverage and tobacco industry; manufacturing of accessories, electric equipment and power generation equipment; food industry; and machinery and equipment manufacturing (Chart 25).

ii. In contrast, the indicator of spending on construction –which, unlike that reported in the classification of investment in aggregate demand, excludes oil drilling- remained stagnant (Chart 24b). Indeed, the marked positive trend exhibited by the component of specialized works has been offset by a deceleration in construction of buildings; and spending on civil construction works remained low, as a reflection of a lower amount of works contracted by the public sector.

iii. Similarly, a negative quarterly seasonally adjusted change was observed in the electricity, water and gas pipeline supply sector, which has exhibited lower sales of electricity both for residential and for industrial and commercial use (Chart 24b).

iv. Additionally, mining kept contracting, as a result of a lower crude oil production platform, as well as the contraction in oil drilling (Chart 26a and Chart 26b).

Chart 24
Production Indicators
Index 2008=100, s. a.

a) Global Economic Activity Indicator

b) Industrial Activity

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

Chart 25
Manufacturing
Index 2008=100, s. a.
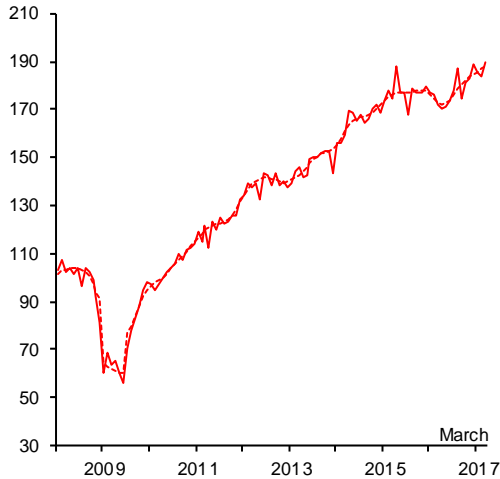
a) Transport Equipment Manufacturing Subsector

b) Manufacturing Sector Excluding Transport Equipment

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.
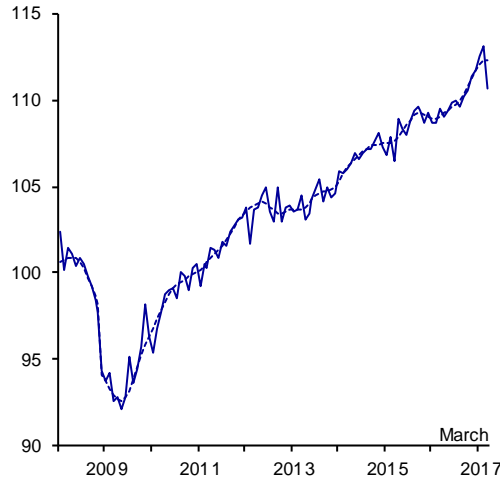
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared and seasonally adjusted by Banco de México with data from the Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

Chart 26
Oil Production Platform and Mining Sector

a) Crude Oil Production Platform
Thousands of barrels per day, s. a.

b) Mining Sector
Index 2008=100, s. a.
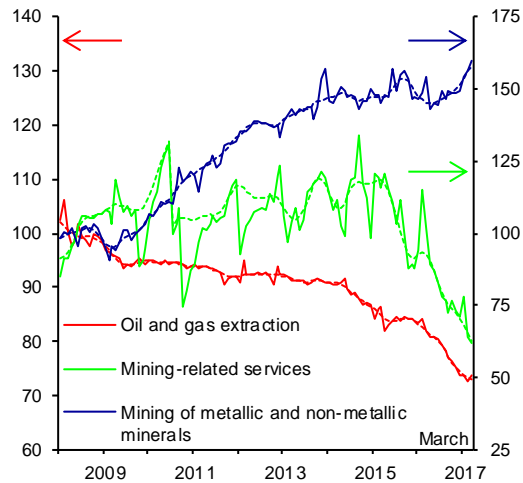
Oil and gas extraction
Mining-related services
Mining of metallic and non-metallic minerals

s. a. / Seasonally adjusted data.
Source: Seasonal adjustment by Banco de México with data from PEMEX Institutional Database.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

v. As regards services, in the period of January – March 2017, they maintained a positive trend, despite a slowdown. In particular, this growth has been principally contributed to by the increment in financial and real estate services, as well as in professional, corporate and business support-related services. Nevertheless, there was a certain moderation in

the growth rate of the commerce component; of the transport and mass media component; and of temporary lodging and food preparation services. Possibly, the latter has been in part affected by a certain deceleration in spending by international tourists (Chart 27).

vi.   The quarterly (seasonally adjusted) expansion of primary activities in the first quarter of 2017 largely derived from an increment in the area sown in the spring – summer and the autumn – winter cycles, as well as from a greater production of some perennial crops, principally cane sugar.

Chart 27
Global Economic Activity Indicator: Services
Index 2008=100, s. a.
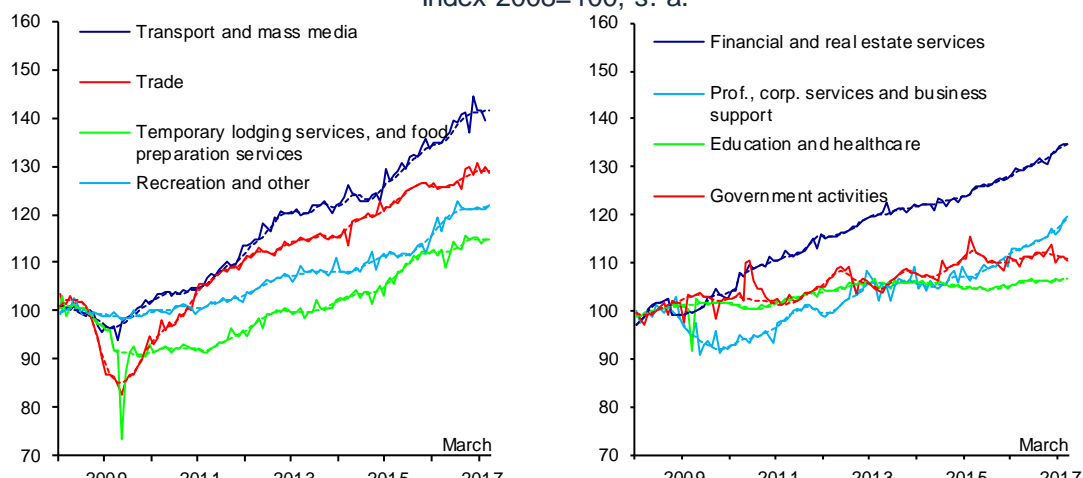
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

With regard to Mexico's external accounts, in the first quarter of 2017, deficit of the current account totaled 2.7 percent of GDP (USD 6.9 billion), a figure that is lower than the 2.8 percent of GDP registered in the first quarter of 2016 (Chart 28b and Chart 28c). It should be taken into account that various components of the current account exhibit seasonality, therefore the comparison to the results reported in the same period of the previous year are especially relevant.[3] In relation to the performance of the current account components, the following stands out:

i.   In the analyzed period, non-oil trade balance presented a surplus, which stood in contrast to the deficit registered in the same period of 2016. Conversely, the oil trade deficit kept growing. Based on these results, in the first quarter of 2017 the total trade deficit added up to USD 2.8 billion, which was below the amount registered in the first quarter of 2016 (USD 4.0 billion; Chart 28a).

ii.   On the other hand, in the first quarter of 2017, deficit in the services' balance increased with respect to the first quarter of 2016. Within it, it stands out that although the surplus of the travel account kept expanding,

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[3]   Through the dissemination of the balance of payment data referent to the first quarter of 2017, Banco de México began releasing these statistics in accordance with the classification criteria of the sixth edition of the Balance of Payments Manual of the IMF.

its growth was insufficient to offset the growing deficit in the rest of the components that comprise the services' balance.

iii.   In January – March 2017, the deficit in the primary income balance increased with respect to the same period of 2016, mainly due to higher net interest payments abroad, while the negative balance from the profits line remained relatively constant.

iv.   Finally, the surplus in the secondary income balance increased in the annual comparison, essentially due to higher income from remittances. Still, it stands out that these decelerated in the first quarter of the year with respect to the levels observed over the previous three quarters.

Chart 28
Trade Balance and Current Account

a) Trade Balance
USD millions

b) Current Account
USD millions

c) Current Account
Share of GDP

Source: SAT, SE, Banco de México, INEGI.
Merchandise Trade Balance. SNIEG.
Information of National Interest.

Source: Banco de México.

Source: Banco de México and INEGI.
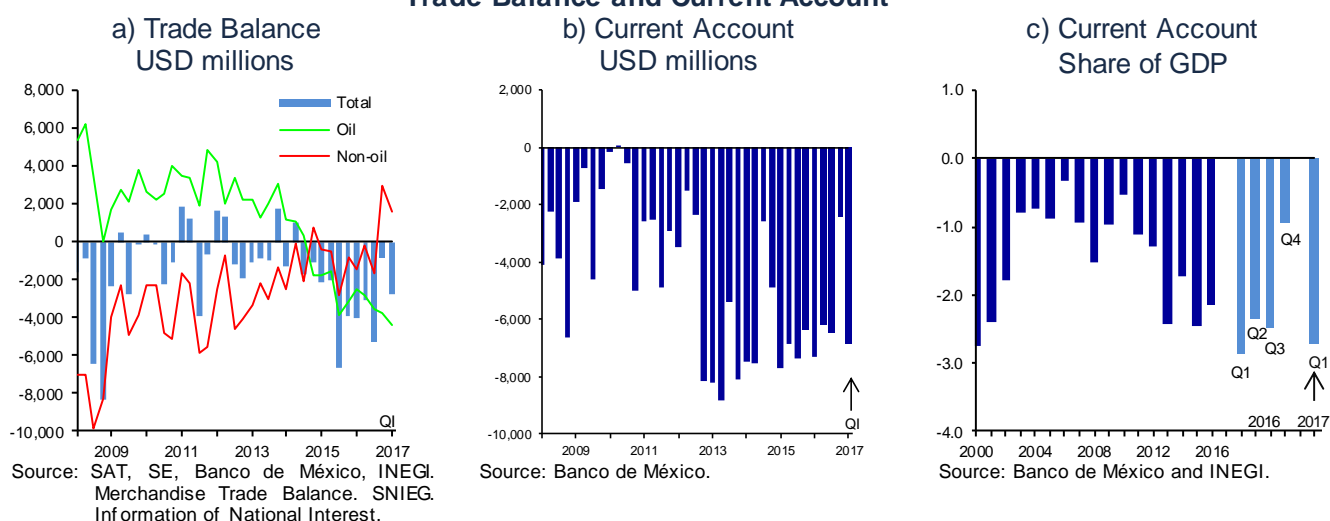
3.2.2.   Labor Market

In the period of January – April 2017, labor market conditions kept tightening, so that, in fact, this market seems to no longer exhibit slack. Indeed, both the national and urban unemployment rates maintained a downward trend and lied below the levels reported in 2008, prior to the onset of the global financial crisis (Chart 29a). The above occurred in a context in which the labor participation rate slightly went up with respect to the last quarter of 2016 (Chart 29b). Thus, there was an increment in the number of employed population. In particular, in the period of January – April 2017, the number of IMSS-affiliated jobs continued growing (Chart 29c). Meanwhile, the labor informality rate has remained at the lowest levels in twelve years (Chart 29d).[4]

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[4]   Currently, the labor informality rate is measured based on the National Employment Survey (ENOE), which started to be carried out in 2005. In this context, in April 2017 this indicator marked the lowest level since the beginning of this survey.

Chart 29
Labor Market Indicators

a) National and Urban Unemployment Rates
Percent, s. a.

b) National Labor Participation Rate [1]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: National Employment Survey (ENOE), INEGI.
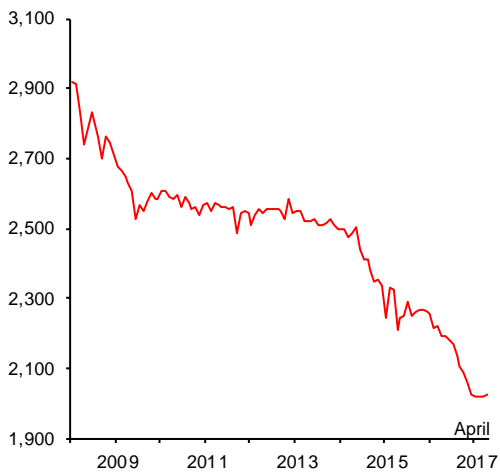
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Percentage of Economically Active Population (EAP) with respect to the population of 15 years and older.
Source: National Employment Survey (ENOE), INEGI.

c) IMSS-insured Workers, Total IGAE and Working Population
Index 2012=100, s. a.

d) Informal Sector Employment [1] and Labor Informality [2]
Percent, s. a.

s. a. / Seasonally adjusted data.
1/ Permanent and temporary jobs in urban areas. Seasonal adjustment by Banco de México.
Source: Prepared by Banco de México with data from IMSS and INEGI (SCNM and ENOE).

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ It refers to individuals working in non-agricultural economic units, operating with no accounting records and with households' resources.
2/ It includes workers who, besides being employed in the informal sector, work without social security protection, and whose services are used by registered economic units, and workers self-employed in subsistence agriculture.
Source: National Employment Survey (ENOE), INEGI.

Despite current conditions in the labor market, no pressures onto wages seem to be observed, given that real average remunerations have declined. In fact, in accordance with various available indicators, in the first quarter of 2017 real

average remunerations registered a contraction, derived the recent performance of inflation. In particular:

i.   The annual growth rate of the average wage of salaried workers in the economy lied at 3.9 percent in the period of January – March 2017 (Chart 30a). However, as stated above, in view of the recent evolution of inflation, an annual decrease of 1.0 percent in real terms has been observed.

ii.   Similarly, in the reference period, even though the daily wage of IMSS-affiliated jobs showed an annual increment of 4.3 percent, which was the largest since the last quarter of 2014, it presented an annual reduction of 0.7 percent in real terms (Chart 30b). In April 2017, these wages exhibited an even larger average expansion, of 4.9 percent. Nonetheless, that implied an annual drop of 0.9 percent in real terms.

iii.   In the first quarter of 2017, the growth rate of contractual wages negotiated by firms under federal jurisdiction was greater than that in the same quarter of 2016 (Chart 30c). This increase is attributed to a greater average increment in wages negotiated by private firms with respect to last year, whereas the average change rate of increments negotiated by public firms was lower than in the first quarter of 2016. Nevertheless, in April 2017, the average change rate of nominal contractual wages of 3.9 percent was lower than the one reported in the same month of 2016, while the inflation evolution during that month generated a negative annual change in real terms.

iv.   The performance of real average remunerations is congruent with the perception of the group of business agents who participated in the Credit Market Conditions Survey in the first quarter of 2017. On the one hand, only 2.0 percent of businesses indicated Labor Force Availability as the most pressing problem they had faced during the first quarter of 2017. On the other hand, prospectively, only 2.2 percent of business agents pointed to an Increment in Wage Costs as one of the factors that would limit growth of economic activity during the next six months.

Chart 30
Wage Indicators
Annual change in percent

a) Average Wage of Salaried Workers according to National Employment Survey [1]
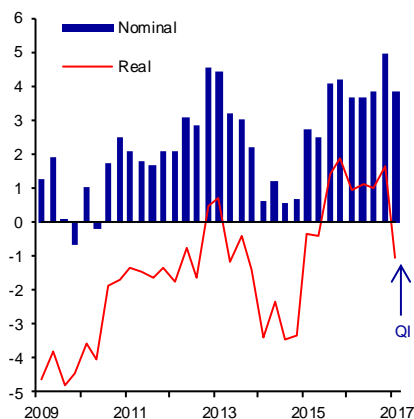
b) Daily Wage of IMSS-insured Workers [2]
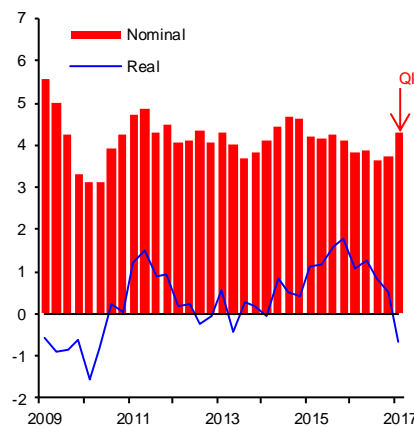
c) Nominal Contractual Wage [3]
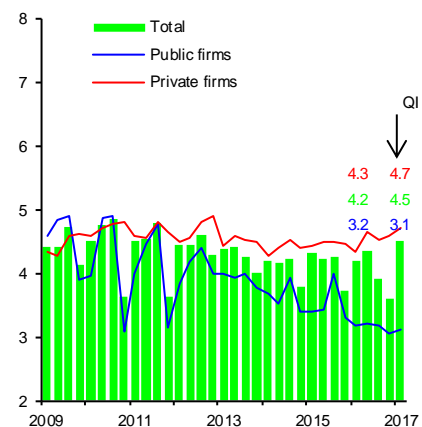
1/ To calculate average nominal wages, the bottom 1 percent and the top 1 percent in the wage distribution were excluded. Individuals with zero reported income or those who did not report it are excluded.
2/ During the first quarter of 2017, on average 18.8 million workers were registered with IMSS.
3/ The contractual wage increase is an average weighted by the number of involved workers. The number of workers in firms under federal jurisdiction that report their wage increases each year to the Secretary of Labor and Social Welfare (STPS) is approximately 2.3 million.
Source: Calculated by Banco de México with data from IMSS, STPS and INEGI (ENOE).

3.2.3.   Financial Saving and Financing in Mexico [5]

In the first quarter of 2017, the sources of financial resources of the economy decelerated with respect to the previous quarter. Indeed, in this period, the real annual change shifted from 4.5 to 1.7 percent, which was the lowest since the first quarter of 2010 (Chart 31a). This reflected lower growth rates both of domestic and external sources, in a context of high uncertainty regarding the direction of the economic policy in advanced economies, particularly in the U.S., and the potential implications for the Mexican economy. Thus, despite the persisting decrease in public sector financial requirements, as a result of the ongoing efforts of fiscal consolidation and given that international reserves slightly declined in the reference quarter, the lower growth of sources of financial resources was reflected in a deceleration of financing to the private sector relative to the previous quarter (Chart 31b).

As regards domestic sources of financial resources of the economy –measured as the monetary aggregate M4 held by residents–, their growth rates declined from 6.5 to 3.7 percent in real annual terms between the fourth quarter of 2016 and the first one of 2017 (Chart 32a). This derived from a lower growth of both the voluntary and the compulsory components (Chart 32b). On the other hand, the real annual change of the external sources was -1.4 percent in the first quarter of 2017, which was lower than 1.6 percent observed in the previous quarter (Chart 31a). Largely, this resulted from a sustained decrease in external resources (both bank and market resources) destined to finance businesses in Mexico. In contrast, it is noteworthy that the stock of the monetary aggregate M4 held by non-residents exhibited a rebound in its growth rate, as it shifted from -3.1 to 0.5 percent between the fourth quarter of 2016

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[5] In this section, unless otherwise stated, growth rates are expressed in real annual terms and are calculated based on balances adjusted due to exchange rate and asset price variations.

and the first one of 2017. This was largely a reflection of an increase in the holdings of medium- and long-term government bonds by non-residents (Chart 32c).

Chart 31
Total Funding of the Mexican Economy (Sources and Uses)
Real annual change in percent [1]

a) Sources

b) Uses

p/ Preliminary data.
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variation.
2/ It includes the monetary aggregate M4 held by residents.
3/ It includes the monetary aggregate M4 held by non-residents, foreign financing for the federal government, public institutions and enterprises, commercial banks' foreign liabilities and external financing to the non-financial private sector.
4/ It is made up by currencies and gold reserves of Banco de México, free of any security rights and the availability of which is not subject to any type of restriction; the position in favor of Mexico with the IMF derived from contributions to the said entity; currency obtained from financing to realize foreign exchange regulation of the IMF and other entities of international financial cooperation or groups of centrals banks, of central banks and other foreign legal entities that act as financial authorities. Currencies pending to be received for sales transactions against the national currency are not considered, and Banco de México's liabilities in currency and gold are deducted, except for those that are for a term longer than 6 months at the moment of reserves' estimation, and those corresponding to financing obtained to carry out the above mentioned foreign exchange regulation. See Article 19 of Banco de México's Law.
5/ It refers to the total portfolio of financial intermediaries, of the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), and of the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste), the issuance of domestic debt and external financing. It includes restructuring programs.
6/ It includes financing to the federal public sector, as well as financing to states and municipalities.
Source: Banco de México.

Chart 32
Monetary Aggregate M4 [1/]
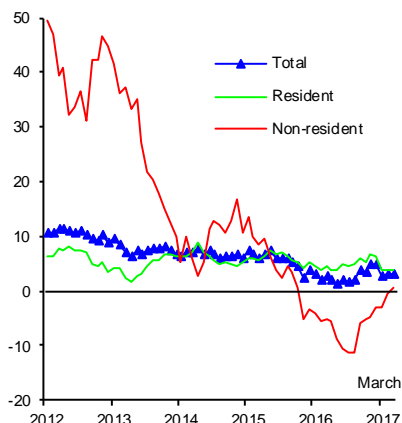
a) Total Real annual change in percent	b) Held by Residents Real annual change in percent	c) Held by Non-residents Contribution to the real annual change in percent
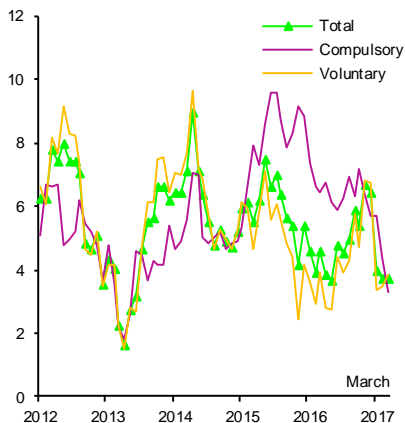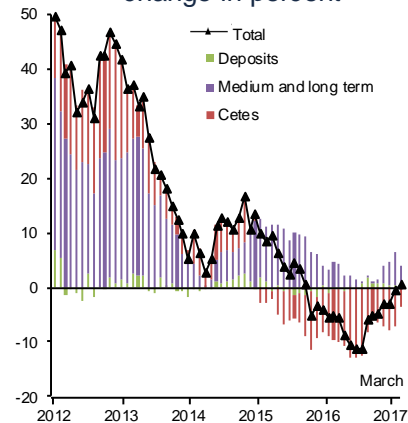
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variations.
Source: Banco de México.

As regards the use of financial resources of the economy, the growth rate of financing to the public sector decreased in the first quarter of 2017. As mentioned above, this reflects the fiscal consolidation effort undertaken by the Federal Government, the presence of excess budgetary revenues and lower public expenditure with respect to the program, besides the delivery of Banco de México's operational surplus of the 2016 fiscal year during the reference quarter, which amounted to MXN 321.7 billion. Thus, the real annual growth rate of financing to the public sector in the first quarter of 2017 was -2.7 percent, which compares to 2.6 percent in the fourth quarter of 2016. It is notable that, even excluding the effect of Banco de México's operational surplus on the historical balance of the Public Sector Borrowing Requirements, financing to the federal public sector would have expanded at a lower rate as compared to that observed during the previous quarter (0.9 percent). On the other hand, in January – March 2017, the stock of international reserves contracted by 6.3 percent in real annual terms, which is compared to a decrease of 3.5 percent in the previous quarter.[6] As detailed in the Quarterly Report October – December 2016, this is due to the direct sale of USD 2 billion to the market, which took place during the first week of January 2017, in line with the instructions given by the Foreign Exchange Commission with the aim of propitiating a more orderly functioning of the foreign exchange market.

In this context, total financing to the non-financial private sector moderated its growth rate in the first quarter of 2017. This indicator expanded at a real annual rate of 1.7 percent in the reference quarter, which is compared to 4.3 percent in the

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[6]　The real annual change of the international reserve in Mexican pesos is obtained with the method of revalued cash flows. It consists in multiplying the absolute annual change in USD by the average exchange rate of the period; adding to this amount the initial balance of international reserves in Mexican pesos, to obtain the final adjusted balance of international reserves in Mexican pesos; deflating both balances in Mexican pesos with the CPI, and, finally, calculate its annual change. Thus, in terms of US dollars, between the first quarter of 2016 and the same quarter of 2017, international reserves diminished by USD 2.8 billion. This figure expressed in Mexican pesos using the average exchange rate in the period equals an annual decrease of MXN 221 billion, which, complemented by the balance of MXN 3,508 billion of international reserves as of the first quarter of 2016 implies a real annual change of -6.3 percent. As a reference, the annual nominal change of the international reserves in US dollars in the period was -1.6 percent.

previous one. This resulted from the above mentioned contraction of external financing, as well as for a lower dynamism of domestic financing –especially, credit to households– (Chart 33a).

Chart 33
Financing to Non-financial Private Sector
Real annual change in percent
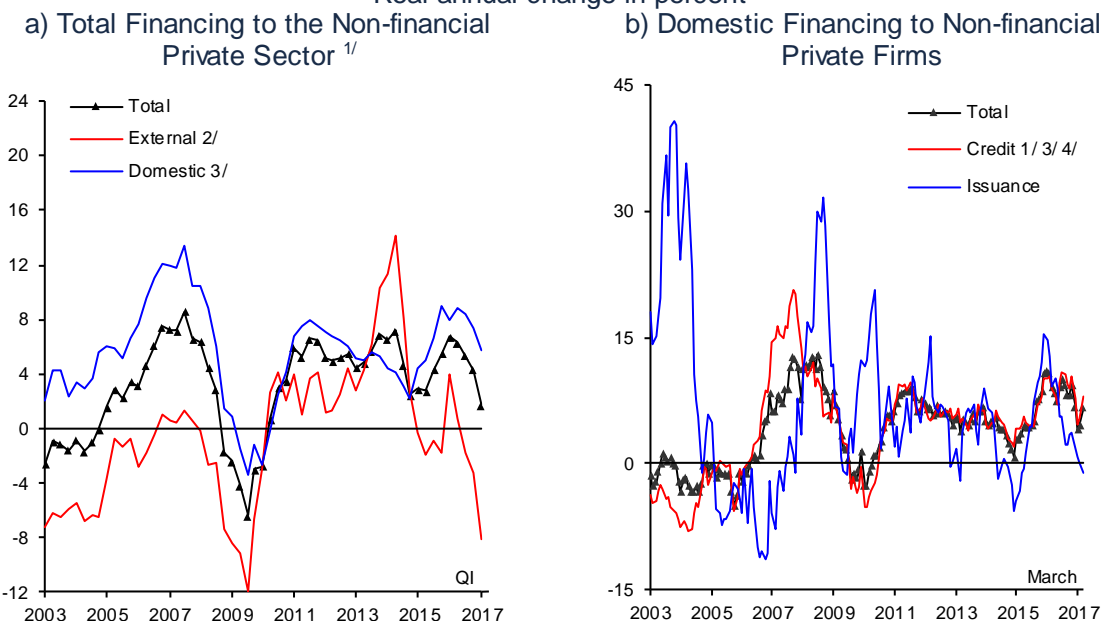
a) Total Financing to the Non-financial Private Sector [1]

b) Domestic Financing to Non-financial Private Firms

1/ Real annual changes are calculated based on balances adjusted due to exchange rate variations.
2/ Data of foreign financing for the first quarter of 2017 are preliminary.
3/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
4/ It refers to the performing and non-performing portfolios, and includes credit from commercial and development banks, as well as other non-bank financial intermediaries.
Source: Banco de México.

Delving in the above, external financing to firms has been contracting for several quarters, as a result of tighter conditions in external markets and an environment of exchange rate volatility. Thus, firms have, to a larger extent, resorted to the domestic market to meet their financing needs, especially to credit granted by commercial banks, while the issuance of debt and credit from development banks presented low dynamism. At the end of the first quarter of 2017, domestic financing to firms exhibited a real annual change of 6.6 percent, which is similar to 6.8 percent observed in December 2016 (Chart 33b and Chart 34). In this context, cost of financing to firms, measured by interest rates of new bank credits and by yield of short- and medium-term private securities, kept increasing, responding to increments in the monetary policy reference rate (Chart 35a and Chart 35b). As regards the quality of the credit portfolio, delinquency rates have persisted at low levels (Chart 35c).

Chart 34
Domestic Financing to Non-financial Private Firms

a) Securities in Circulation
Stocks in MXN billion in March 2016
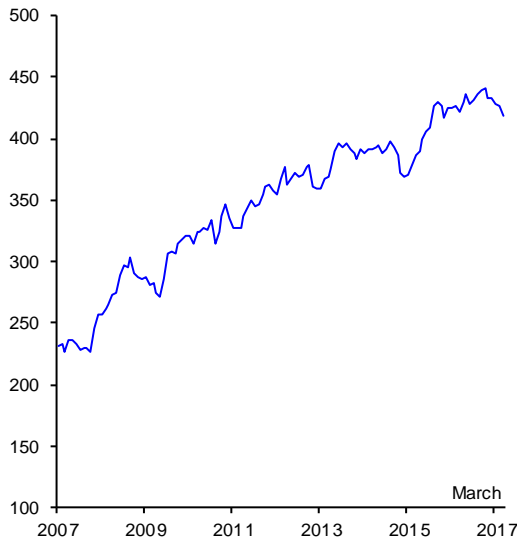
b) Performing Credit [1]
Real annual change in percent
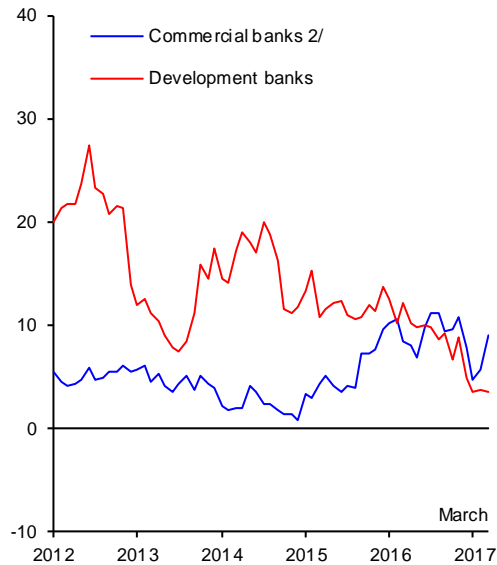
1/ Real annual changes are calculated based on balances adjusted due to exchange rate v ariations.
2/ It includes Sofomes ER subsidiaries of bank institutions and financial groups. Data are adjusted so as not to be affected by the transfer
   of bridge loans.
Source: Banco de México.

Chart 35
Annual Interest Rates and Delinquency Rates of Non-financial Private Firms

a) Annual Interest Rates of Private
Securities
Quarterly average in percent

b) Annual Interest Rates
of New Credits [3]
Annual percent

c) Delinquency Rates
Percent

1/ Av erage weighted y ield to maturity of issuances in circulation, with a term ov er 1 y ear, at the end of the month.
2/ Av erage weighted rate of private debt placements, at a term of up to 1 year, expressed in a 28-day curv e. It only includes stock exchange certif icates.
3/ It ref ers to the interest rate of new bank credits to non-financial private firms, weighted by the associated stock of the performing credit and for all credit terms
   requested. It is presented as a 3-month mov ing av erage.
4/ The delinquency rate is def ined as the stock of non-perf orming loans div ided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio
   plus debt write-off s accumulated ov er the last 12 months.
Source: Banco de México.

Credit to households –both destined to housing and for consumption– continued decelerating, as its real annual change shifted from 8.0 to 5.0 percent between the fourth quarter of 2016 and the first one of 2017 (Chart 36a). As regards housing loans, lower dynamism was observed both in the commercial bank portfolio and the National Housing Fund portfolio –which together constitute over 90 percent of total credit in this segment in Mexico– (Chart 36b).[7] In terms of their costs, in the reported quarter, for the first time over the last five years, increments were observed in the interest rates of new housing loans granted by commercial banks. On the other hand, the corresponding delinquency rates remained low and stable (Chart 36c).

Chart 36
Credit to Households
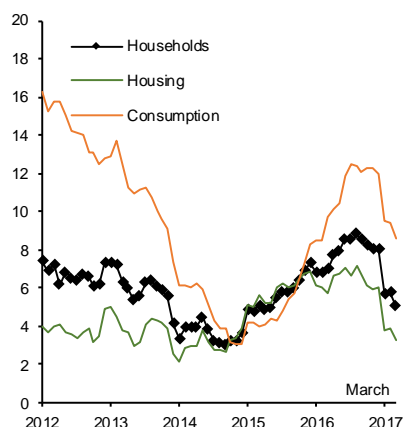
a) Total Credit [1/]
Real annual change in percent

b) Performing Housing Credit
Real annual change in percent
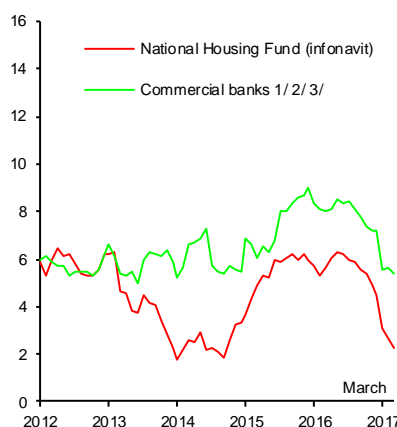
c) Annual Interest Rate of New Credits and Delinquency Rate of the Housing Credit
In percent
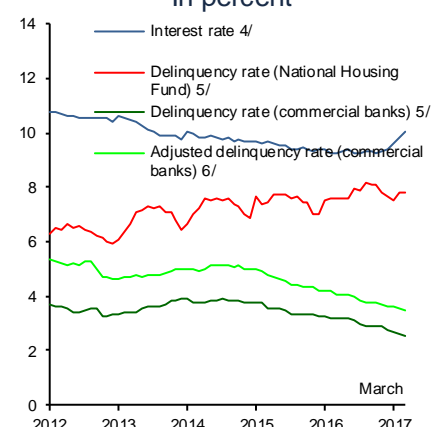
1/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
2/ Includes the Sofomes ER subsidiaries of bank institutions and financial groups.
3/ Figures are adjusted in order to avoid distortions by the transfer and the reclassification of direct credit portfolio, by the transfer from the UDIS trust portfolio to the commercial banks' balance sheet and by the reclassification of direct credit portfolio to ADES program.
4/ The interest rate of new housing credits from commercial banks, weighted by the stock associated to the performing credit. It includes credit for acquisition of new and used housing.
5/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
6/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

Meanwhile, growth rates of consumer credit moderated with respect to the previous quarter, as a reflection of lower growth rates in all its components (Chart 36a and Chart 37a). Interest rates in this segment remained unchanged in the reference quarter, after certain increments registered in the second quarter of 2016, particularly in the credit granted via credit cards. On the other hand, delinquency rates in general prevailed at relatively low levels, even though the adjusted index due to the write-offs accumulated over the last twelve months has increased, reflecting the deterioration in the payroll segment (Chart 37b).

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[7] Commercial banks' housing credit includes that for acquisition of new and used housing, remodeling, payment of mortgage liabilities, credit for liquidity, acquisition of land and construction of own housing.

Chart 37
Commercial Bank Consumer Credit
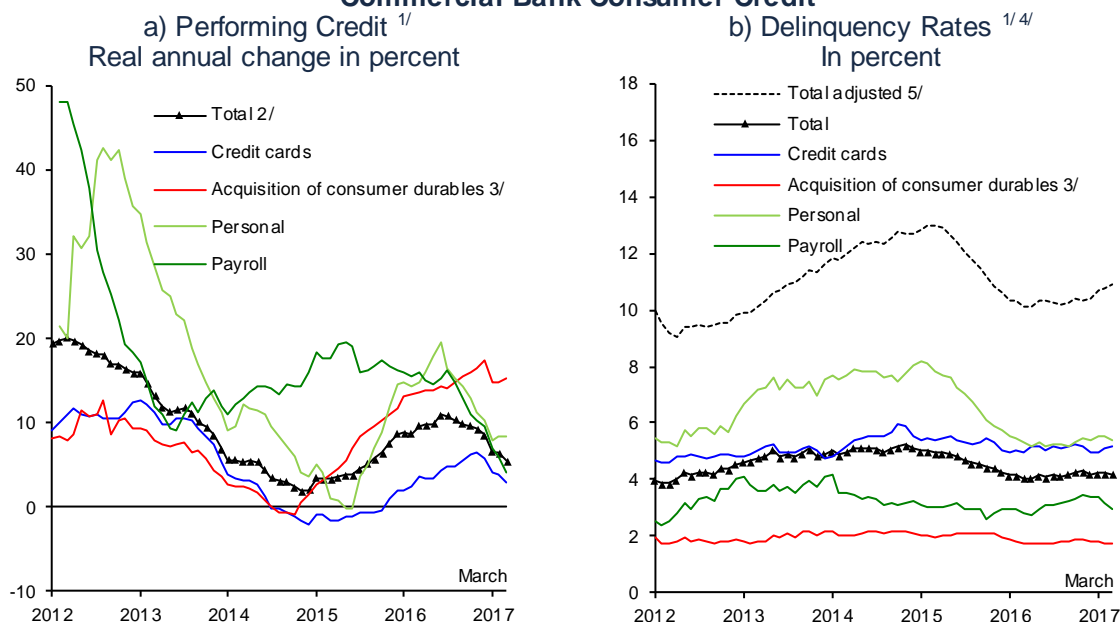
a) Performing Credit [1]
Real annual change in percent

b) Delinquency Rates [1] [4]
In percent

1/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
2/ It includes credit for payable leasing operations and other consumer credits.
3/ It includes auto loans and credit for acquisition of other movable properties.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided
   by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

In this context, and given the recent publication of the document on the compliance with the provisions contained in Article 42, Section I of the Federal Budget and Fiscal Responsibility Law (*Pre-Criterios*) and the outlook on the PSBR in 2017 that is reflected there, it is relevant to prepare a prospective exercise of the sources and uses of financial resources of the economy. The purpose of this exercise is to analyze the possible impact of the evolution of financing to the public sector in the current environment of tight financing conditions and limited sources of financial resources.

The sources of financial resources are expected to display low dynamism in 2017 (Table 2). In particular, their annual flow is estimated to be 6.1 percent of GDP, which is lower than the figure observed in 2016 (6.7 percent) and is also below the average annual flow registered over the previous five years (8.1 percent). As regards the external sources, an annual flow of 1.0 percent of GDP is expected. This low dynamism would reflect a limited availability of resources in view of a possibility of the persisting uncertainty over the direction of the economic and trade policies in the U.S., with the consequent impact on the Mexican economy and financial markets. With respect to domestic sources, an annual flow of 5.0 percent is forecast for 2017, which is congruent with the expected evolution of economic activity for the year.

In contrast, based on the forecasts for PSBR contained in Pre-Criterios 2017, the annual flow of financing to the public sector is forecast to reduce from 2.9 percent of GDP in 2016 to 1.5 percent of GDP in 2017, thus reflecting the fiscal

consolidation effort undertaken by the Federal Government. [8] On the other hand, international reserves are expected to decumulate 0.1 percent of GDP in 2017, which is a figure similar to that observed in 2016. In view of the above, financing to the private sector is estimated to present an annual flow of 2.8 percent of GDP in 2017, which equals the flow observed during the previous year.

In this way, in the current context of tighter financing conditions and given the possibility that the sources of financial resources of the economy will maintain low dynamism, the fiscal consolidation effort of the public sector is fundamental. Besides strengthening the macroeconomic framework of the country, this would allow to limit the pressures on loanable funds' markets, by generating the necessary room to maintain the dynamism of financing to the private sector even in this environment.

Table 2
Total Funding of the Mexican Economy (Sources and Uses)
Percentage of GDP

	Annual flows					
	2012	2013	2014	2015	2016	2017 e/
Total sources	**10.0**	**8.6**	**10.2**	**5.1**	**6.7**	**6.1**
Domestic sources	4.4	4.7	5.8	3.9	5.6	5.0
Foreign sources	5.7	3.8	4.4	1.2	1.1	1.0
Non-resident M4	4.5	1.3	2.3	-0.2	-0.6	0.0
Securities and foreign credit [1]/	1.2	2.5	2.2	1.4	1.7	1.0
Total uses	**10.0**	**8.6**	**10.2**	**5.1**	**6.7**	**6.1**
International reserves [2]/	1.8	1.0	1.3	-1.5	0.0	-0.1
Public sector financing	4.2	4.1	4.8	4.2	2.9	1.5
Public Sector Borrowing Requirements (PSBR) [3]/	3.8	3.7	4.6	4.1	2.9	1.4
States and municipalities	0.0	0.1	0.1	0.0	0.0	0.1
Private sector financing	3.2	3.9	2.5	2.9	2.8	2.8
Households	1.4	1.1	1.1	1.3	1.6	1.4
Firms	1.8	2.8	1.4	1.6	1.2	1.4
Other [4]/	0.9	-0.5	1.7	-0.6	1.0	1.8

Note: Figures may not add up due to rounding. Figures expressed in percent of nominal average annual GDP. The information on (revalued) flows is stripped from the effect of the exchange rate fluctuation.
e/ Estimated data, expressed in percent of nominal average annual GDP estimated by Banco de México.
1/ It includes the external debt of the federal government, public entities and firms, and external PIDIREGAS, external liabilities from commercial banks and financing to the non-financial private sector.
2/ As defined by Banco de México's Law.
3/ From 2010 to 2016, Public Sector Borrowing Requirements (PSBR) correspond to the data published by the Ministry of Finance. The data of 2017 correspond to those published in GCEP 2017 and consider the impact of the use of Banco de México's operational surplus.
4/ It includes capital accounts and results and other assets and liabilities of commercial and development banks, non-bank financial intermediaries, of the National Housing Fund (Infonavit) and Banco de México –including securities placed by this Central Institute for the purposes of monetary regulation, highlighting those related to the sterilization of its operational surplus from the monetary impact-. Likewise, it includes non-monetary liabilities from the Institute for the Protection of Bank Savings (IPAB), as well as the effect of the change in the valuation of public debt instruments, among other concepts.
Source: Banco de México.

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[8] These figures include extraordinary revenues of the Federal Government received in 2016, amounting to 1.2 percent of GDP, and in 2017 to 1.5 percent of GDP, which stemmed from the operational surplus of the 2015 and 2016 fiscal years, respectively.

4.   Monetary Policy and Inflation Determinants

Since mid-2014, the Mexican economy has been facing different shocks, which could imply important consequences for the performance of inflation. In this context, the monetary authority has been acting in a preemptive and timely manner, considering both the transitory nature of the referred shocks and the horizon at which the monetary policy transmission channels operate, and seeking to maintain the anchoring of inflation expectations in the medium and long terms. In particular, in the second half of 2014, there were volatility episodes in international financial markets, in an environment of a major divergence among the monetary policy outlooks of the main advanced economies, as well as significant oil price drops, which was complemented by the outlook that these will remain low, in view of a decrease in observed and expected global growth and supply conditions that featured this energy product's market. This led to a considerable depreciation of the national currency and increased its volatility. As a result of that, during 2015 an important adjustment in relative prices began. However, its effect on annual headline inflation in 2015 was offset by the fading of the effects onto prices generated by 2014 fiscal adjustments, along with lower telecommunication services prices and some energy prices. Thus, even though at the end of 2015 inflation dropped to its historic low of 2.13 percent, the said depreciation of the exchange rate exercised pressure onto inflation and represented a risk to its expectations' anchoring. In this context, after maintaining the Overnight Interbank Interest Rate at 3 percent since June 2014, Banco de México's Board of Governors decided to raise it by 25 basis points to a level of 3.25 percent, in late 2015. This action also considered the 25-basis-point increment in the target range for the reference rate carried out by the Federal Reserve.

During 2016, the external environment faced by the Mexican economy continued worsening. Thus, the exchange rate kept exhibiting high volatility, as well as depreciation episodes, in particular reflecting the progress of the U.S. election process and, in November, in light of its outcome. Despite the absence of demand-related pressures onto prices, core inflation exhibited a gradual upward trajectory, even though it was from low levels, as a consequence of the effect of the real exchange rate depreciation on the relative prices of merchandise with respect to services. On the other hand, in 2016, there was no favorable arithmetic effect of the fading of the shock that took place during the previous year, like in 2015, and price decreases in telecommunication services were lower. Thus, inflation concluded 2016 at 3.36 percent, after persisting below the 3 percent target over most of the year. Furthermore, in late 2016 and in early 2017, supply shocks of a considerable magnitude were registered, which strongly affected inflation, bringing it to the 6.17 percent level in the first fortnight of May. Further depreciation of the Mexican peso in the last months of 2016 is noteworthy, as well as the increment in energy prices, above all gasoline and LP gas, which derived from the process of their liberalization at the beginning of 2017. The latter led to an important deterioration in inflation.

That said, practically all described phenomena that led to an increment in measured inflation are changes in relative prices, that should not imply a sustained and widespread increase in prices, which is, incidentally, the definition of inflation. Precisely to prevent relative price increments from becoming generalized, it is essential for this Central Bank to act in a timely manner, in order to avoid the contamination of the price formation process in the economy, that is, to prevent these increments in relative prices from generating second round effects. Also, as

we know, the monetary policy has a lagged effect on inflation, reason why the Central Bank has to act in a timely manner. Once the shock occurs, it immediately affects the measured inflation and frequently impacts short-term inflation expectations. Now, by virtue of the monetary policy actions, this shock would have a transitory impact on inflation, but the expectations over its future performance in the medium and long terms should not be essentially affected. In fact, this should be procured by a central bank that operates under an inflation-targeting regime.

Banco de México has been adjusting its monetary policy following the above principles. Therefore, from December 2015 to May 2017, it increased its Overnight Interbank Interest Rate by 375 basis points from 3.00 to 6.75 percent, considering the simultaneity, the magnitude and the persistence of shocks in relative prices that affected inflation data (Chart 38). The results obtained so far are in line with the above. Even though the measurements of contemporaneous inflation across different points of time and short-term inflation expectations spiked, this was not the case for medium- and long-term expectations. In fact, the latter two have remained stable at 3.5 percent. This reflects that, given the above described environment, economic agents anticipate that an increment in inflation –even above the upper limit of the variability interval defined by the Board of Governors– will be temporary, expecting that in the second half of the year headline inflation will start to decrease, will locate below the said upper limit in early 2018 and will head toward the 3 percent target over the course of the subsequent months.

Chart 38
Overnight Interbank Interest Rate and Headline Inflation [1/]
Annual percent
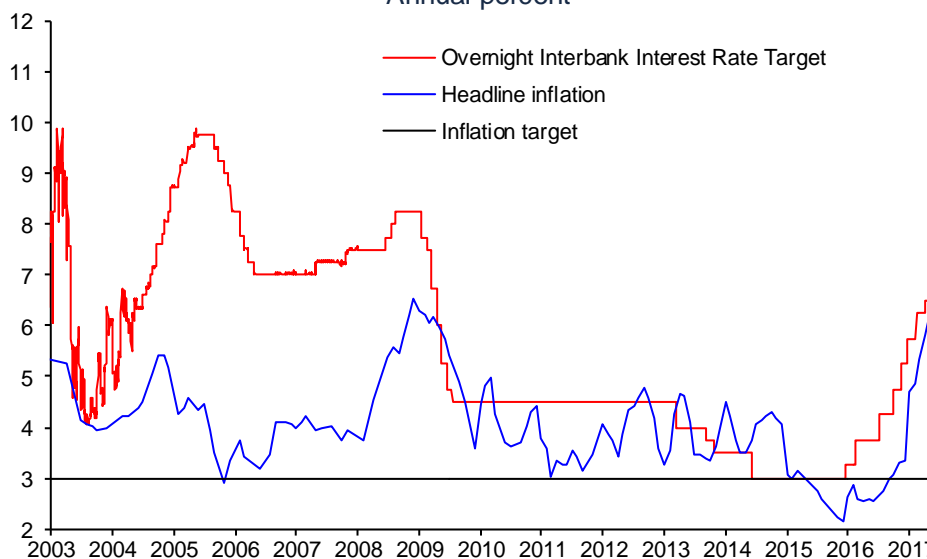
1/ The Overnight Interbank Interest Rate is shown until January 20, 2008. The latest inflation figure corresponds to the first fortnight of May.
Source: Banco de México.

With respect to the period covered by this Report, in its meetings of February 9, March 30 and May 18, 2017, Banco de México's Board of Governors decided to lift the Overnight Interbank Interest Rate by a total of 100 basis points. As noted, these actions sought to prevent the contamination of the price formation process in the economy from the above said shocks, to anchor inflation expectations and to strengthen the monetary policy contribution to the process of inflation convergence

to its target. Besides, the 25-basis-point increment in the target range for the U.S. Federal Reserve reference rate carried out in March was considered. With respect to the decisions of March 30 and May 18, the Board of Governors agreed that, given the prevailing current conditions, the estimation that no aggregate-demand related pressures were expected onto inflation and the increments in the monetary policy rate carried out since 2015, the required adjustment was to amount to 25 basis points.

i.   Among the elements considered to justify the monetary policy decisions made in the first quarter of this year, headline inflation continued rising. In particular, core inflation kept going up in response to the accumulated depreciation of the national currency, the indirect effects due to adjustments in energy prices since the beginning of the year, as well as increments in the minimum wage. All this strongly affected the prices of merchandise and some services. Additionally, non-core inflation kept growing, as a reflection of the effect of the increments registered in energy prices since the beginning of 2017, which was aggravated by the rebound in the prices of some agricultural goods and government approved fares in April 2017, in particular in passenger transport.

ii.   In view of the described shocks and unpleasant surprises in the inflation data with respect to private sector specialists' estimates during the reported period, the median of inflation expectations for the end of 2017, derived from the survey carried out by Banco de México among them, increased notably. On the other hand, inflation expectations for 2018 went up at a much lesser magnitude, which later partially reversed, while longer-term ones remained stable. Thus, the performance of the expectations fundamentally reflects the anticipation of a temporary increment in inflation.

iii.   Given the recent evolution of the economic activity, no significant aggregate-demand related pressures onto the general price level were observed, and, in fact, a certain widening of the negative output gap was anticipated over the following quarters (Chart 39). Despite the above, the labor market no longer seems to exhibit slack. Indeed, the gap between the observed unemployment rate and that congruent with an environment of low and stable inflation is negative and significantly different from zero, while the extended measure of this indicator that includes informal salaried workers is not significantly different from zero (Chart 40a and Chart 40b).[9] The performance of wages and labor productivity during the reference period was reflected in an upward trend in unit labor costs, both for the economy as a whole and for the manufacturing sector in particular, albeit starting from low levels. It should be pointed out that all of the above has not translated into wage pressures, as stated in Section 3.2 (Chart 41).

iv.   The process of the monetary policy normalization in the U.S., which, in accordance with the Federal Reserve, will continue at a gradual rate.

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[9]   For a description of the estimations of slackness in the labor market, see Box "Considerations on the Recent Evolution of NAIRU and Slackness in the Mexican Labor Market", in the Quarterly Report October - December 2016.

Chart 39
Output Gap Estimate [1]
Percentage of potential output, s. a.
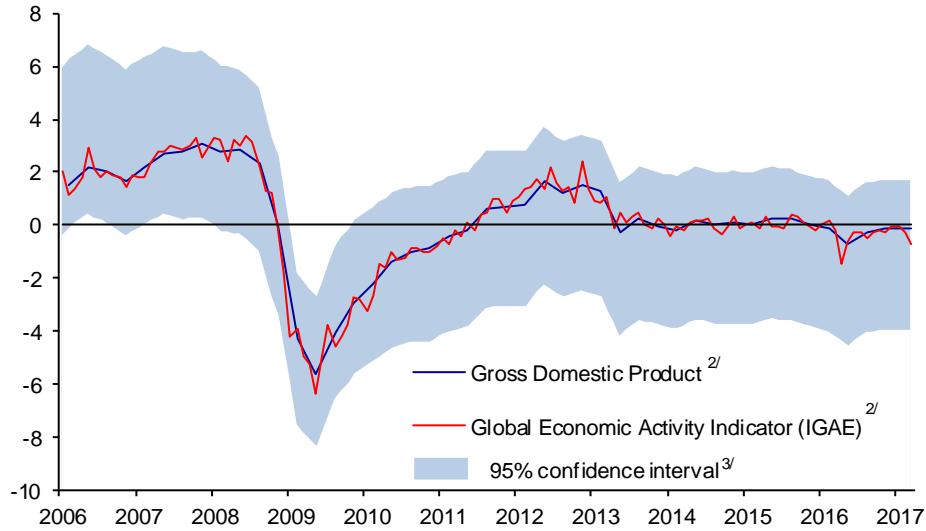
Gross Domestic Product [2]

Global Economic Activity Indicator (IGAE) [2]

95% confidence interval [3]

s. a. / Estimated with seasonally adjusted data.
1/ Estimated using the Hodrick-Prescott (HP) filter with tail correction; see Banco de México Inflation Report, April-June 2009, p.69.
2/ GDP figures as of the first quarter of 2017; IGAE figures as of March 2017.
3/ Confidence interval of the output gap calculated with an unobserved components' method.
Source: Estimated by Banco de México with data from INEGI.

Chart 40
Estimate of the Unemployment Gap
Percent, s. a.
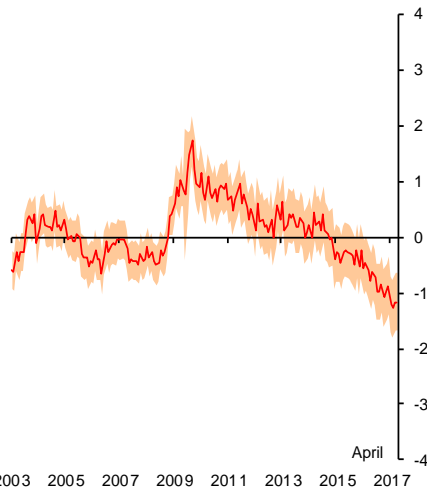
a) Unemployment Rate [1]

b) Unemployment Rate and
Informal Wage Workers [1]

s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval corresponds to two average standard deviations among all estimates.
Source: Banco de México.
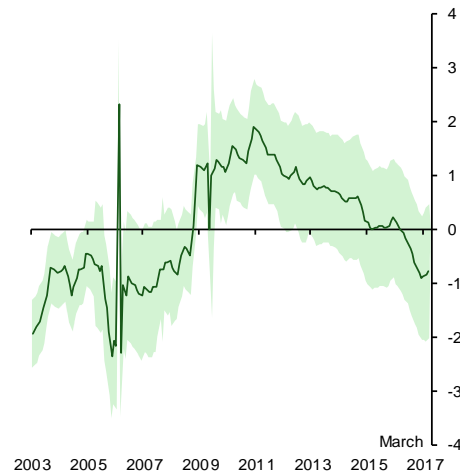
s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval corresponds to two average standard deviations among all estimates.
Source: Banco de México.

Chart 41
Productivity and Unit Labor Cost
Index 2008=100, s. a.
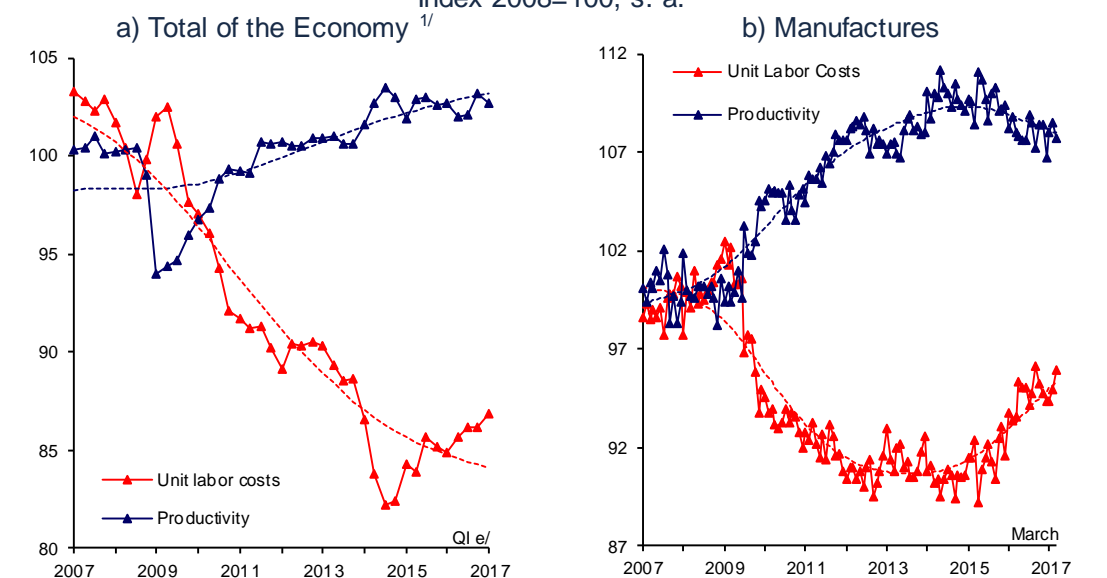
a) Total of the Economy [1/]

b) Manufactures

s. a. / Seasonally adjusted and trend series. The former is
represented with a solid line, the latter, with a dotted line.
Trends estimated by Banco de México
e/ The first quarter of 2017 is the estimation of Banco de México.
1/ Labor productivity based on hours worked.
Source: Unit cost prepared by Banco de México based on data
from INEGI. The Global Index of Labor Productivity in the
Economy (IGPLE), as released by INEGI. Mexico's
System of National Accounts, INEGI.

s. a. / Seasonally adjusted and trend series. The former is
presented with a solid line, the latter, with a dotted line.
Source: Prepared by Banco de México with seasonally adjusted
data from the Monthly Manufacturing Business Survey
and the Monthly Indicator of Industrial Activity of the
Mexico's System of National Accounts, INEGI.

Delving in the performance of inflation expectations based on Banco de México's
survey among private sector specialists, it is notable that their medians for different
terms showed a differentiated performance, which is compatible with the transitory
increase in inflation. In particular, it stands out that between December 2016 and
April 2017:

i.   The median of headline inflation expectations spiked at the end of 2017,
     from 4.1 to 5.7 percent, as a reflection of the above referred inflation
     shocks (Chart 42a).[10] With respect to this evolution it stands out that the
     median for the core component shifted from 3.9 to 4.8 percent, while the
     implicit expectation for the non-core component adjusted from 5.0 to 8.7
     percent.

ii. The median of expectations at the end of 2018 remained below 4 percent,
     despite a certain variability, as it went up from 3.6 to 3.7 percent between
     the referred surveys, after reaching 3.8 percent in the first months of
     2017.[11] Within it, the median for the core component adjusted from 3.5 to
     3.6 percent, while the implicit expectation for the non-core component

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[10]   The median of headline inflation expectation for the end of 2017, based on the Citibanamex survey, went
       up from 4.0 to 5.7 percent between the surveys of December 20, 2016 and May 22, 2017.
[11]   The median of headline inflation expectation for the end of 2018, based on the Citibanamex survey
       increased from 3.6 to 3.7 percent between the surveys of January 20 and May 22, 2017.

went up from 3.9 to 4.0 percent, even though it registered a level up to 4.7 percent in January of that year (Chart 42b).

iii. In relation to the above described performance, it should be noted that by considering the monthly trajectory of the medians of inflation expectations for each one of the next twelve months, it can be observed that, despite the fact that business agents who participated in this survey were surprised when higher-than-expected readings were obtained during the months covered by this Report, the estimated dynamics for the monthly inflations for the period from May 2017 to April 2018 remain without significant changes with respect to the previous surveys (Chart 43a). Thus, the evolution of annual inflation implicit in these expectations still registers a decrease in the last months of 2017, a significant downward adjustment in January 2018, due to the vanishing of the comparison base effect that will impact the measured annual inflation during this year, and exhibits a trend in the same direction over the subsequent months (Chart 43b).

iv. Expectations for longer-term horizons remained anchored around 3.5 percent (Chart 42c).[12]

Chart 42
Inflation Expectations
Percent

a) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2017
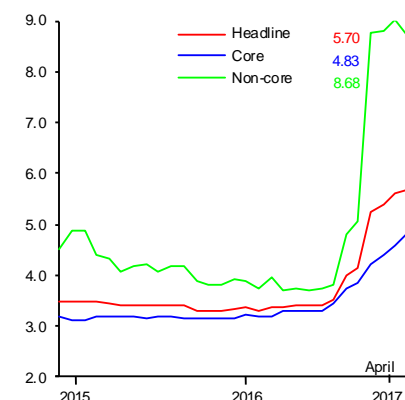
b) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2018

c) Medians of Headline Inflation Expectations for Different Terms
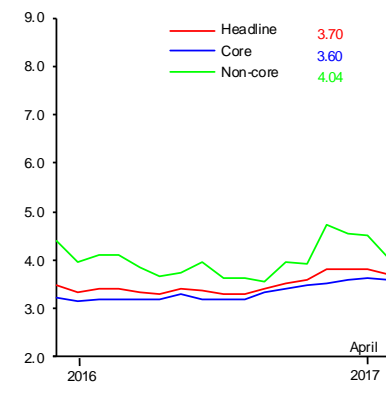
Source: Banco de México's Survey.

Source: Banco de México's Survey.
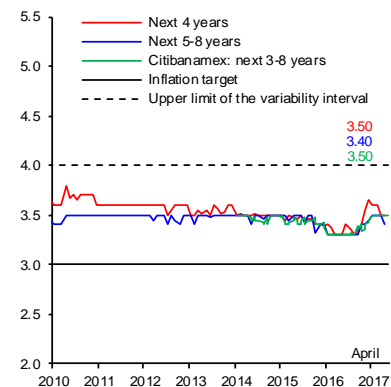
Source: Banco de México's Survey and Citibanamex Survey.

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[12] As regards the median of long-term inflation expectations, based on the Citibanamex survey (for the next 3-8 years), it went up from 3.4 to 3.5 percent between the surveys of December 20, 2016 and May 22, 2017.

Chart 43
Inflation Expectations
Percent
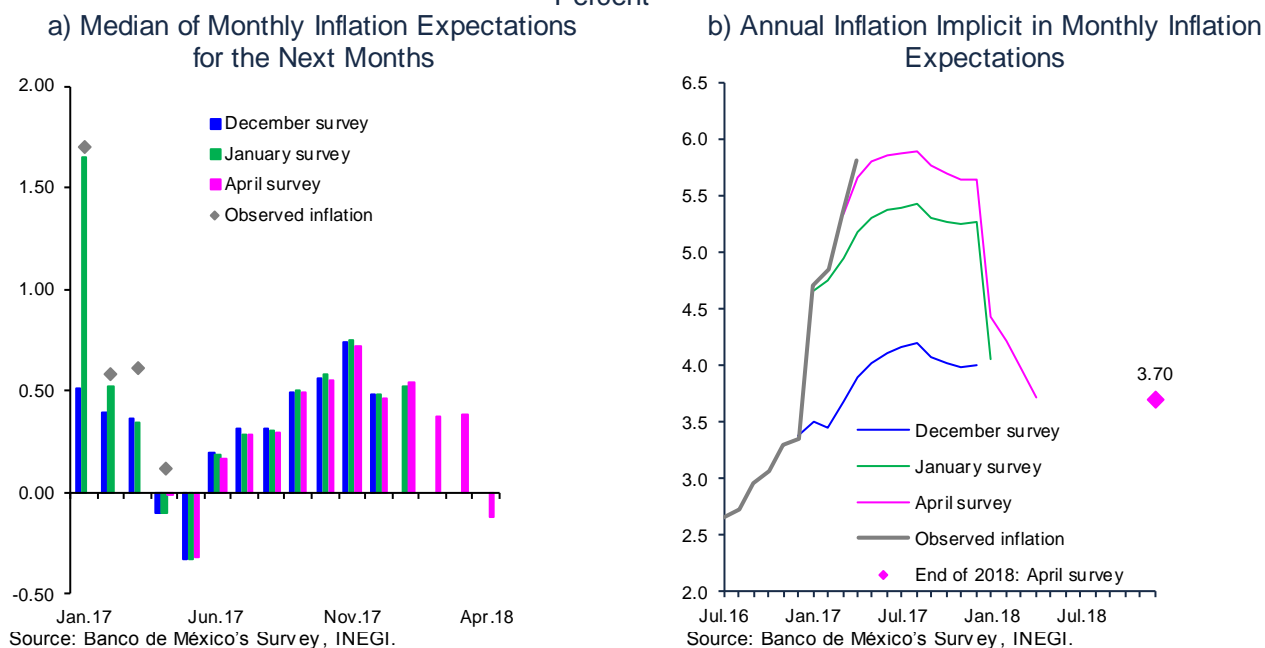
a) Median of Monthly Inflation Expectations for the Next Months

Source: Banco de México's Survey, INEGI.

b) Annual Inflation Implicit in Monthly Inflation Expectations

Source: Banco de México's Survey, INEGI.

As regards the break-even inflation (the difference between long-term nominal and real interest rates), it moderated in the reference period, after increasing considerably at the beginning of the said period (Chart 44a). As regards its components, it stands out that, on the one hand, long-term inflation expectations implicit in market instruments (taken from government instruments with maturities of 10 years) somewhat increased and are still above 3 percent. This principally derived from upward adjustments in shorter-term inflation expectations, as it is shown by the average of the first 1-5 years, which lies at 3.6 percent, in contrast to the average of the next 6-10 years that persists close to 3 percent, at 3.1 percent (Chart 44b). On the other hand, the estimate of the inflation risk premium seems to have dropped from 87 to 25 basis points between December 2016 and April 2017, following a spike in January 2017 (Chart 44c).[13] It should be noted that considering the liquidity spreads between Bonds M and Udibonos, the information provided by the above referred instruments via this estimation has become more uncertain.

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[13] For a description of the estimation of long-term inflation expectations, see Box "Decomposition of the Break-even Inflation" in the Quarterly Report October – December 2013.

Chart 44
Inflation Expectations
Percent

a) Break-even Inflation and Inflation Risk Implicit in Bonds

Source: Estimated by Banco de México with data from Valmer and Bloomberg.

b) Annual Inflation Expectations Implicit in Market Instruments [1/]

1/ The inflation expectation is calculated based on a similar model using data from Bloomberg, PiP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

c) 10-year Inflation Risk Premium [1/]

1/ The inflation risk premium is calculated based on a similar model using data from Bloomberg, PiP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

Despite the decrease in volatility in international markets at the beginning of the first quarter of the year, domestic financial markets were pressured due to the uncertainty over the impact on the Mexican economy generated by trade and migratory policies of the incoming U.S. administration. With that, the quote of the national currency, which started the year around USD/MXN 21.10, reached a new historic maximum of USD/MXN 21.91 on January 11, even marking a maximum intraday level of USD/MXN 22.03. Subsequently, as of the second half of January, and in accordance with lower volatility levels in international markets, domestic asset prices performed more favorably. Indeed, their volatility declined, despite persisting at high levels. In this context, as a reflection of the implemented monetary policy actions and the measures announced by the Foreign Exchange Commission, the national currency appreciated considerably, marking approximately USD/MXN 18.50, thus dropping to its lowest level since the day of the elections in the U.S., and the operating conditions in the exchange market improved (Chart 45a and Chart 45b). The above referred performance has also been contributed to by some constructive comments of the U.S. government members regarding the future bilateral U.S. – Mexico relation. It should be noted that, even though more recently there have been a number of episodes in which a greater risk to the U.S. – Mexico bilateral relation has been perceived, which generated certain exchange rate volatility, the effects on the quote of the Mexican peso against the U.S. dollar derived from the changes in the referred rhetoric by the U.S. authorities seem to have diminished. In this juncture, the expectations for the quote of the Mexican peso at the end of 2017 and in 2018, derived from surveys, decreased considerably. The exchange rate expected at the end of 2017 remains above the levels that are currently observed, of USD/MXN 19.75 (Chart 45a).

Chart 45
Exchange Rate and Implied Volatility

a) Nominal Exchange Rate [1/]
MXN/USD

b) Current Option Implied Volatility [1/]
Percent
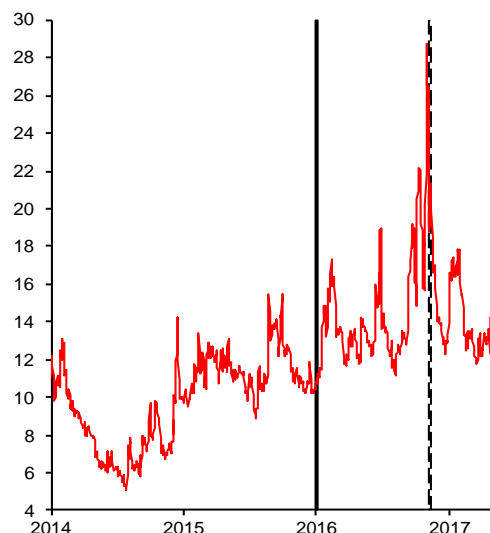
1/ The observed rate is the daily FIX exchange rate. Expectations correspond to the average of the April survey by Banco de México.
Source: Banco de México.

1/ Currency option implied volatility refers to one-month options. The black vertical line indicates January 1, 2016 and the dotted line indicates November 8, 2016.
Source: Bloomberg.

With regard to the measures announced by the Foreign Exchange Commission that are seeking to provide liquidity to the foreign exchange market and to attenuate the above mentioned episodes of exchange rate volatility registered in early 2017, it is relevant to stress that in the first week of January it ordered a direct sale of USD 2 billion to the market. Subsequently, on February 21, the Foreign Exchange Commission announced the implementation of a new foreign exchange market mechanism, which consists in non-deliverable forward (NDF's) auctions, which will be settled in Mexican pesos. The program can size up to USD 20 billion. Accordingly, on March 6, 2017 Banco de México carried out auctions of foreign exchange hedges for a total amount of USD 1 billion, which were distributed along 6 maturities: of 30, 60, 101, 178, 283 and 360 days. Meanwhile, on April 5 and on May 5 and May 8, it renewed total maturities of previously agreed operations for an amount of USD 200 million, in each case. Likewise, the Foreign Exchange Commission indicated that it did not rule out a possibility of additional auctions if required, either through the use of exchange rate hedges or through the instruments that had been used in the past, while it reiterated that anchoring of the national currency's value will be procured at all times, by preserving solid economic fundamentals.

On the other hand, interest rates featured differentiated performance during the reference quarter. In particular, short-term ones increased, reflecting increments in the reference rate, while longer-term ones declined, after having increased during the first half of January. Nevertheless, it is noteworthy that interest rates for all terms remain at levels above those registered prior to the U.S. elections, in early November. Thus, between late December 2016 and mid-May 2017, 3-month and 10-year interest rates shifted from 5.9 to 7.0 percent and from 7.5 to 7.3 percent, respectively (Chart 46a and Chart 46b). As a result of the above described evolution

of interest rates, the slope of the yield curve (measured as the difference between 10-year and 3-month rates) decreased considerably, from 160 to 30 basis points in this interval, possibly reflecting a tighter expected monetary policy stance (Chart 46c).

Chart 46
Interest Rates in Mexico
Percent
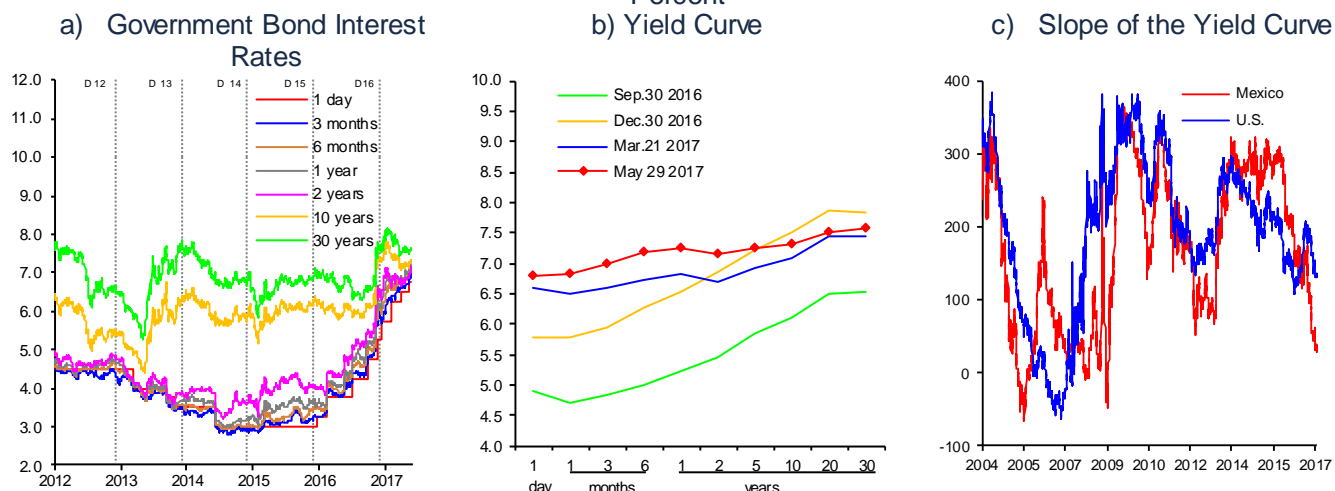
a) Government Bond Interest Rates

b) Yield Curve

c) Slope of the Yield Curve

Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

Consistent with the above performance, and given that short-term interest rates in the U.S. increased to a lower degree, and the decrease of long-term ones was of the same magnitude as the Mexican ones, spreads between Mexican and U.S. interest rates increased in their short-term horizons and remained stable in long-term ones. In particular, from the end of December 2016 to mid-May 2017, the spread of short-term rates (3 months) went up from 540 to 600 basis points, while the 10-year spread persisted around 500 basis points. It should be noted that the level of these spreads (which is higher for short-term ones as compared to long-term rates) points to a differentiation between the monetary policy stances of both countries, given that the increment in the reference interest rate in Mexico has amounted to 375 basis points, while in the U.S. it was 75 basis points (Chart 47). The difference between the relative monetary stances in part responds to the current inflation spreads and those expected in the short term between the two countries. Indeed, in Mexico the most recent estimate of inflation is 6.17 percent, while in the U.S. it lies at 2.20 percent, which represents a 397-basis-point difference. Similarly, inflation expectations for the end of 2017 lie at 5.7 and 2.4 percent in Mexico and the U.S., respectively (a 330-basis-point difference).

Chart 47
Spreads between Mexican and U.S. Interest Rates
Percent
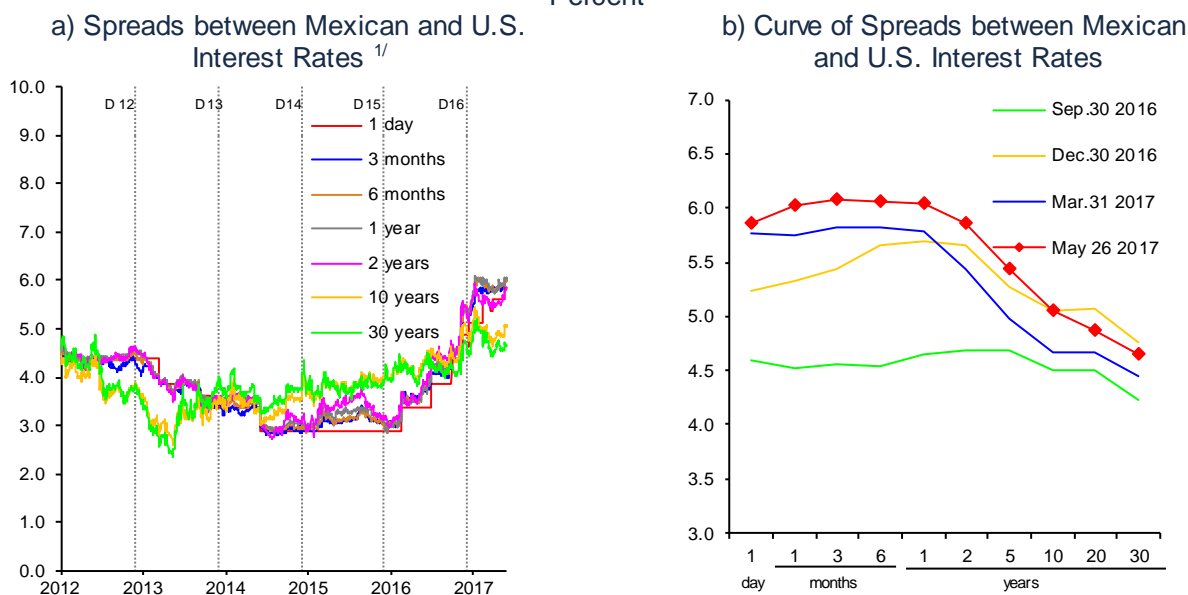
a) Spreads between Mexican and U.S.
Interest Rates [1]

b) Curve of Spreads between Mexican
and U.S. Interest Rates

1/ For the U.S. target rate, an average interval considered by the Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

It is relevant to stress that, even though the current levels of both the slope of the yield curve and the short-term interest rate spread between Mexico and the U.S. reflect a tighter monetary stance in Mexico, adjustments in the reference rate implemented by this Central Institute since the end of 2015 were carried out starting from a historic low of 3 percent. The reference rate reached this minimum level in June 2014 and persisted there for 18 months, until November 2015. In this regard, the 375 basis-point increment in the reference rate, registered from December 2015 to this date, fundamentally constitutes a monetary stimulus withdrawal that prevailed in the previous period, while the current real ex-ante short-term rate appears to be close to the neutral level that is anticipated to prevail in the long run (Chart 48).[14]

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[14] For a description of the estimation of the short-term neutral interest rate, see Box "Considerations on the Evolution of the Neutral Interest Rate in Mexico", in the Quarterly Report, July - September 2016.

Chart 48
Ex ante Short-term Rate and Estimated Ranges for Real Neutral Short-term Rate
in the Short and Long Terms [1]
Annual percent
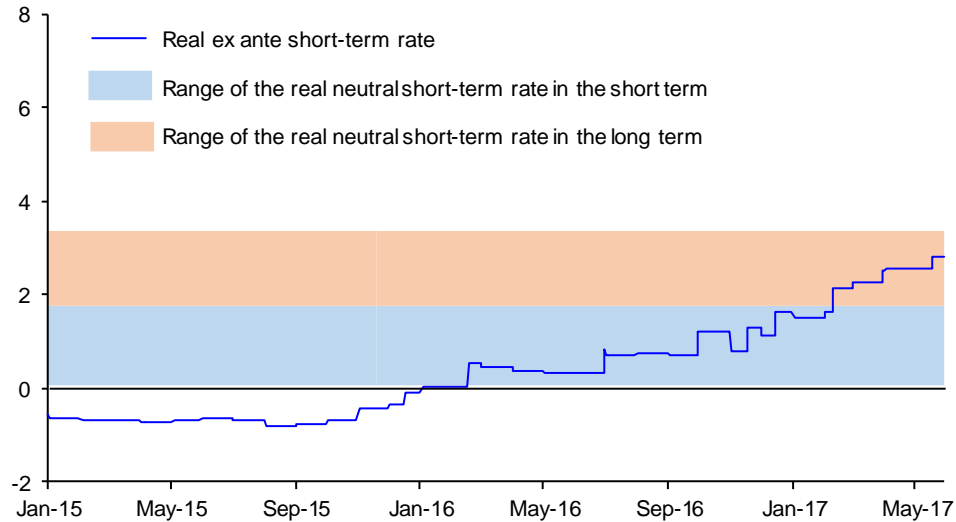
1/ Real ex ante short-term rate is calculated as the difference between the Overnight Interbank Interest rate and the
   median of inflation expectations for the next 12 months, derived from Banco de México's Survey.
Source: Banco de México.

Additionally, as mentioned in Section 3.1, it stands out that market indicators that measure the sovereign credit risk decreased in a generalized manner in the group of emerging economies. In particular, in the case of Mexico, the 5-year Credit Default Swap premium declined by approximately 50 basis points and marked its minimum levels in the last twelve months, after significantly increasing during the fourth quarter of 2016. It should be pointed out that this reduction is greater than that registered for the average of the group of emerging economies.

Despite the better performance in domestic financial markets, the Mexican economy is still facing a complex environment, which makes it especially relevant to continue promoting the adequate implementation of structural reforms and for the authorities to persevere in the strengthening of the country's macroeconomic fundamentals, adjusting the monetary policy stance in a timely manner and consolidating public finances. In this sense, the ratification of the availability of the FCL for Mexico approved by the IMF Executive Board on May 22, 2017 acknowledges the resilience that had been demonstrated by the Mexican economy given the volatility episodes in financial markets and it generates strong incentives to preserve a sound macroeconomic framework.

5.   Inflation Forecasts and Balance of Risks

GDP Growth Rate: Despite the relatively favorable performance of the Mexican economy in the first quarter of 2017, it continues to face a complex international environment derived, among other factors, from the persisting uncertainty over the future trade relationship among the members of the North American region, in particular between Mexico and the U.S. This uncertainty has led to a deterioration in business confidence, which seems to be negatively affecting investment decisions in Mexico. This situation was incorporated in the previous Report's economic growth forecast, which considered certain negative effects on commercial flows and fewer incentives for investing in Mexico, even though they have somewhat attenuated. On the other hand, the slightly higher economic growth in the first quarter of the year relative to what was expected in the previous Report implies a greater expansion of productive activity for 2017 as a whole (Chart 49a). As a consequence, the interval of the GDP growth forecast for 2017 is adjusted upwards from an interval of 1.3 to 2.3 percent in the previous Report to an interval of 1.5 to 2.5 percent. This forecast incorporates a deceleration for the remainder of 2017 with respect to what has been observed in the second half of 2016 and in early 2017, which is congruent with the most recent data pointing to a loss of dynamism in economic activity in the next quarters. As mentioned above, this seems to be partially associated to the effects of the uncertainty over the future economic relationship between Mexico and the U.S. on investment and consumption decisions. However, a certain recovery is still expected in 2018, in line with the expected greater dynamism of U.S. industrial production in the forecast horizon.[15] Additionally, it is anticipated that the ongoing strengthening of the macroeconomic framework by the monetary and fiscal authorities, as well as the implementation of the structural reforms will encourage more favorable conditions for investment and consumption, so that the domestic market will continue contributing to the economic activity. Thus, for 2018, a higher economic growth rate relative to 2017 is still expected, and, so, the forecast interval for the GDP growth is not modified and remains at 1.7 to 2.7 percent. These expectations assume that there is no major disruption in the Mexico – U.S. economic relationship and that adjustments in the financial markets remain orderly. If a different scenario emerges, it would be necessary to adjust these expectations.

Growth expectations do not point to aggregate demand-related pressures onto prices in the forecast horizon. In particular, the expected deceleration could lead to a widening of the negative output gap over the next quarters (Chart 49b).

Employment: Over the first four months of the year, the number of IMSS-affiliated jobs kept presenting a higher-than-anticipated dynamism. For this reason, the forecast for this indicator is adjusted upwards with respect to the previous Report. In particular, for 2017, the number of IMSS-affiliated jobs is now anticipated to increase between 650 and 750 thousand, compared to the previous forecast of between 580 and 680 thousand jobs. For 2018, the forecast for the number of

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[15] According to the business analysts surveyed by Blue Chip in May 2017, industrial production in the U.S. is estimated to grow 1.7 percent in 2017 and 2.4 percent in 2018.

IMSS-affiliated jobs has also been revised upwards, to 640 to 740 thousand jobs from 620 to 720 thousand jobs in the previous Report.

Current Account: Regarding the external accounts, for 2017 respective deficits in the trade balance and the current account of USD 12.8 billion and 24.7 billion are expected (1.2 and 2.3 percent of GDP, in the same order). For 2018, the trade balance and current account deficits are anticipated to amount to USD 12.1 billion and 25.8 billion, respectively (1.1 and 2.3 percent of GDP, in the same order). It is noteworthy that these expectations were prepared based on the new balance of payment figures that follow the methodology of the sixth edition of the IMF's Balance of Payments Manual.[16]

Chart 49
Fan Charts: GDP Growth and Output Gap

a) GDP Growth, s. a.
Annual percent

b) Output Gap Estimate, s. a.
Percentage of potential output

s. a. / Seasonally adjusted data.
Source: INEGI and Banco de México.

s. a. / Seasonally adjusted data.
Source: Banco de México.

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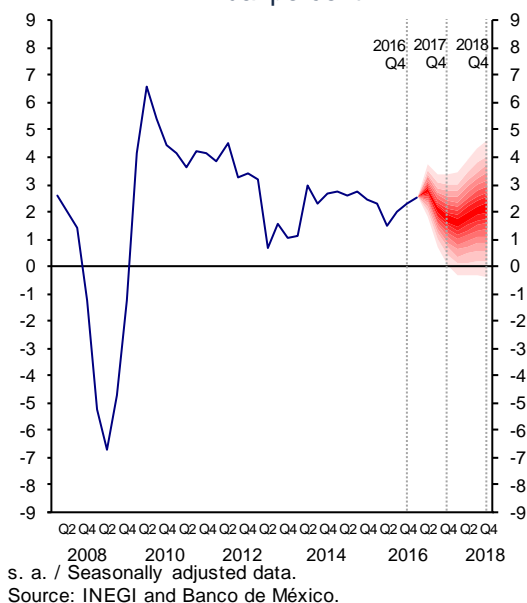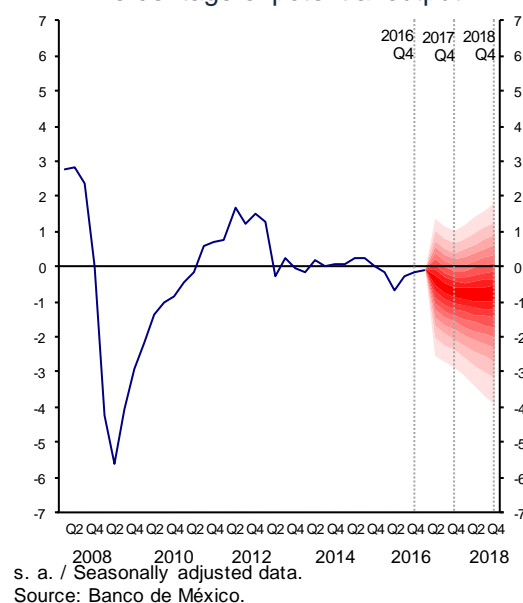
[16] Upon publishing the information of the balance of payments of the first quarter of 2017, these statistics are now released in accordance with the classification criteria of the sixth edition of the IMF's Balance of Payments Manual. Similarly, measurement improvements were implemented, which implied a revision of the historical figures. In particular, the current account deficit in 2016 was adjusted from 2.7 to 2.1 percent as a share of GDP. A note describing the principal modifications to the statistics of the balance of payments can be found on Banco de México's webpage: http://www.banxico.org.mx/documentos/%7b8FA1D7F6-FCEE-7CAD-8DB1-979B1102CD47%7d.pdf.

The Press Release on the information of the balance of payments and statistical tables are available through the following links, respectively:

http://www.banxico.org.mx/informacion-para-la-prensa/comunicados/sector-externo/balanza-de-pagos/index.html and

http://www.banxico.org.mx/SieInternet/consultarDirectorioInternetAction.do?sector=1&accion=consultarDirectorioCuadros

In the forecast horizon the balance of risks for growth remains biased to the downside. Among the downward risks, the following stand out:

i.   That enterprises decide to postpone their investment plans in Mexico in light of uncertainty regarding NAFTA-related policies that could be implemented by the U.S. government.

ii.   That protectionist policies put into effect by the U.S. indeed generate lower-than-anticipated Mexican Exports to the U.S.

iii.   That workers' remittances to Mexico are lower than expected, as a consequence of the policies that hinder them, of increased deportations of fellow citizens, or as a result of lower employment of Mexicans in the U.S.

iv.   The possibility of new episodes of high volatility in international financial markets that could reduce the sources of financing to Mexico.

Among the upward risks to growth, the following are noteworthy:

i.   That the forthcoming negotiation of the NAFTA is a success and allows the countries in the area to exploit new areas of opportunity.

ii.   That the ongoing implementation of the structural reforms renders better-than-expected results.

iii.   That consumption shows a higher-than-anticipated dynamism.

iv.   That workers' remittances to Mexico are higher than estimated, as a consequence of a better performance of economic activity and the labor market in the U.S.

Inflation: Over the following months, annual headline inflation is expected to remain temporarily affected by the increment in passenger transport services' and in some agricultural products' prices, as well as adjustments due to the changes in the relative prices of merchandise with respect to services, derived from the accumulated depreciation of the real exchange rate, and the transitory impact of the rise in energy prices and the minimum wage in January 2017. Hence, in 2017 inflation is estimated to considerably exceed the upper limit of the variability interval set by Banco de México, even though during the last months of 2017 and during 2018 it is anticipated to resume the convergence trend to its 3 percent target and to achieve it by the end of the forecast horizon. In line with this estimation, in 2017 annual core inflation will also persist above the referred interval, but significantly below the trajectory of annual headline inflation, and in late 2017 and in early 2018 it is expected to resume the convergence trend towards the inflation target set by this Central Institute. These trajectories would be the result of a number of factors, among which the following are noteworthy: the fading of the shocks described above, the reversal of the exchange rate over the last months, the expected widening of the negative output gap, and significant adjustments in the monetary policy that have been put into place since December 2015, as well as those that may be required in the future, that will continue affecting the inflation performance over the next quarters (Chart 50 and Chart 51).

These forecasts are subject to risks. Among upward risks, these should be mentioned:

i.   That the number and the magnitude of shocks that have recently occurred may increase the probability of second round effects onto inflation.

ii.   That inflation expectations rise even further, as a consequence of its performance, or if the national currency depreciates abruptly, starting from current levels.

iii.   Increments in agricultural products' prices, even though their impact onto inflation would tend to be transitory.

iv.   Finally, considering that labor market conditions have been tightening, that the upward trend in unit labor costs could start to affect inflation.

Among downward risks, these should be mentioned:

i.   That the recently observed appreciation of the national currency consolidate and deepen.

ii.   That energy prices go down insofar as there are decreases in their international counterparts.

iii.   That the structural reforms lead to reductions in different prices of the economy.

iv.   That the Mexican economic activity grow less than expected, lowering the possibility of aggregate demand-related pressures onto inflation and pressures in the labor market.

Chart 50
Fan Chart: Annual Headline Inflation [1]
Percent
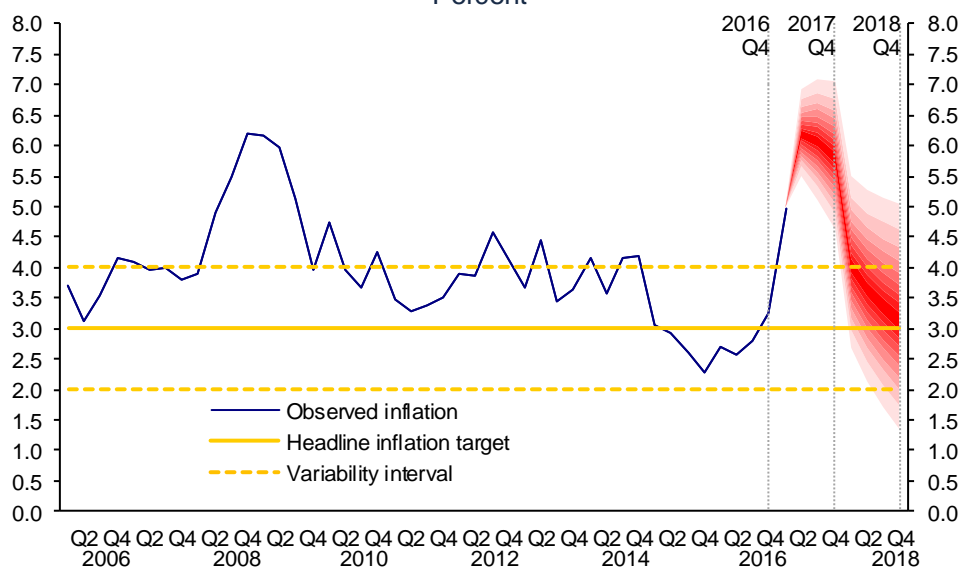
1/ Quarterly average of annual headline inflation.
Source: Banco de México and INEGI.

Chart 51
Fan Chart: Annual Core Inflation [1]
Percent
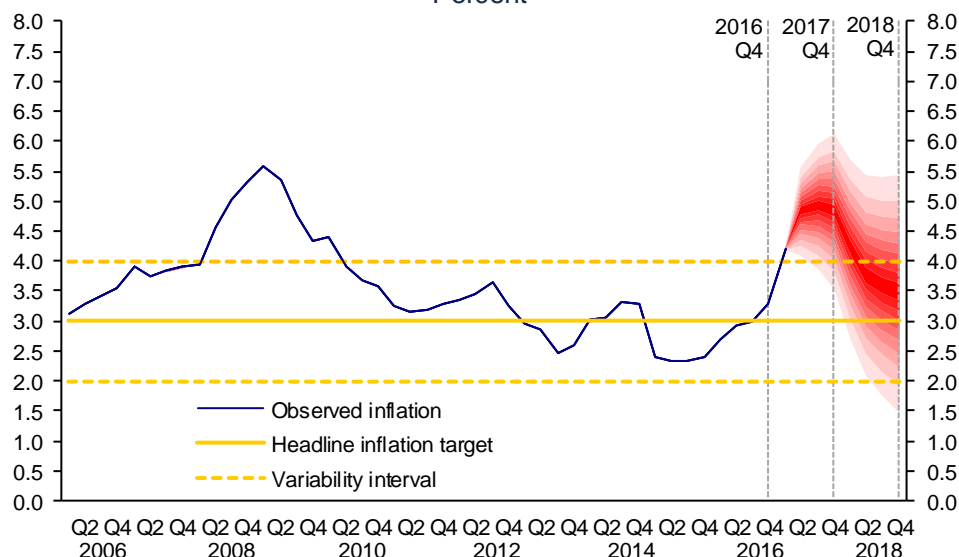
1/ Quarterly average of annual core inflation.
Source: Banco de México and INEGI.

In this context, in the future the Board of Governors will closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially the possible pass-through of exchange rate adjustments and higher energy prices onto the rest of prices. Likewise, it will be watchful of the evolution of Mexico's monetary position relative to the U.S., and that of the output gap. This will be done in order to continue taking the necessary actions to attain the efficient convergence of inflation to its 3.0 percent target.

In an international environment in which the aftermath of the 2008 global financial crisis has given way to a fragile and slow recovery of the global economy and world trade, and has caused a number of volatility episodes in international financial markets, the Mexican economy has been resilient and has continued to expand, although at a moderate rate. From a longer-term perspective, this performance has been the result of the authorities' commitment to maintain a solid macroeconomic framework, and has been complemented by the approval of a package of structural reforms seeking to push ahead with the modernization process of Mexico. As a result, a greater dynamism has been registered in the domestic market, and the Mexican export sector keeps taking advantage of its close integration to the global value chains. However, Mexico should strengthen the fundamentals that have allowed its economy to expand in spite of the adverse international conditions. In the same vein, it should move forward in approving and implementing policies that address the shortcomings of the economy in order to attain a faster and more sustained growth. In particular, doing so would offset the weakness in investment that has been observed since the onset of the global financial crisis and would achieve a more balanced growth, less dependent on the dynamism of consumption. Indeed, giving a major impetus to investment not only favors the cyclical expansion of the economy, but also, more importantly, allows to attain a greater potential growth, greater competitiveness and a faster increase in employment and labor remunerations in a sustained manner. Therefore, commitment to maintain

macroeconomic soundness of the country should prevail. Specifically, it is important to continue implementing the monetary policy in a timely manner and to introduce measures that contribute to the sound functioning of financial markets, thus enhancing the effectiveness of monetary policy. Likewise, it is essential to ensure the implementation of the fiscal consolidation process, and to encourage the reforms. Besides, in order to prevent a lack of safety and corruption from impeding economic growth, as has been mentioned in previous Reports, it is indispensable to strengthen the rule of law and to guarantee legal certainty for all economic agents.

BOXES

Section II: Quarterly Report April - June 2017

1.   Introduction

In recent years the Mexican economy, and in particular inflation, have experienced an array of shocks of considerable magnitude, as a result of which inflation accelerated and reached levels above 6.0 percent in recent months, after having reached a historic low in late 2015. In this context, Banco de México has implemented a timely strategy, taking the necessary measures to contribute to an orderly adjustment in relative prices (derived from the said sequence of shocks), namely that medium- and long-term inflation expectations remain anchored, and thereby provide conditions for inflation to return to its 3.0 percent target. Thus, since December 2015, this Central Institute has raised the target for the Overnight Interbank Interest Rate by 400 basis points, increasing it from 3.0 to 7.0 percent. Hence, Banco de México has been among the central banks that have tightened their monetary policy stance the most in recent years. Considering that adjustments in the monetary policy have a lagged effect on headline inflation, the adopted monetary policy actions have also begun to be reflected in different indicators and components of inflation, which have recently lowered their growth rate and, even, in some cases, presented a certain reversion in their trend. It is important to highlight the considerable appreciation of the national currency against the U.S. dollar over the last months, as it is one of the most important monetary policy transmission channels.

High levels of annual headline inflation during this year reflect the impact of different shocks, such as the depreciation that the national currency has accumulated since late 2014, the effects of the liberalization process of some energy products' prices and the rise in the minimum wage last January. In recent months, headline inflation received an additional impulse, as a consequence of price increments across some non-core index items, such as the increases in public transport fares in Mexico City, as well as some other cities of the country, and, more recently, in the prices of some agricultural products. Despite the upward trend in headline and core inflation during the period analyzed in this Report, which marked 6.59 and 5.02 percent in the first fortnight of August 2017, respectively, its growth rate has started to slow down. Similarly, there has already been a change of trend in the items affected by the initial shocks, such as those corresponding to energy products and non-food merchandise.

Banco de México's Board of Governors increased the monetary policy rate by 25 basis points, both in its decision of May and of June, raising it to 7.0 percent. These decisions principally considered the inflation trend prompted by the referred shocks, no anticipated aggregate demand-related pressures onto inflation, and the 25-basis-point increase in the target range for the U.S. Federal Reserve reference rate. On the other hand, in its August meeting the Board decided to maintain the target for the Overnight Interbank Interest Rate, considering (based on the information available at the time) that the level of the reference rate achieved in the previous decision seemed to be congruent with the convergence of headline inflation to the 3.0 percent target at the end of 2018.

For the remainder of 2017 and for 2018, both advanced and emerging economies are still expected to recover slightly. Nevertheless, this outlook still has downward risks, including high uncertainty over the direction of the U.S. economic policies,

growing geopolitical tensions across different regions, and a possible environment of greater protectionism in international trade.

In advanced economies, in general inflation prevailed below the targets of their respective central banks, due to lower energy prices, absence of wage pressures despite a lower slack in the labor market, as well as, in some cases, price reductions in certain items, the effects of which are considered transitory. This environment of low inflation and reduced wage pressures also seems to be affected, in part, by certain structural factors, such as technological progress and globalization, in light of the moderate growth of global aggregate demand. In this environment, the central banks of the main advanced economies have maintained their accommodative monetary policy stances and the perspective that they will remain lax in the near future prevails, to later come closer slowly to a more neutral stance.

Despite the persistent uncertainty regarding the economic policy and the increasing geopolitical risks, international financial markets showed a sharp decline in their volatility levels and an increase in asset prices with respect to the first quarter of 2017. In other words, they benefitted from a greater global growth, from an environment of ample liquidity and the prospect of interest rates remaining low, which has been reflected in a continuous search for higher yields, mainly by institutional investors. Despite the fact that probability of extreme or tail risks that could affect the performance of financial markets reduced during the second quarter, it remains high. In this context, a disorderly adjustment in financial markets cannot be ruled out, given high valuations of multiple assets and risks associated to a greater-than-expected tightening in global financial conditions, to the process of monetary policy normalization in the U.S., to recent geopolitical risks, as well as the possibility that barriers to international trade and investment are implemented.

In the same vein, conditions in domestic financial markets kept improving in the reported period. The volatility of the quote of the Mexican peso against the U.S. dollar decreased and the national currency further appreciated, as it resumed levels that had not been observed since May 2016. This largely reflects the monetary policy actions adopted by Banco de México, along with a more positive international financial environment and a relative improvement in the perception of the future bilateral Mexico – U.S. relation. As regards the end of the previous quarter, short-term interest rates went up in accordance with the monetary policy actions, while medium- and long-term ones declined given the anchoring of medium- and long-term inflation expectations in Mexico, the corresponding reduction in the inflation risk premium, the decrease in long-term rates in the U.S. and the environment of higher risk appetite. As a result, the slope of the yield curve continued declining. Consistent with the above, interest rates spreads between Mexico and U.S. keep observing considerable increments for short-term horizons and reductions for medium- and long-term ones.

Regarding the domestic economy, in the second quarter of 2017 productive activity kept expanding, even though its growth rate was slightly lower than that observed in the previous quarter. This reflected the positive trajectory of exports and private consumption, while the weakness of investment persisted. In this context, no significant aggregate demand-related pressures onto prices have been recorded. Furthermore, even though labor market conditions kept suggesting no slack in that

market, no wage pressures that could affect the inflation process have been perceived.

The outlook for economic growth in Mexico appears to have improved with respect to the perception that prevailed at the release of the previous Report. World economic activity and global trade have recovered more noticeably, and the domestic market has proven to be resilient. Productive activity in the second quarter of 2017 even decelerated slightly less than anticipated in the last Report. Furthermore, with respect to the bilateral Mexico – U.S. relation, the most recent data point to a lower probability of scenarios that could affect growth to a greater degree, despite the persistent uncertainty over this relation. As a consequence, and considering the greater amount of available information, the forecast interval for GDP growth in Mexico in 2017 is adjusted from one between 1.5 and 2.5 percent published in the previous Report to one between 2.0 and 2.5 percent in the current one. Likewise, the interval for GDP growth in 2018 is adjusted upwards from one between 1.7 and 2.7 percent released in the previous Report to one between 2.0 and 3.0 percent. In this way, just as in the previous Report, the growth rate of the Mexican economy in 2018 is expected to be greater than in 2017. This estimated trajectory responds to the expectation that in the forecast horizon the reactivation of U.S. industrial production will consolidate, that some structural reforms will have more noticeable effects on growth, and that an environment that grants greater confidence for private investment will prevail, derived from the country's macroeconomic strengthening and from conditions more conducive to international trade.

Thus, it can be concluded that the Mexican economy and domestic financial markets have been resilient to the shocks that have affected them. The strengthening of the macroeconomic fundamentals over the last almost two decades, in which curbing inflation is noteworthy, has been a necessary condition for this. However, it is important to keep in mind that the economy is still facing a highly complex environment, in particular, due to the possible tightening of global financial conditions, the evolution of the NAFTA negotiations and the electoral process in 2018. In this environment, it is particularly relevant for the authorities to persevere in maintaining strong macroeconomic fundamentals. In particular, it is important for the fiscal and monetary policies to continue contributing to propitiate an orderly adjustment in the economy and financial markets. In this sense, the Federal Government's commitment to obtain a primary surplus of 0.4 percent of GDP in 2017 (excluding Banco de México's operational surplus) is noteworthy. The referred surplus would be the first on record since 2008. Furthermore, for 2018 the Federal Government reiterated its commitment to fiscal consolidation, as it suggested a surplus in the primary balance amounting to 1.0 percent of GDP.[17] Progress achieved in the implementation of structural reforms, in particular the energy and telecommunications' reforms, should also be highlighted. In recognition of the above factors, some rating agencies revised Mexico's sovereign debt credit outlook up to stable from negative.

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[17] Figure for 2017 is taken from Reports on Economic Activity, Public Finances and Public Debt of the Second Quarter of 2017. Figure for 2018 is taken from the Document concerning the compliance with the provisions of Article 42, Fraction I of the LFPRH, also known as General Economic Policy Preliminary Guidelines (*Pre-Criterios*). Both documents have been published by the Ministry of Finance.

Over the years, Banco de México has been making an effort to continue improving its communication strategy with the public. Therefore, starting from this Quarterly Report, fan charts will include the trajectory of the central outlook of inflation and economic activity, which is compared to the central forecast included in the previous Quarterly Report. The Board of Governors considers that this modification will contribute to reinforce the role of this Central Bank in the formation of expectations, at the same time further reinforcing the channel of inflation expectations in the monetary policy transmission mechanism. This will allow to explain the forecasts to the public in more detail, along with risks associated to the said forecasts and their possible updates.

Although in line with the central outlook for the next months, annual headline inflation is expected to persist over 6.0 percent, it seems to be approaching its ceiling. In fact, it is estimated that during the last months of this year annual headline inflation will resume its downside trend and that it will be accentuated during 2018, leading to the convergence to the 3.0 percent inflation target around the third quarter of 2018. Annual core inflation is anticipated to remain above 4.0 percent in 2017, even though significantly below the trajectory of annual headline inflation, and that in late 2017 and early 2018 it will resume a trajectory of convergence to the inflation target, reaching levels close to 3.0 percent at the end of that year. These forecasts consider the monetary policy adjustments that have been implemented since December 2015 up until now and that will continue affecting the inflation performance over the next quarters. Similarly, they consider that in January 2018 the fading of the base effect generated by higher prices of various energy products at the beginning of 2017 will considerably affect annual inflation, and a downside inflation trajectory will be observed over the following months as a result of a strong appreciation of the national currency. This will take place in an environment in which no aggregate demand-related pressures onto prices are anticipated. These forecasts assume that if any volatility event occurs in domestic financial markets, it will be transitory.

Going forward, the Board of Governors will closely follow the evolution of all inflation determinants and its medium- and long-term expectations, especially the potential pass-through of exchange rate adjustments onto prices, as well as the evolution of the output gap. Likewise, it will assess the monetary stance of Mexico relative to the U.S. In any event, due to a number of still persisting risks, the Board will be watchful to ensure that a prudent monetary stance prevails, so that the anchoring of medium- and long-term inflation expectations is strengthened and its convergence to the target is attained.

2.   Recent Evolution of Inflation

2.1.   Inflation

2.1.   Inflation

The levels of annual headline inflation this year reflect the impact of different shocks. Among these, the depreciation of the MXN-USD exchange rate, accumulated since the end of 2014, is noteworthy (see Box 1), as well as the effects of the price liberalization process of energy products, in particular gasoline and LP gas prices, and the minimum wage increase in January 2017. In recent months, headline inflation faced new upward pressures, due to the increments in passenger transport fares in some cities of Mexico, and, more recently, due to higher prices of some agricultural products. Thus, although in the period analyzed in this Report headline and core inflation maintained an upward trajectory, locating at 6.59 and 5.02 percent in the first fortnight of August 2017, respectively, their growth rate started to slow down. In this sense, various indicators for different subindices of the Consumer Price Index, such as the monthly seasonally adjusted changes and trimmed means, among others, already suggest a change of trend. In the same way, turning points have also been observed in the items affected by the initial shocks, such as energy products and non-food merchandise. Even if tomatoes, the prices of which were adjusted upwards in recent months, were excluded from the CPI, annual headline inflation would mark 6.17 and 6.23 percent in July and the first quarter of August, respectively. Likewise, if tomato, potato and green tomato were excluded, annual headline inflation in July and the first fortnight of August would be 6.08 and 6.10 percent, respectively, which would be lower than the figure that would be observed in June, if the same estimation was realized in that month. It should be noted that the key role in the above was played by the monetary policy actions implemented by Banco de México, which prevented the second round effects on the price formation process of the economy, at the same time supporting the appreciation of the national currency. Meanwhile, the said appreciation has been lowering pressure on core inflation. In addition, in the non-core component, lower prices of energy products, which derived from the favorable evolution of their international references, along with the exchange rate dynamics, have helped to partly offset the effect of price increments in agricultural products.

Delving in the performance of annual headline inflation, it shifted from an average of 4.98 percent in the first quarter of 2017 to 6.10 percent in the second one, and registered, as stated above, 6.59 percent in the first fortnight of August. On the other hand, average annual core inflation went up from 4.19 to 4.78 percent in the mentioned quarters, locating at 5.02 percent in the first fortnight of August, while annual non-core inflation shifted from 7.38 to 10.31 percent during the referred quarters and marked 11.60 percent in the first fortnight of August (Table 1 and Chart 1).

Box 3
Evolution of the Exchange Rate Pass-through onto Inflation

1. Introduction

The real exchange rate is one of the main and most efficient adjustment variables in an open economy, such as the Mexican one. In particular, in view of shocks that tend to affect the country's external accounts, adjustments in the real exchange rate lead to changes in the relative prices of tradable goods and services as compared to non-tradable ones, which, in turn, lead to adjustments in the structure of spending and production in the economy, and therefore mitigate the effects of these shocks on the economic activity. Indeed, in light of considerable external shocks that had affected the Mexican economy in recent years, the Mexican peso accumulated a depreciation against the U.S. dollar amounting to over 64 percent in nominal terms and approximately 52 percent in real terms from July 2014 to January 2017 –the month in which it attained its highest level– this depreciation episode being the most important over the last 20 years. However, it is noteworthy that from January to July 2017, the nominal exchange rate appreciated by around 16.5 percent and the real exchange rate did so by 17 percent (see Chart 1).

Chart 1
Nominal and Real Exchange Rate
MXN/USD, index June-01
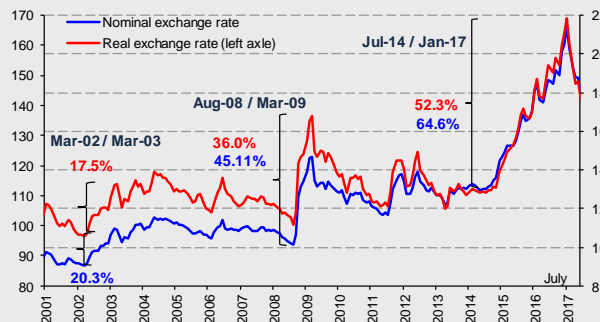
Source: Banco de México.

In this environment, the main contribution of Banco de México, given its mandate, is to contribute to an orderly adjustment in relative prices derived from this process. In particular, by means of its monetary policy actions, this Central Institute has sought to prevent this adjustment from deanchoring inflation expectations, thus averting

second round effects from negatively affecting the price formation process of the economy. In this sense, it should be underlined that the structural achievements in curbing inflation, which Mexico has gained over the last two decades, have considerably contributed to lower the pass-through of the exchange rate depreciation onto inflation.[1] This, in turn, is relevant for the conduct of monetary policy, as the fact that exchange rate fluctuations affect inflation to a lower degree grants the Central Bank more degrees of freedom to implement its monetary policy under the inflation-targeting regime. Among the studies that have documented a lower pass-through, the following should be mentioned: Capistrán, Ibarra and Ramos-Francia (2012) who found that a 12-month exchange rate pass-through of one percent on the exchange rate shifted from 0.32 to 0.02 percentage points from the period of January 1997 – May 2001 to the period of June 2001 – December 2010. On the other hand, more recent estimates of the pass-through, such as Cortés (2013) for the period June 2001 – August 2012, as well as Kochen and Sámano (2016) for the period of January 2011 – April 2016 estimate the pass-through at 0.04 percentage points in both studies. Even though these studies show that the pass-through of exchange rate adjustments onto inflation is low, given the considerable depreciation in recent years, it is relevant to determine if the pass-through has been affected. Considering the above, this box seeks to analyze the referred pass-through coefficient and its characteristics from different perspectives.

To carry out this analysis, four exercises were realized with data from June 2001 to May 2017, using Autoregressive Vectors (VAR).[2] All exercises include macroeconomic variables that are both domestic and external, in accordance with the traditional model for small and open economies, such as the Mexican one.

A. ***Base Model:*** it is estimated using a traditional VAR model that incorporates the main variables affecting the inflation dynamics in Mexico. This model is estimated for two periods, one up to May 2016 and the other one until May 2017, to analyze possible changes in the pass-through of exchange rate adjustments to inflation.

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[1] Indeed, among these achievements, the following are notable: a reduction in the level, volatility and persistence of inflation, the anchoring of inflation expectations at levels close to its target and a decrease in the pass-through of the changes in relative prices, including the real exchange rate, onto the general price growth of goods and services. A detailed explanation of the structural achievements that have been attained with respect to curbing inflation is presented in the first section of Aguilar et al. 2014.

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[2] Estimates in the first three exercises are based on the paper Angeles, D., J. Cortés and D. Sámano (2017). "Evolución y Características del Traspaso del Tipo de Cambio a Precios en México." The fourth estimation is based on the paper Jaramillo, J., L. Pech, C. Ramírez and D. Sánchez (2017) "Traspaso no lineal del Tipo de Cambio a Precios".

A. ***Model with Interaction between the Exchange Rate and the Output Gap:*** the base model is extended by incorporating the exchange rate variable that is conditional on the positive gap of IGAE. The goal is to identify if the pass-through of the exchange rate is different in the period in which the economy is above its potential growth trend, with respect to periods when it is below this trend.

B. ***Model with Asymmetry:*** the specification of this model includes the possibility that the inflation response is quantitatively different from an appreciation as compared to a depreciation of the same magnitude in the exchange rate.

C. ***Model Threshold VAR (TVAR):*** it analyzes the possibility of different pass-throughs when a moderate depreciation is observed, as compared to a case when a higher depreciation is presented, given an endogenously estimated threshold.

Results indicate that, despite the considerable depreciation of the national currency over the last years, the degree of the pass-through practically has not changed and persists at a low level. In addition, it is found that the pass-through of the exchange rate onto inflation: i) is higher when the economy is growing above its potential growth trend, although, with the methodology used in this analysis in particular, the difference is not statistically significant;[3] ii) the pass-through is higher when the currency depreciates as compared to the situation in which it appreciates; and iii) there are differences in the pass-through of the exchange rate onto inflation in an environment of low depreciation with respect to a juncture of high depreciation; however, the differences are not of an economically relevant magnitude. Thus, there is no statistical evidence that the pass-through has changed, and it remains low. Even considering the current economic conditions, where the pass-through could be perceived as being affected, it, in fact, has remained low.

2. Estimates

A. Base Model

A VAR model is estimated in annual changes, with a monthly frequency considering an analysis sample from June 2001 to May 2017. This model includes the main variables that have been documented to affect inflation dynamics. In this context, the exchange rate pass-through onto inflation is analyzed by estimating impulse–response functions and elasticities of the pass-through at different horizons, which in this model represent months. The VAR equation corresponding to inflation is the following:

$$\Delta_{12}\pi_t = \alpha + \sum_{j=1}^n \beta_j \Delta_{12}\pi_{t-j} + \sum_{j=1}^n \varphi_j \Delta_{12}\text{FX}_{t-j} + \sum_{j=1}^n \delta_j \text{r}_{t-j}$$

$$+ \sum_{j=1}^n \tau_j \Delta_{12}\,IGAE_{t-j} + \gamma_1 \Delta_{12}IP_t + \gamma_2 RFF_t +$$
$$\gamma_3 \Delta_{12}CPI_t + \gamma_4 \Delta_{12}PCOMM_t + \varepsilon_t \qquad \textbf{(1)}$$

Where:

$\Delta_{12}\pi_t$ is the annual change in t of the CPI or of the estimated subindex.

$\Delta_{12}\text{FX}_t$ is the annual change in t of the bilateral exchange rate with the U.S. in MXN/USD.

r_t is the rate of 28-day Cetes in t.

$\Delta_{12}IGAE_t$ is the annual change in t of IGAE.

$\Delta_{12}IP_t$ is the annual change in t of U.S. industrial production.

RFF_t is the federal funds' rate in t.

$\Delta_{12}CPI_t$ is the annual change in t of the U.S. consumer price index.

$\Delta_{12}PCOMM_t$ is the annual change in t of the commodity price index of the IMF.

To quantify possible changes in the pass-through of the exchange rate onto inflation last year, the base model was estimated using the data from June 2001 to May 2016, and subsequently the estimation was updated as of May 2017. Table 2 at the end of the box shows all results of the exercises to simplify comparison. For this model, in the case of estimates up until May 2016 the elasticity of the 12-month pass-through of the exchange rate onto headline inflation was 0.03 percentage points. When the estimation period is extended up until May 2017, this elasticity is 0.05. However, this difference is not statistically significant, reason why there is no empirical evidence of changes in the pass-through.[4] With respect to the main subindices of the CPI, similar results are obtained. In particular, for the full sample the accumulated elasticity of the pass-through at 12 months is 0.04, 0.11 and 0.10 percentage points for core inflation, merchandise and non-core inflation, respectively. These results are compared to elasticities of 0.03, 0.09 and 0.09 for the same subindices, considering the estimation sample up until May 2016. In the case of services, the accumulated elasticity of the pass-through remains statistically non-significant.

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[3] However, using the methodology from Kochen, F. and D. Sámano (2016) based on CPI microdata, a modest but statistically significant difference is established in the pass-through when the gap is positive.

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[4] In particular, for headline inflation proof of a Chow structural change was carried out, in which a statistical value F of 1.46 was obtained with a value of probability of 0.23, indicating that the null hypothesis (that the pass-through coefficient is equal for the two analyzed samples) cannot be rejected. In addition, it can be graphically illustrated that the impulse-response function of inflation, in view of the exchange rate shock on the total sample, is not statistically different from that estimated for May 2016. Similar results are obtained for the main subindices of the CPI.

In addition, Chart 2 shows the impulse-response function of headline inflation given a one-time exogenous shock of one percent on the exchange rate with its confidence intervals for the estimate as of May 2017.[5] This impulse-response function, along with the subsequent ones that are presented in this box, consider the degree of endogenous persistence that the exchange rate exhibits in the face of an exogenous shock on itself.

Chart 2
Base Model: Impulse-Response Function of Headline Inflation given a One Percent Shock onto the Exchange Rate
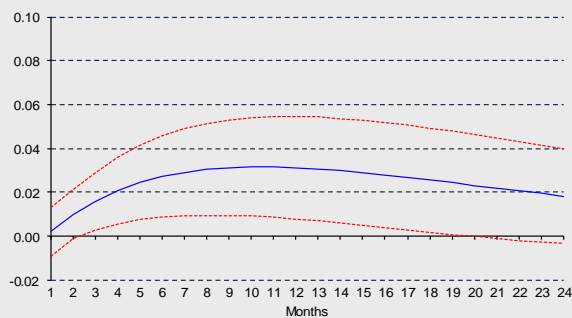
Source: Own estimates with data from Banco de México and INEGI.

B. Model with Interaction between the Exchange Rate and the Output Gap

This model includes a conditional variable (FX_t^{g+}) to calculate the pass-through of the exchange rate in the periods when the economy is above its potential growth trend. Instead of introducing IGAE in annual changes, as it was used in the base model, it is included as a gap with respect to its growth trend.

The VAR equation corresponding to inflation is the following:

$$\Delta_{12}\pi_t = \alpha + \sum_{j=1}^{n} \beta_j \Delta_{12}\pi_{t-j} + \sum_{j=1}^{n} \varphi_j \Delta_{12}FX_{t-j} + \sum_{j=1}^{n} \varphi_j^{g+} \Delta_{12}FX_{t-j}^{g+} + \sum_{j=1}^{n} \delta_j \, r_{t-j} + \sum_{j=1}^{n} \tau_j \, GAP_{t-j} + \gamma_2 RFF_t + \gamma_3 \Delta_{12}CPI_t + \gamma_4 \Delta_{12}PCOMM_t + \varepsilon_t \quad (2)$$

Where:
$\Delta_{12}FX_t^{g+}$ is the annual change in t of the exchange rate if the IGAE gap is positive, and zero, otherwise.
Brecha_t is the gap in t of the IGAE.

Two impulse-response functions are obtained: (1) for headline inflation, as a result of a one-time

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[5] The impulse-response function is calculated using the methodology suggested by Pesaran and Shin (1998), which is a generalization of the methodology of Cholesky and is invariant to the variables' arrangement.

shock of 1 percent in the exchange rate when the gap is less than or equal to zero; and (2) for headline inflation, derived from a one-time shock of 1 percent in the exchange rate, when the gap is positive (Chart 3). The results indicate that if the economy is growing below its long-term growth trend, the accumulated pass-through elasticity at 12 months, given a shock to the exchange rate for headline inflation, is of 0.05 percentage points. In contrast, if the shock of the exchange rate occurs when the economy is above its long-term trend, this elasticity is 0.14 percentage points (Table 2). It should be noted that, although, on average, the exchange rate pass-through onto inflation is higher when the gap is positive as compared to episodes characterized by a gap lower than or equal to zero, the difference with this estimation methodology is not statistically significant.

Chart 3
Model with Interaction: Impulse-Response Functions of Headline Inflation given a One Percent Shock to the Exchange Rate
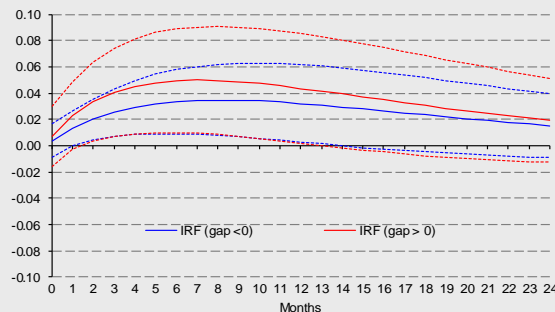
Source: Own estimates with data from Banco de México and INEGI.

C. Model with Asymmetry

This section modifies the base model to identify asymmetric responses of the exchange rate pass-through onto inflation, when appreciations and depreciations occur. To do that, a conditional variable (FX_t^+) is added to calculate the exchange rate pass-through onto inflation in the periods in which the national currency is depreciated and to compare the results with the response that would be obtained in a context of appreciations. That is, considering a positive variation of the exchange rate as a depreciation (more Mexican pesos for U.S. dollars), the variable $(\Delta_{12}FX_t^+)$ takes positive values of the annual changes of the exchange rate when there are depreciations and takes a value of zero when there are appreciations. This allows to differentiate the pass-through of the exchange rate onto inflation between appreciations and depreciations. The VAR equation corresponding to inflation is:

$$\Delta_{12}\pi_t = \alpha + \sum_{j=1}^{n} \beta_j \Delta_{12}\pi_{t-j} + \sum_{j=1}^{n} \varphi_j \Delta_{12}FX + \sum_{j=1}^{n} \varphi_j^+ \Delta_{12}FX_{t-j}^+ + \sum_{j=1}^{n} \delta_j \, r_{t-j} + \sum_{j=1}^{n} \tau_j \, GAP_{t-j} + \gamma_1 \Delta_{12}IP + \gamma_2 RFF_t + \gamma_3 \Delta_{12}CPI_t + \gamma_4 \Delta_{12}PCOMM_t + \varepsilon_t \quad (3)$$

Where:

$\Delta_{12}FX_t^+$ is the annual change in t of the exchange rate if it is positive, that is, if the currency is depreciated, and zero, otherwise.

Chart 4
Model with Asymmetry: Impulse-Response Functions of Headline Inflation given a One Percent Shock to the Exchange Rate
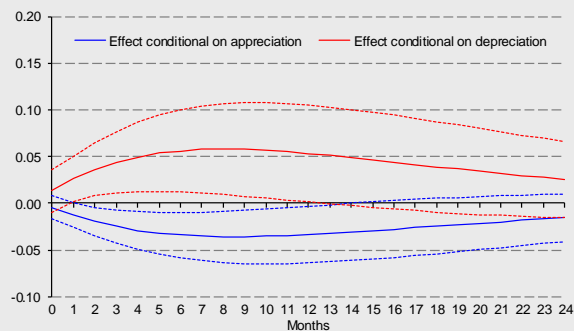
Source: Own estimates with data from Banco de México and INEGI.

With respect to this model, Chart 4 illustrates that the impulse-response function for headline inflation as a result of a one-time shock of 1 percent on the exchange rate is different depending on whether it is an appreciation or a depreciation. In particular, the accumulated pass-through elasticity of a depreciation (a positive change) 12 months after a 1 percent shock on the exchange rate on headline inflation is 0.09 percentage points with respect to its previous level, while core, merchandise and non-core inflation go up 0.06, 0.19 and 0.21 percentage points, respectively. On the other hand, a one-time appreciation (a negative change) of 1 percent in the exchange rate causes headline inflation to decline 0.05 percentage points 12 months after the shock, while core inflation, merchandise and non-core inflation go down 0.04, 0.11 and 0.12 percentage points, respectively (Table 2). In this sense there is evidence of asymmetry in the pass-through of the exchange rate onto inflation, and the effects of the depreciation are greater as compared to those of appreciation.

D. Model Threshold VAR (TVAR)

This section presents the methodology of threshold VAR models, following Alfonso, et al. (2011), Balke (2000) and Li and St-Amant (2010). Unlike a linear VAR, such as

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[6] See, for example, Caselli & Roitman (2016), Da Silva Correa & Minella (2010), Frankel et al. (2012) and Pollard & Coughlin (2004).
[7] The number of lags was determined using the data criterion of Hannan-Quinn.
[8] For the estimation of the threshold, the first step is to set the number of minimum observations that will be considered in the regime with fewer observations. For the size of the sample, the threshold was sought considering that at least 20 percent of observations are in the regime with fewer observations.

those presented above, this methodology allows to identify if there are different coefficients of the pass-through depending if the economy is facing an environment of "low" or "high" depreciation. What defines "low" or "high" depreciation is if there are structural changes in how inflation responds to an exchange rate shock depending on the size of the depreciation. In this exercise the exchange rate threshold is endogenously estimated, distinguishing between "low" and "high" depreciation, that is the value that differentiates between both regimes, as will be explained below. Some authors have found for different economies that the degree of the pass-through is different depending on the depreciation regime.[6] The equation of this model is the following: [7]

$$\Delta_{12}\pi_t = \alpha_1 + \sum_{j=1}^{n}\beta_{1j}\Delta_{12}\pi_{t-j} + \sum_{j=1}^{n}\varphi_{1j}\Delta_{12}FX_{t-j} +$$
$$\sum_{j=1}^{n}\delta_{1j}r_{t-j} + \sum_{j=1}^{n}\tau_{1j}\Delta_{12}IGAE_{t-j} + (\alpha_2 +$$
$$\sum_{j=1}^{n}\beta_{2j}\Delta_{12}\pi_t + \sum_{j=1}^{n}\varphi_{2j}\Delta_{12}FX_{t-j} + \sum_{j=1}^{n}\delta_{2j}r_{t-j} +$$
$$\sum_{j=1}^{n}\tau_{2j}\Delta_{12}IGAE_{t-j}) I(FX_{t-d} > \gamma) + \lambda X_t + \varepsilon_t \qquad \textbf{(4)}$$

Equation (4) includes the same endogenous variables used in the base model, X_t is the same vector of control variables; the term $(FX_{t-d} > \gamma)$ is an indicative function that takes the value of 1 if the annual rate of exchange rate depreciation is higher than the value γ and 0, otherwise. In this way, γ represents the threshold that distinguishes between the regimes of "low" and "high" depreciation. As mentioned above, this threshold is determined endogenously in the model. In order to obtain the parameter γ, equation (4) is estimated for each observed depreciation rate in the sample. The value of γ that yields the best adjustment is chosen as a threshold, in particular, the one that has the lowest mean squared error.[8] Thus, if the economy experiences a depreciation below threshold γ the impact of the exchange rate onto inflation is determined by coefficient φ_1 in the equation (4), while if the depreciation is above this value, it is determined by $\varphi_1 + \varphi_2$. This implies that by shifting from a low to a high depreciation regime, there is a different pass-through of exchange rate adjustments onto inflation. To underpin the use of this methodology, it is important to obtain statistical evidence of nonlinearity. In this case, the goal is to identify if there is a non-linear relation between the exchange rate and inflation. The results indicate that for all the inflation measurements analyzed, there are statistically significant nonlinearities with respect to the performance of the exchange rate.[9] Table 1 presents the thresholds of annual depreciation found for each inflation index for which

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[9] An avg-Wald is used to evaluate the statistical relevance of each value taken by the threshold within the subset of selected values. Given that the asymptotic distribution of the threshold is unknown. Bootstrap methodology used by Hansen (1996) is used to generate an empirical distribution of the statistic, based on which the inference can be made.

nonlinearity proofs are statistically significant. As can be appreciated, this nonlinearity seems to exist in the case of headline inflation, in merchandise (and therefore, in core inflation) and in non-core inflation. In contrast, the services' inflation does not seem to present this type of nonlinearity. For headline inflation, the annual depreciation rate that is distinguished between both regimes is estimated to be 7.16 percent.

Table 1
Threshold VAR Model: Estimated Thresholds of Annual Depreciation of the Exchange Rate
Percent

Inflation	Exchange rate threshold
Headline	7.16
Core	9.26
Merchandise	9.26
Non-core	7.16

Source: Own estimates with data from Banco de México and INEGI.

The nonlinear nature of TVAR makes the analysis of the impulse-response functions more complex than in the linear case, given that they are not necessarily symmetrical when shocks are different in sign or magnitude. In this case, there is an impulse-response function that corresponds to the regime of low depreciation and the other one corresponding to that of high depreciation. Chart 5 shows both functions for headline inflation given a one-time shock of 1 percent of the exchange rate. It can be appreciated that the impact on inflation in the regime of high depreciation is stronger. Besides, responses are statistically different, even though the magnitude of this difference is low (Table 2).[10]

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[10] A linear regression for Minimum Least Squares was estimated as well, in which inflation is explained by different variables, including a quadratic term of a variable of the exchange rate. Although there is evidence of a nonlinear performance in inflation with respect to the exchange rate, it seems to be that this functional way of introducing nonlinearities makes a good adjustment only when the depreciation levels are very high.

Chart 5
Threshold VAR Model: Impulse-Response Functions of Headline inflation given a One Percent Shock on the Exchange Rate
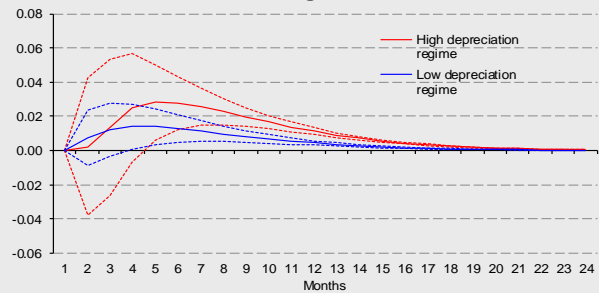
Source: Own estimates with data from Banco de México and INEGI.

In particular, when the economy is facing an environment of low depreciation, the pass-through of an additional depreciation of 1 percent raises headline inflation by 0.04 percentage points 12 months after, while in the environment of high depreciation it increases it by 0.05 percentage points. For core inflation, when the rate of depreciation is below the threshold, inflation increases 0.03 percentage points, while when it lies above it, it increases by 0.04 percentage points. As expected, the highest pass-through was found in the merchandise component: after 12 months, a depreciation of 1 percent causes inflation in the merchandise index to go up by 0.08 percentage points in the regime of low depreciation, and 0.09 percentage points in the regime of high depreciation.

Thus, although from a statistical point of view it is found that the degree of the pass-through is different between the two regimes, the difference does not seem to be economically relevant. The pass-through coefficient is not statistically significant for the inflation in the services component in either of the two regimes. It should be noted that the pass-through coefficients that can be found in this exercise, both for headline and core inflation, in the regime of high depreciation are similar to the results found in the base model for this period of estimation, above all considering that last year the depreciation of the Mexican peso was higher than its historic average.

Table 2
Results: Elasticity of the Accumulated Pass-through

Inflation	Base model		With output gap		With asymmetry		VAR threshold	
	As of May 2016	As of May 2017	Exchange rate	Exchange rate plus cash conditional on the positive gap	Depreciation	Appreciation	Low depreciation regime	High depreciation regime
CPI	0.03*	0.05**	0.05**	0.14***	0.09**	-0.05**	0.04**	0.05**
Core	0.03*	0.04***	0.04***	0.09***	0.06***	-0.04***	0.03***	0.04***
Merchandise	0.09***	0.11***	0.10***	0.22***	0.19***	-0.11***	0.08***	0.09***
Services	-0.01	0.00	0.00	0.02	0.00	0.00	-0.01	-0.01
Non-core	0.09*	0.10*	0.12**	0.30**	0.21*	-0.12**	0.08*	0.09

Source: Own estimates with data from Banco de México and INEGI.
Note: Superscripts ***, **, and * denote statistical significance at 1 percent, 5 percent and 10 percent, respectively.

3. Final Remarks

This box estimated the pass-through of exchange rate adjustments onto inflation and its characteristics under different economic conditions. Relative to the base model, it is found that the average pass-through of the exchange rate onto inflation has maintained practically unchanged last year, and remained low. On the other hand, in the model, in which the exchange rate interacts with the output gap, it is shown that the average pass-through of the exchange rate onto inflation is higher when the economy is expanding above its potential growth trend. However, this difference is not statistically significant. In the case of the model with asymmetry, there is evidence that the pass-through of the exchange rate onto inflation is higher when the currency depreciates as compared to when it appreciates in an equivalent magnitude. Finally, the threshold VAR model shows that there are two regimes, one of high depreciation and a greater pass-through, and the other of low depreciation with a pass-through that is relatively smaller. The differences in the pass-through between these two regimes, albeit statistically different, are low and are not economically relevant. Furthermore, the results of the different methodologies used in this Box show that the subindex of merchandise has the highest pass-through coefficient, as expected, while the coefficient for the services subindex is not statistically significant under any methodology. These results confirm that adjustments of the exchange rate have been reflected in changes in relative prices, affecting to a greater degree the prices of goods that are expected to respond to the exchange rate movements, and were not generalized to other components of inflation that are not directly related to the exchange rate. It should be noted that these results are, to a large degree, consequent on the progress obtained throughout many years in curbing inflation. Overall, these results indicate that the degree of the exchange rate pass-through onto inflation has not changed significantly over the last years. This shows that structural progress made since over almost two decades in this respect has been preserved. Nevertheless, this progress should not be taken for granted, reason why the Board of Governors has been acting in a preemptive manner, taking the monetary policy actions that it considered adequate and remaining watchful of the second round effects on the price formation process of the economy.

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Table 3
Consumer Price Index, Main Components and Trimmed Mean Indicators
Annual change in percent

	2016				2017		
	I	II	III	IV	I	II	1f August
CPI	**2.69**	**2.56**	**2.78**	**3.24**	**4.98**	**6.10**	**6.59**
Core	**2.69**	**2.91**	**3.00**	**3.28**	**4.19**	**4.78**	**5.02**
Merchandise	**3.04**	**3.51**	**3.79**	**3.98**	**5.33**	**6.22**	**6.58**
Food, beverages and tobacco	2.88	3.69	3.89	4.26	5.93	6.82	7.57
Non-food merchandise	3.17	3.36	3.71	3.75	4.83	5.73	5.76
Services	**2.40**	**2.41**	**2.34**	**2.68**	**3.23**	**3.55**	**3.70**
Housing	2.11	2.21	2.32	2.40	2.52	2.56	2.60
Education (tuitions)	4.21	4.13	4.17	4.26	4.37	4.39	4.55
Other services	2.15	2.09	1.80	2.50	3.62	4.34	4.60
Non-core	**2.71**	**1.46**	**2.10**	**3.14**	**7.38**	**10.31**	**11.60**
Agriculture	**6.51**	**4.48**	**3.81**	**4.98**	**-0.20**	**6.39**	**14.43**
Fruit and vegetables	22.45	13.30	8.58	8.32	-6.88	9.60	27.22
Livestock	-1.60	-0.01	1.26	3.09	4.02	4.54	7.28
Energy and government approved fares	**0.39**	**-0.45**	**1.01**	**2.00**	**12.28**	**12.90**	**9.80**
Energy	-1.10	-1.49	-0.03	1.75	16.85	15.72	11.26
Government approved fares	3.23	1.41	2.83	2.48	3.91	7.99	7.28
Trimmed Mean Indicator [1]							
CPI	2.53	2.70	2.93	3.20	4.20	4.60	4.65
Core	2.85	3.05	3.20	3.29	4.01	4.40	4.55

1/ Prepared by Banco de México with data from INEGI.
Source: Banco de México and INEGI.

Chart 52
Consumer Price Index
Annual change in percent

Source: Banco de México and INEGI.
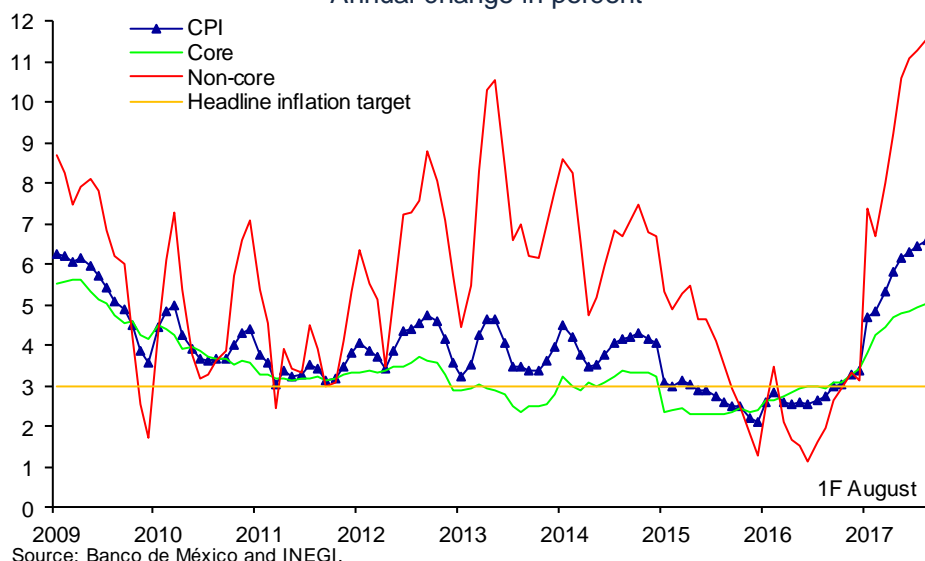
To provide elements that would allow to demonstrate the improvement in the inflation process that has already started to be perceived, below a series of indicators is presented, which analyze in greater detail the performance of headline and core inflation (also see Box 2). In some of these, seasonally adjusted and annualized monthly price changes will be used. It should be kept in mind that these indicators, based on the monthly changes of the price index, are not affected by the arithmetic comparison base effect that contains the annual change, and therefore, has information on the dynamics of inflation at the margin.

Thus, firstly, we analyze the proportion of the headline and core CPI baskets, the monthly (seasonally adjusted and annualized) price changes of which fall within certain intervals. To do so, generic items comprising the basket of both headline and core indices are grouped into three categories: i) items with a change below 2 percent; ii) between 2 and 4 percent; and iii) over 4 percent. In the same vein, the percentage of these baskets is presented in two additional categories: the one with price changes lower or equal to 3 percent; and the one with monthly price changes over 3 percent (Chart 2).

This illustrates that the percentage of both headline and core baskets with monthly seasonally adjusted and annualized changes in their prices below 4 percent have been increasing (the blue and green areas, Chart 2a and Chart 2b). In this way, the share of goods and services' basket of the headline index with price changes below 4 percent was on average 35 percent in the first quarter of 2017, while in the second one it was 44 percent, locating at 56 percent in the first fortnight of August. As regards the respective share of the basket of the core index, it went up from an average of 40 to 43 percent over the same quarters, and marked 54 percent in the first fortnight of August. In turn, the share of the basket of the headline index with seasonally adjusted and annualized monthly changes below or equal to 3 percent (the area below the yellow line) was on average 32 percent in the first quarter and 37 percent in the second one, observing 47 percent in the first fortnight of August. For the core index, the shares were 37, 38 and 49 percent in both periods. In total,

the evolution of these indicators during the period presented in this Report gives evidence of a better inflation performance in Mexico over the last months.

Chart 53
Percentage of CPI Basket according to Intervals of Monthly Annualized Increment, s. a. [1]
Percent

a) CPI

b) Core
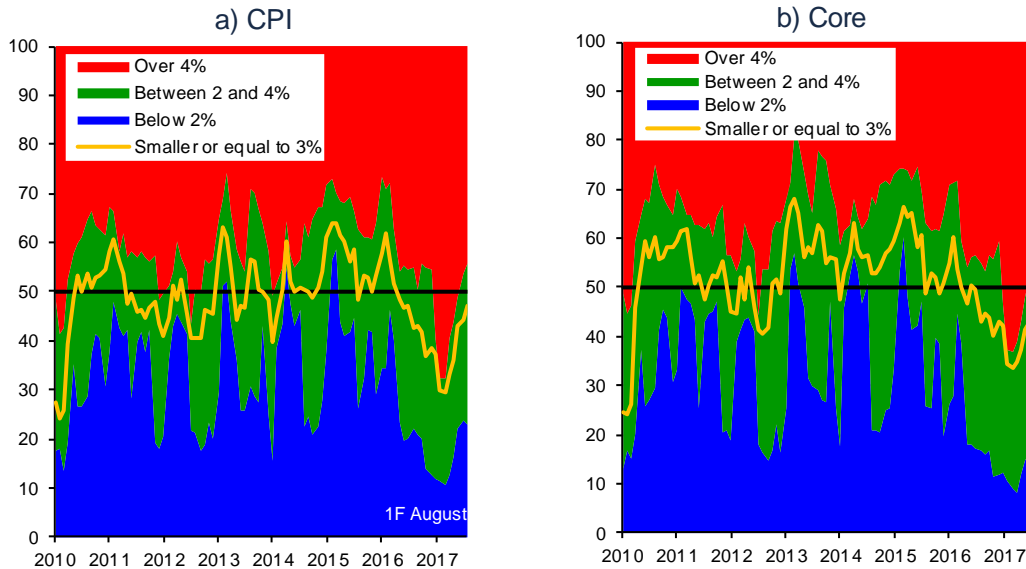
s. a. / Seasonally adjusted data.
1/ 3-month moving average.
Source: Banco de México and INEGI.

Below, we analyze the evolution of seasonally adjusted and annualized monthly changes of both the headline and core indices, as well as their 6-month moving averages. It can be observed that both the indicator for the headline and that for core index presented lower levels than those at the beginning of the year, and both of them record declining trends (Chart 3a and Chart 3b). The change of trend is also accentuated in the case of seasonally adjusted and annualized monthly changes of the merchandise prices, while in the case of services they have remained stable and at levels close to 3 percent (Chart 3c and Chart 3d). With respect to 6-month moving averages of the price changes, they already present a downward trend for all referred items. The performance of these indicators complements the information presented in Chart 2, regarding a better performance of inflation at the margin and suggesting a change of trend in the inflation process.

Box 4
Impact of Recent Shocks on Inflation in Mexico

1. Introduction

The performance of inflation in recent years has been subject to different shocks. Since mid-2014, the national economy has faced a series of external shocks that generated a strong depreciation of the national currency. Among them, in mid-2014 and during 2015, the decrease in oil prices, the outlook of the normalization of the U.S. monetary stance and the widespread U.S. dollar appreciation are noteworthy. Subsequently, this was coupled with the process and the result of the U.S. elections, as well as the uncertainty regarding the Mexico – U.S. relation. This depreciation pressured the prices of the core component and in particular of different merchandise upwards. Moreover, in early 2017 new shocks of considerable magnitude onto inflation were added simultaneously, while the process of some energy products' price liberalization began, such as gasoline and LP gas prices, and the increment in the minimum wage was higher than over the previous years. More recently, there were adjustments in the public transport tariffs in Mexico City and across other cities of the country, and the prices of some fruit and vegetables, such as tomato, potato, green tomato, spiked.

As a result, annual headline inflation presents high levels and currently maintains an upward trend, albeit it is more moderate than in the previous few months. The growth rate of annual headline inflation has started to slow down and it appears to be approaching its ceiling. In addition, the inflation process in Mexico, studied using different measures of the trend and the indicators that analyze the performance of price changes at the margin, have shown a better performance over the last months, after the rebound at the beginning of 2017.

Indeed, the previously mentioned shocks have made it difficult to adequately identify the performance of the inflation process in Mexico, while at the same time causing the measured inflation to present higher levels and a more marked trend than that observed in the performance of the price system of the economy at the margin. In particular, the most recent shocks have been concentrated in a limited set of goods and services, without generating second round effects on the price formation process of the economy. In this sense, by eliminating these shocks from the inflation process, it can be appreciated that its dynamics seems to be starting the convergence trajectory to the permanent target of the Central Bank.

Thus, this Box presents the analysis of the main CPI subindices, the distribution and trimmed means of the monthly seasonally adjusted changes, data on the frequency and the magnitude of price increments, as well as the correlations among the monthly changes of different generic items. Its goal is to distinguish the current performance of the inflation dynamics at the margin from the evolution of the measured annual inflation, which has been strongly affected by the referred shocks. As will be seen further on, the results show that the inflation dynamics in Mexico, analyzed in a comprehensive manner, has started to shown signs of a change in trend.

2. Distributions of Monthly Changes

Chart 1a and Chart 1b present box-and-whisker plots of the seasonally adjusted and annualized monthly changes of generic items included in the headline and core indices for the period from January 2013 to the first fortnight of August 2017. These diagrams summarize some of the most important features of a series probability distribution, such as the median, the interquartile range and extreme values.

It can be observed that in the first quarter of 2017, for headline and core inflation, an unfavorable shift in total distribution of price changes and an increment in the medians with respect to the previous quarter were evident, largely due to the shock caused by price adjustments of some energy products that occurred in January, by the indirect effects that generated these adjustments and by the impact of the accumulated depreciation of the exchange rate. In contrast, in more recent months, the distributions of the monthly changes of these indicators have shifted downwards, the medians have reduced and the interquartile range starts to compress, pointing to a better performance of the inflation process. In this context, albeit the process of convergence still needs to be completed, a change of trend can be already observed in the monthly inflations of most generic items.

Chart 1a
Box-and Whisker Diagram of Annualized Monthly Changes of Generic Items of the CPI[1]
Data in percent
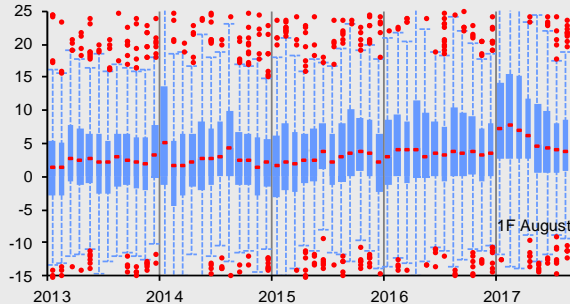
1/ At each point of time, a box-and-whisker diagram is build based on seasonally adjusted and annualized monthly changes of all generic items of the CPI. This indicator summarizes some of the most important features of a probability distribution, the median, the interquartile range and extreme values among them.
Source: Banco de México and INEGI.

Chart 1b
Box-and-Whisker Diagram of Annualized Monthly Changes of Generic Items of the Core Index[1]
Data in percent
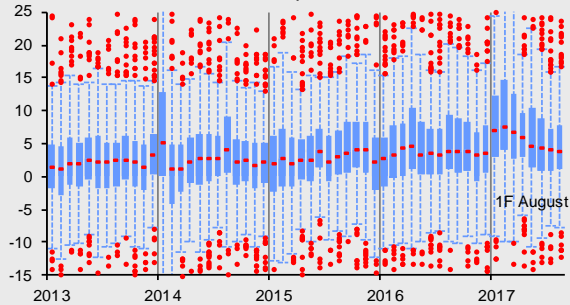
1/ At each point of time, a box-and-whisker diagram is build based on seasonally adjusted and annualized monthly changes of all generic items of the core index. This indicator summarizes some of the most important features of a probability distribution, the median, the interquartile range and extreme values among them.
Source: Banco de México and INEGI.

3. Trimmed Means

Below, we present trimmed means of seasonally adjusted monthly changes, which exclude extreme upward and downward changes from headline, core and non-core indices. As can be appreciated in the corresponding charts, in all cases the downward trend is notable in the monthly changes in recent months, both in the observed values and in the trimmed ones, slowly approaching a level consistent with the inflation target. As regards the headline index, Chart 2a makes it clear that a great part of the monthly inflation dynamics has been explained by price increments in certain goods, rather than by a widespread price increase across the economy. Chart 2b, related to the core component, shows a more homogeneous

performance among the observed monthly changes and trimmed data, but with a clear downside trend. The non-core component, presented in Chart 2c, has been affected the most by extreme price changes, which started in January in price adjustments in some energy products and, more recently, price increments in different fruit and vegetables. Still, its trimmed mean is at lower levels, which is congruent with the inflation target, suggesting that, if extreme changes are eliminated, most components of the non-core index present price changes congruent with Banco de México's target.

Chart 2a
Monthly Trimmed Mean: Headline [1]
Data in percent
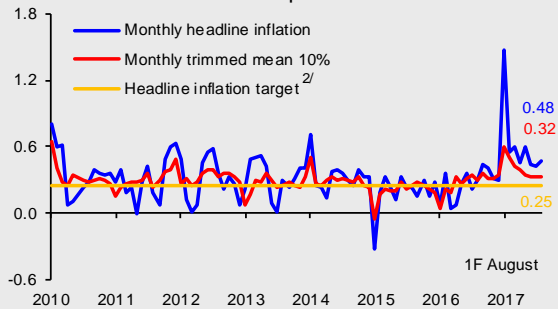
1/ Seasonally adjusted data.
2/ Expressed in monthly terms.
Source: Banco de México and INEGI.

Chart 2b
Monthly Trimmed Mean: Core [1]
Data in percent
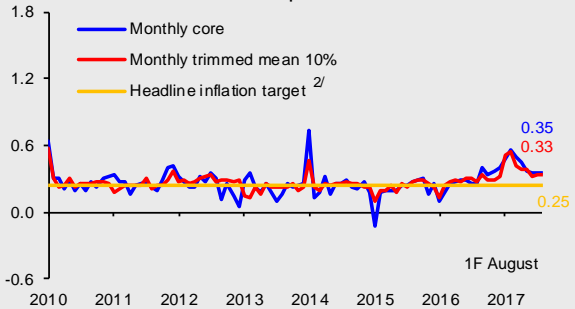
1/ Seasonally adjusted data.
2/ Expressed in monthly terms.
Source: Banco de México and INEGI.

Chart 2c
Monthly Trimmed Mean: Non-core [1]/
Data in percent

- Monthly non-core
- Monthly trimmed mean 10%
- Headline inflation target 2/

0.85
0.35
0.25

1F August

1/ Seasonally adjusted data.
2/ Expressed in monthly terms.
Source: Banco de México and INEGI.

Chart 3a
Frequency of Price Increments in Headline Inflation
Data in percent

- 2017
- 2014
- Average 11-16 (excl. 14)

28.87 15.44 20.20 11.33 16.10 9.73 15.80 14.71 11.22 13.55 13.77 11.22 11.52 11.08 17.37

Source: Banco de México and INEGI.

Chart 3b
Frequency of Price Increments in Core Inflation
Data in percent

- 2017
- 2014
- Average 11-16 (excl. 14)

19.43 16.51 16.82 9.14 11.06 8.76 11.06 9.14 9.77 8.50 12.94 11.26 10.00 8.66 10.41

Source: Banco de México and INEGI.

Chart 3c
Frequency of Price Increments in Non-core Inflation
Data in percent

- 2017
- 2014
- Average 11-16 (excl. 14)

53.52 12.66 29.03 17.05 29.26 12.26 28.18 29.26 15.02 26.75 15.94 11.10 15.49 17.41 35.53

Source: Banco de México and INEGI.

4. Frequencies and Magnitudes of Price Increments

This Section exhibits the evolution of the frequencies and magnitudes of prices increments during this year, to compare it with that registered during 2014, when important fiscal adjustments took place, and to compare it with the average of the period of 2011 – 2016, excluding 2014. It is observed that the frequencies of price increments spiked in early 2017, later declined and are currently located below, or as in the case of core index, at levels similar to those observed during other periods. The above is consistent with the evidence based on studies for Mexico, which indicate that in view of supply shocks, as could be the price increase in energy products at the beginning of 2017, the adjustment of inflation initially happens via changes in the frequency of price increments and it subsequently resumes the levels of the average frequency.[1]

As regards the magnitudes of price increments, it can be appreciated that for the headline and non-core index, they have been generally higher than those observed in other periods, which reflects considerable increments at the beginning of the year in energy products' prices and more recently in the prices of agriculture and livestock products. In turn, in the case of the core component, even though the magnitudes of prices increments were above the historic average during several months, recently they have been at levels similar to that one. The performance of frequencies and magnitudes shows that a great part of the adjustment in the core component derived from the referred shocks has already occurred, without generating second-round effects so far.

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[1] See Banco de México (2010). "Evidencia sobre la Ausencia de Efectos de Segundo Orden en el Proceso de Formación de Precios Asociados a las Modificaciones Tributarias Aprobadas por el H. Congreso de la Unión para 2010", in Box 1 of the Inflation Report, January - March 2010, pp. 6-7.
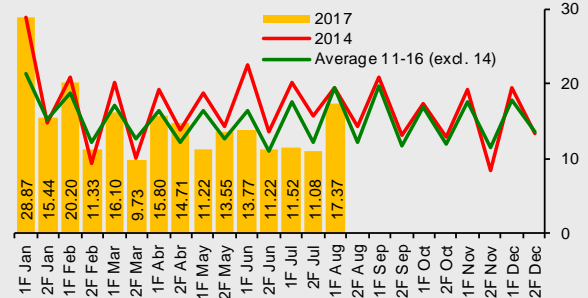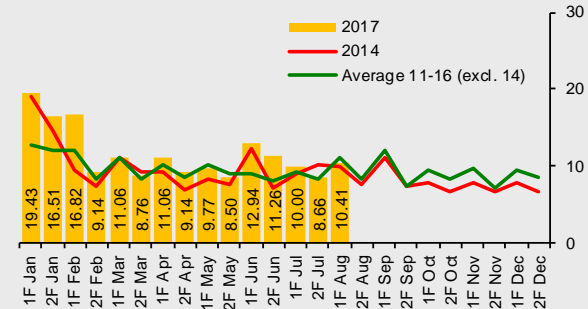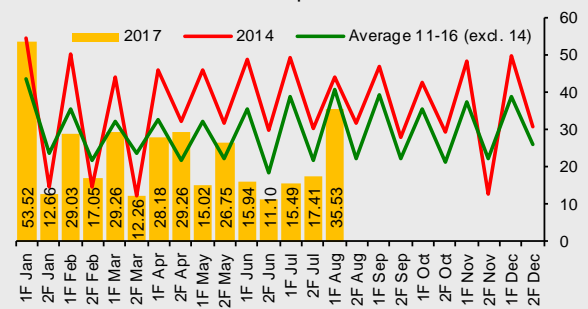
Chart 3d
Magnitude of Price Increments in Headline Inflation
Data in percent

Legend:
- 2017
- 2014
- Average 11-16 (excl. 14)

Bar values: 8.43, 6.57, 5.40, 7.23, 6.94, 8.71, 5.76, 7.08, 7.61, 6.20, 5.95, 6.45, 7.61, 7.74, 5.81

X-axis: 1F Jan, 2F Jan, 1F Feb, 2F Feb, 1F Mar, 2F Mar, 1F Apr, 2F Apr, 1F May, 2F May, 1F Jun, 2F Jun, 1F Jul, 2F Jul, 1F Aug, 2F Aug, 1F Sep, 2F Sep, 1F Oct, 2F Oct, 1F Nov, 2F Nov, 1F Dec, 2F Dec
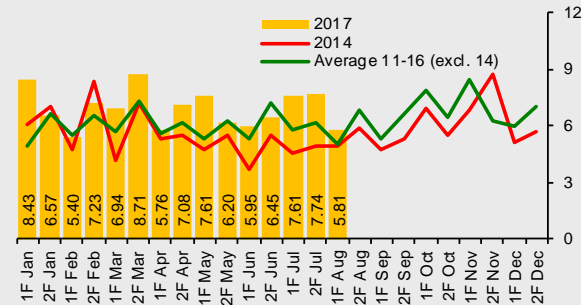
Source: Banco de México and INEGI.

Chart 3e
Magnitude of Price Increments in Core Inflation
Data in percent

Legend:
- 2017
- 2014
- Average 11-16 (excl. 14)

Bar values: 6.26, 5.73, 5.95, 7.37, 7.44, 8.35, 7.08, 7.57, 7.22, 8.06, 5.44, 5.59, 7.51, 7.11, 7.49
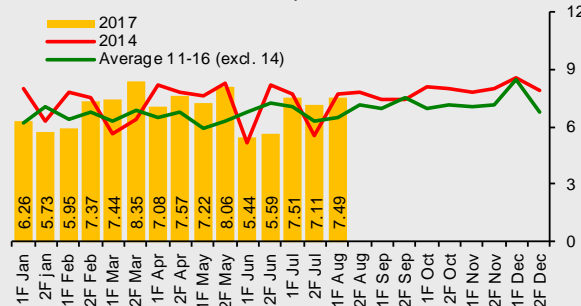
Source: Banco de México and INEGI.

Chart 3f
Magnitude of Price Increments in Non-core Inflation
Data in percent

Legend:
- 2017
- 2014
- Average 11-16 (excl. 14)

Bar values: 10.50, 9.44, 4.56, 7.03, 6.44, 9.38, 4.40, 6.69, 8.29, 4.66, 7.05, 8.73, 7.76, 8.56, 4.53

Source: Banco de México and INEGI.

5. Correlation of Monthly Changes among Generic Items

Finally, this section presents the evolution of the correlation of seasonally adjusted monthly changes in

different generic items that comprise the CPI and the core component, considering 24-month moving windows. The goal of this exercise is to analyze the degree of synchronization among price adjustments in generic items for different CPI baskets, as could be headline or core ones.

Charts 4a and 4b illustrate that at the beginning of the year the correlation of monthly price changes of generic items increased considerably both for the CPI and for the core component, due to price adjustments in energy products and the impact of the accumulated depreciation of the exchange rate.[2] However, in recent months, these correlations have been declining, as a result of which the most recent shocks have not generated a widespread impact and have been concentrated only in some goods and services.

Chart 4a
Correlation Coefficient of Monthly Changes among Generic Items: Headline Inflation
Data in percent

Legend:
- Correlation coefficient
- Inflation

1F August

X-axis: 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017
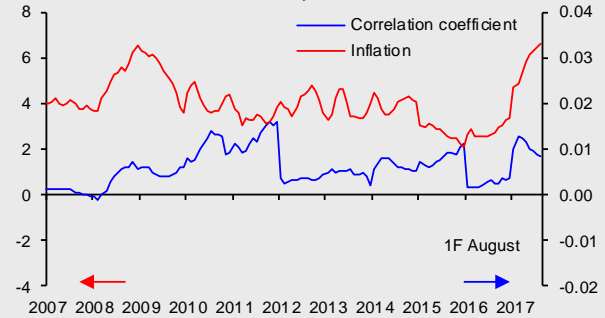
Source: Banco de México and INEGI.

Chart 4b
Correlation Coefficient of Monthly Changes among Generic Items: Core Inflation
Data in percent

Legend:
- Correlation coefficient
- Inflation

1F August

X-axis: 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017

Source: Banco de México and INEGI.

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[2] Charts 4a and 4b present normalized correlation coefficients, which are calculated by dividing original coefficients by inflaiton.
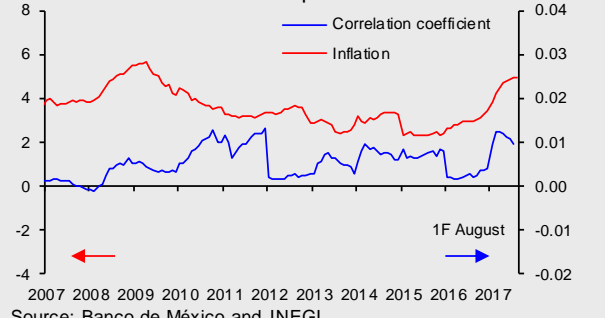
6. Final Remarks

The recent evolution of measured inflation has been affected by different shocks that account for its current high levels and its upward trend. Considering the nature of the referred shocks, as well as the lags that characterize the monetary policy, the actions implemented since the end of 2015 have prevented these shocks from generating widespread pressure on inflation, which seems to be decreasing if the particular shocks are excluded and its performance at the margin is analyzed. This is suggested by a number of elements of analysis, among which different measures of the inflation trends and indicators on the recent dynamics of the inflation process in Mexico are found. Hence, this evidence seems to suggest that, once the temporary effect of the most recent shocks dissipates, over the next months there will be a change of trend in annual headline inflation.

Chart 54
Annualized Seasonally Adjusted Monthly Change and Trend
Percent
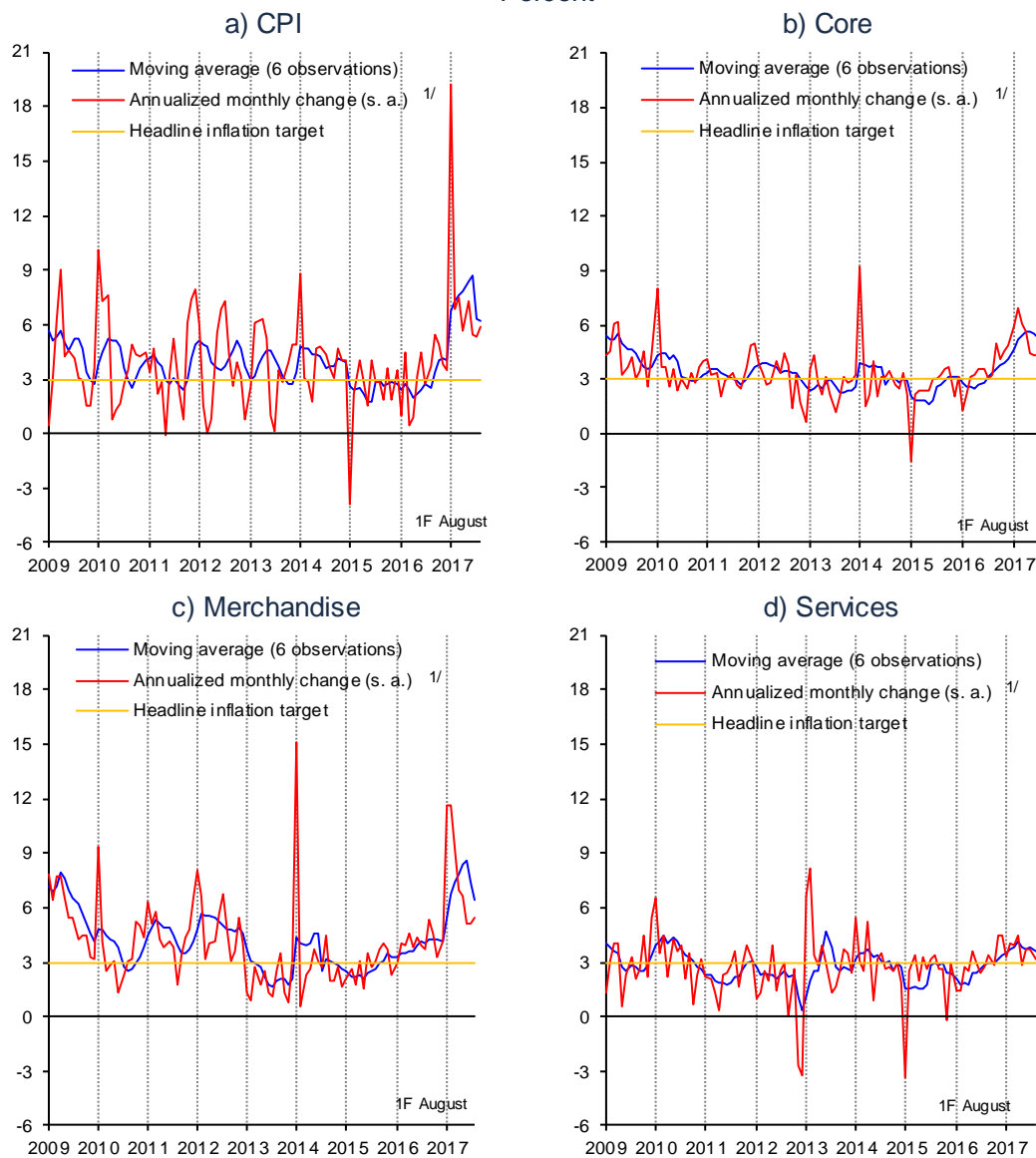
a) CPI

b) Core

c) Merchandise

d) Services

s. a. / Seasonally adjusted data.
1/ For the last observation, the annualized biweekly change is used.
Source: Seasonal adjustment prepared by Banco de México with own data and data from INEGI.

Likewise, using the annual changes, the measurement of the medium-term trend of inflation is presented, represented by the Trimmed Mean Indicator. In this regard, it can be observed that both in the case of headline and core inflations, the growth rate of their indicators has been decelerating at the margin. Thus, between the first and the second quarters of 2017, the Trimmed Mean Indicator for headline inflation shifted from 4.20 to 4.60 percent, locating at 4.65 percent in the first fortnight of August. Moreover, when comparing these data with the annual headline inflation observed in these periods (4.98, 6.10 and 6.59 percent, respectively), it is evident that, as of the second quarter, a great part of the level of measured inflation is accounted for by price increments in some products, rather than by a generalized

performance of prices. Meanwhile, for the case of core inflation, the referred indicator moved from 4.01 percent in the first quarter to 4.40 percent in the second one, observing 4.55 percent in the first fortnight of August. Although at a lower magnitude, the difference between the observed core inflation and its measurements of trend also suggest that the level of core inflation does not derive from generalized price increments (Chart 55 and Table 3).

Chart 55
Price Indices and Trimmed Mean Indicators [1/]
Annual change in percent

1/ The Trimmed Mean Indicator excludes the contribution of extreme variations in the prices of some generic items from the inflation of a price index. To eliminate the effect of these changes, the following is done: i) monthly seasonally adjusted changes of the generic items of the price index are arranged from the smallest to the largest value; ii) generic items with the biggest and the smallest variation are excluded, considering in each distribution tail up to 10 percent of the price index basket, respectively; and iii) using the remaining generic items, which by construction lie closer to the center of the distribution, the Trimmed Mean Indicator is calculated.
Source: Prepared by Banco de México with own data and data from INEGI.

In the performance of core inflation it stands out that, despite its upward trend, its growth rate starts to moderate, which derives from a certain slowdown in the annual price changes of merchandise. This can be appreciated in the relative stabilization of its impact on annual headline inflation (Chart 56). Specifically:
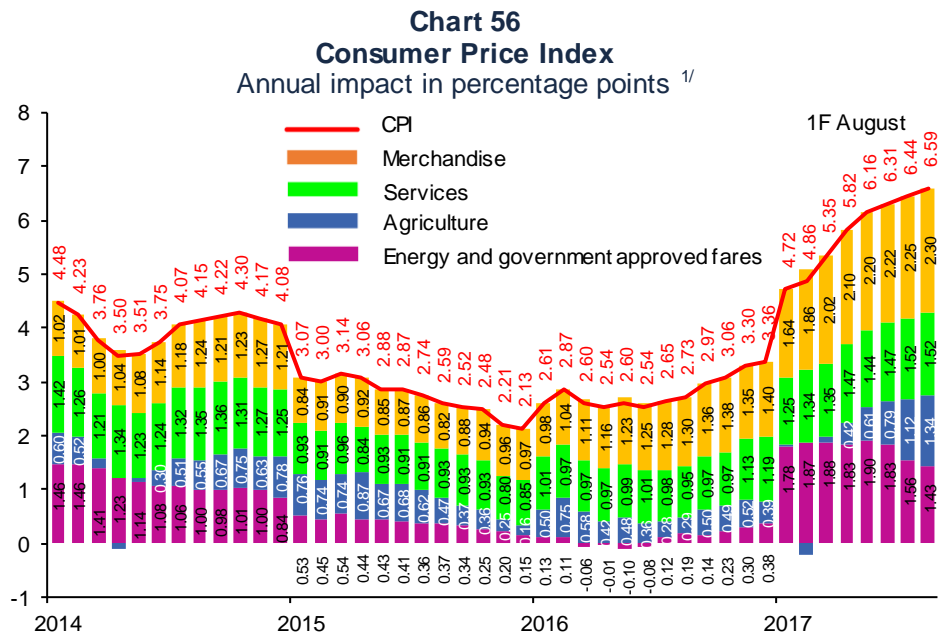
Chart 56
Consumer Price Index
Annual impact in percentage points [1]

CPI
Merchandise
Services
Agriculture
Energy and government approved fares

1F August

2014   2015   2016   2017

1/ In some cases, the sum of respective components can exhibit some discrepancies due to rounding.
Source: Prepared by Banco de México with data from INEGI.

iii. The subindex of merchandise prices principally keeps reflecting the effects of the depreciation of the national currency accumulated since late 2014. This subindex shifted from an average annual change rate of 5.33 to 6.22 percent between the first and the second quarters of 2017, marking 6.58 percent in the first fortnight of August. However, within this subindex the performance was differentiated. On the one hand, food merchandise prices maintained high growth rates, increasing from an average annual change of 5.93 to 6.82 percent between the mentioned quarters, and reaching 7.57 percent in the first fortnight of August. In contrast, non-food merchandise growth rates have started to stabilize. In this way, between the first and the second quarters of 2017, the average annual change of non-food merchandise went from 4.83 to 5.73 percent, and marked 5.76 percent in the first fortnight of August (Chart 57a and Chart 57b).

iv. On the other hand, the subindex of services' prices observed an increase in its average annual change rate, which shifted from 3.23 to 3.55 percent between the first and the second quarters of 2017, and located at 3.70 percent in the first fortnight of August. This performance is principally explained by higher growth rates reported by the services different from education and housing, whose average annual change rates were 3.62, 4.34 and 4.60 percent over the referred periods. In this respect, lower reductions in mobile phone tariffs with respect to last year were particularly relevant (Chart 57a).

Chart 57
Core Price Index
Annual change in percent

a) Merchandise and Services

b) Merchandise

Source: Banco de México and INEGI.
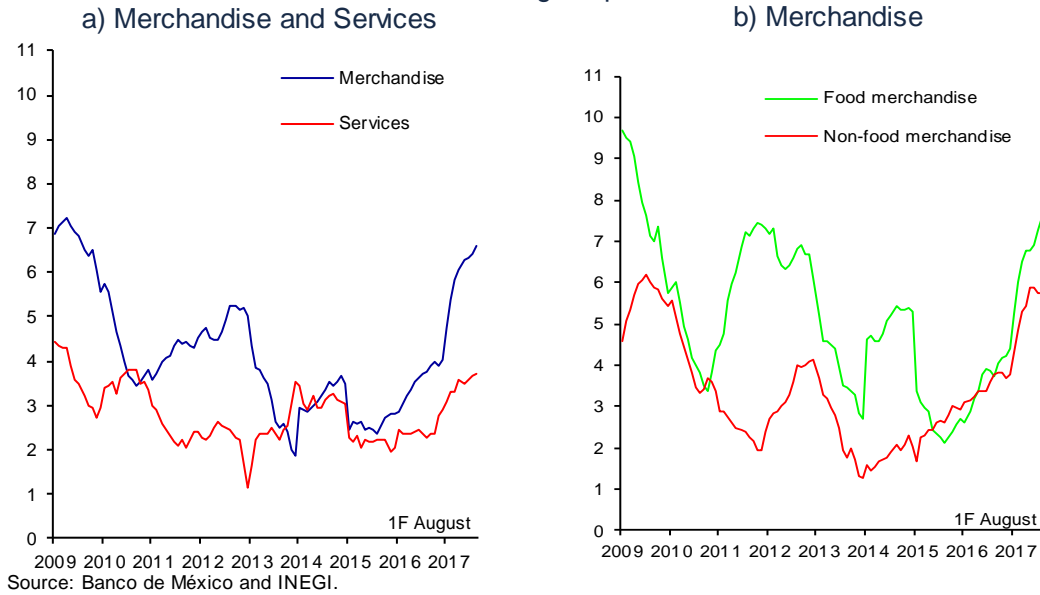
The levels of non-core inflation, that had already been high, received an additional boost during the second quarter of 2017, as a consequence of some price increments in certain agricultural products, as well as the increases in public transport fares in some cities. However, the prices of most energy products declined in the reference quarter, due to the appreciation of the national currency, as well as the reductions in the prices of their international references. In this way, although higher annual growth rates in the price subindex of agricultural products have been increasing their impact on headline inflation, this effect has been partially offset by the lower impact of the subindex of energy products and government approved fares (Chart 56 and Table 3).

i. Some agricultural products' prices went up significantly during the period analyzed in this Report, principally in the item of fruit and vegetables. Higher prices of tomato stand out, as its average annual change in the first quarter was -43.59 percent, while in the second one it went up to 29.56 percent and in the first fortnight of August marked 112.71 percent. Other products, characterized by notable price increments, were potato and other tubers, with average annual changes of -6.94, 0.75 and 38.03 percent in the same periods, and green tomato, with 7.79, 6.67 and 68.59 percent, respectively (Chart 58). Derived from the above, the subindex of agricultural products' prices increased from an average annual change of -0.20 percent in the first quarter of 2017 to 6.39 percent in the second one, observing 14.43 percent in the first fortnight of August. Volatility of fruit and vegetables' prices is well-known, as considerable increments generally derive from negative weather conditions that tend to return to normal over time, making the referred increments transitory, reason why in the near future these shocks are estimated to reverse.

Chart 58
Price Index of Selected Fruit and Vegetables
Annual change in percent
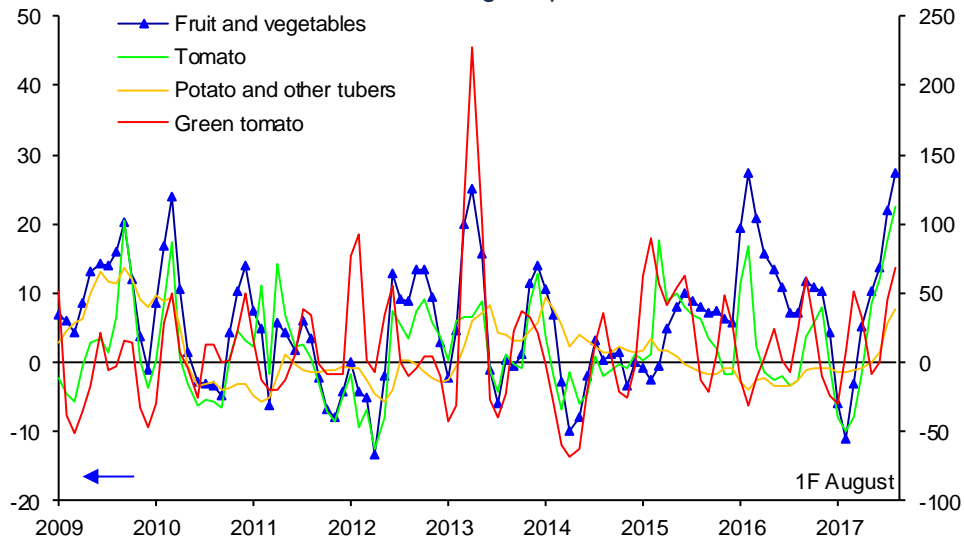
Source: Banco de México and INEGI.

    ii. The subindex of energy prices and government approved fares shifted from an average annual change rate of 12.28 to 12.90 percent between the first and the second quarters of 2017. This slight increment was principally associated to adjustments in public transport tariffs that took place in April in different cities of Mexico. This was in contrast with a decrease in average annual changes of most energy products in the second quarter with respect to the previous period, which was encouraged by the appreciation of the national currency, as well as reductions in their international references (Chart 8). In fact, in the first fortnight of August, the annual change of the subindex of energy prices and government approved fares lowered to 9.80 percent.

Chart 59
Price Indices of Selected Transport Services and Energy Products
Annual change in percent
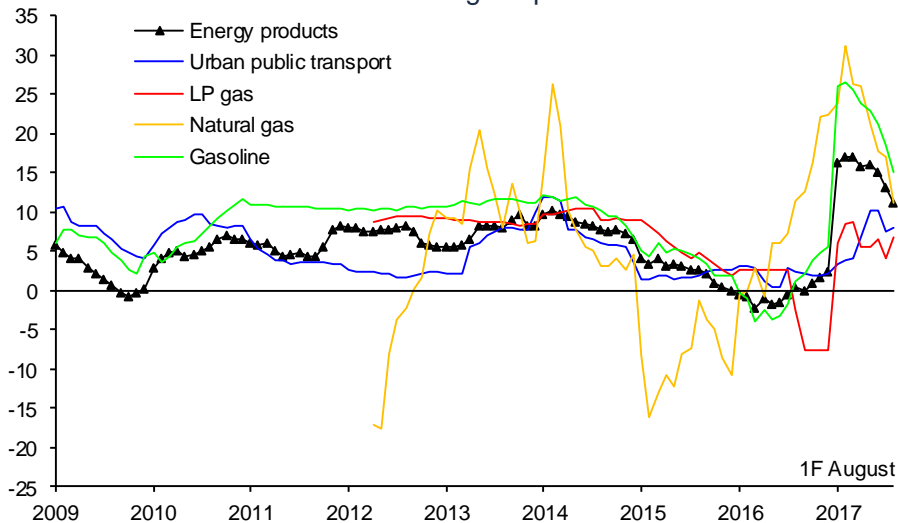
Source: Banco de México and INEGI.

Delving in the above:

- Between the first and the second quarters of 2017, the item of government approved fares went up from an average annual change of 3.91 to 7.99 percent. This increment was largely due to the increase of 1 Mexican peso, which occurred in April in public transport fares and urban bus services in Mexico City, and which represented an increment of between 16.7 and 25 percent, depending on the specific considered service. Over the same period, there were also adjustments in different public transport fares in the cities of Huatabampo, Son.; San Luis Potosí, S.L.P.; Tehuantepec, Oax.; and Tijuana, B.C. Subsequently, during the following months, there were increments in the prices of the same service in Culiacán, Sin. and Hermosillo, Son.

- In early 2017, gasoline prices spiked as a result of the process of its total liberalization throughout this year. Thus, in January, its monthly change was 17.29 percent. However, over the following months, gasoline prices went down, which was related to the favorable evolution of their international references and the exchange rate appreciation. Hence, in the reference quarter, the average monthly change of gasoline prices was -0.50 percent, while the change in the first fortnight of August was 0.41 percent. With respect to the process of gasoline price liberalization, starting from June 15, 2017, this process proceeded in the states of Chihuahua, Coahuila, Nuevo León, Tamaulipas and the municipality Gómez Palacio in Durango.

- Likewise, the price of LP gas was liberalized in January 2017, which implied a monthly increment of 17.85 percent in its price. In contrast, these changes in the following months have been more moderate, as a result of which the average monthly change of this energy product was -0.67 percent in the second quarter, and marked 2.18 percent in the first fortnight of August.

- The prices of the natural gas, determined by its international reference prices, have moderately increased in the reference quarter and in the first fortnight of August observed a zero change.

- In early 2016, low consumption electricity tariffs for domestic sector decreased by 2 percent, and since then they have remained unchanged. On the other hand, high consumption electricity tariffs for domestic sector (DAC) have reflected the performance of input costs required to generate electric power, which have recently lowered. Thus, these tariffs presented a change of -6.5 percent in the second quarter of 2017 and of -1.9 percent in the period of July – August.

2.2. Producer Price Index

Between the first and the second quarters of 2017, the Producer Price Index (PPI) of total production, excluding oil, registered a decrease in the average annual change rate from 9.57 to 7.84 percent, marking 5.92 percent in July (Chart 60). The

PPI subindex of exports presented greater reductions in their annual change rates (12.71 and 7.04 percent in the first and the second quarters of 2017, in this order, while in July 2017 it marked 2.63 percent). It has to do with the fact that this indicator includes goods quoted in USD, reason why this group to a greater degree reflects the Mexican peso appreciation that has been recorded over the last months. In turn, the subindex of finished merchandise prices for domestic consumption exhibited more stable annual change rates (6.36 and 6.60 percent in the first and second quarters of 2017, respectively, while in July 2017 it lied at 6.83 percent). As stated in previous Reports, the PPI subindex of finished merchandise for domestic consumption is the one with the maximum predictive power on the performance of core prices of merchandise destined to consumers.

Chart 60
Producer Price Index [1]
Annual change in percent
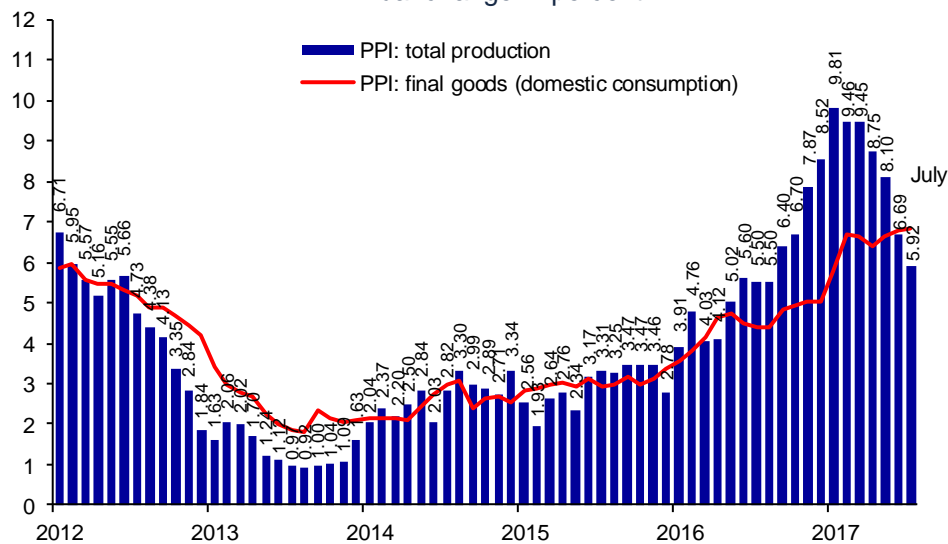
1/ Total Producer Price Index, excluding oil.
Source: Banco de México and INEGI.

3.   Economic and Financial Environment

3.1.   External Conditions

3.1.1.   World Economic Activity

World economic activity continued expanding at a moderate rate and in a generalized manner across countries and regions in the second quarter of the year. This is reflected in the favorable evolution of international trade indicators and in industrial production (Chart 61). Furthermore, the sustained rate of job creation, high levels of households' confidence and favorable financial conditions indicate that the moderate recovery of advanced and emerging economies' growth will continue in the remainder of 2017 and in 2018. Despite the improvement in the global environment, this outlook is still subject to downside risks, including those derived from high uncertainty over the U.S. economic policy, increasing geopolitical tensions across different regions, and the possibility of a more protectionist environment in international trade.

Chart 61
World Economic Activity

a) Growth Forecast of World GDP
Annual change in percent

b) Industrial Production
Annual change in percent, s. a.
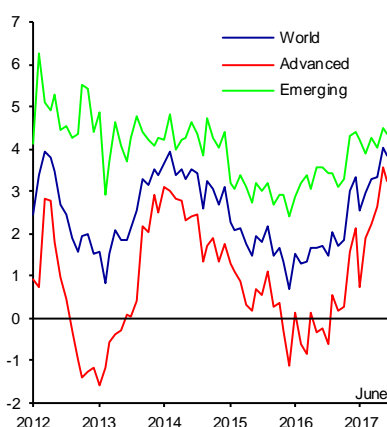
c) World Trade in Goods [1/]
Annual change in percent, s. a.

Source: IMF, WEO July 2017.

s. a. / Seasonally adjusted data.
Source: CPB Netherlands.
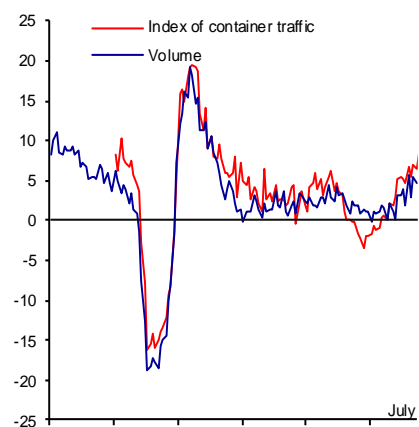
s. a. / Seasonally adjusted data.
1/ It refers to the sum of exports and imports.
Source: Institute of Shipping Economics and Logistics and CPB Netherlands.

GDP in the U.S. increased at an annualized quarterly rate of 2.6 percent during the second quarter of 2017, after expanding 1.2 percent in the first one (Chart 62a). The greater dynamism registered in this economy largely derived from a rebound in private consumption, which was supported by the improvement in the labor market and high levels of households' confidence, as well as the continuous strengthening of businesses' investment. Furthermore, net exports kept contributing positively to the dynamism of the economy, reflecting the improvement in the global environment and the weakness of the U.S. dollar during the year. In contrast, residential investment contracted during the second quarter of the year, after the recovery over the previous two quarters.

Industrial production continued expanding during the second quarter at an annualized quarterly rate of 5.2 percent, the highest over the last three years (Chart 62b). This rebound in industrial activity persisted in July, as a reflection of an increase in mining, derived from the reactivation of oil and gas extraction, the recovery of the utilities sector, and, to a lower extent, the moderate expansion of manufacturing production, in particular, non-automotive production, supported by the greater world growth and the weakening of the U.S. dollar (Chart 62c).

Chart 62
U.S. Economic Activity

a) Real GDP and Components Annualized quarterly change in percent and percentage point contributions, s. a.
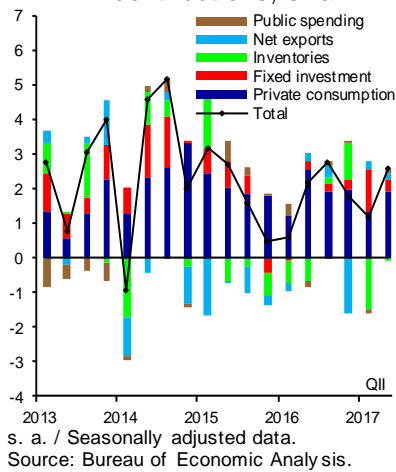
b) Industrial Production and Components
Index 1Q-2012=100, s. a.
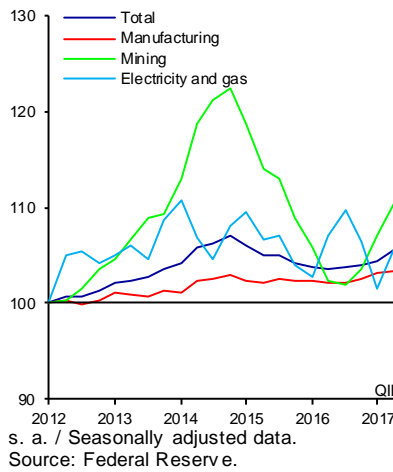
c) Manufacturing Production and Components
Index 1Q-2012=100, s. a.

s. a. / Seasonally adjusted data.
Source: Bureau of Economic Analysis.

s. a. / Seasonally adjusted data.
Source: Federal Reserve.

s. a. / Seasonally adjusted data.
Source: Federal Reserve.
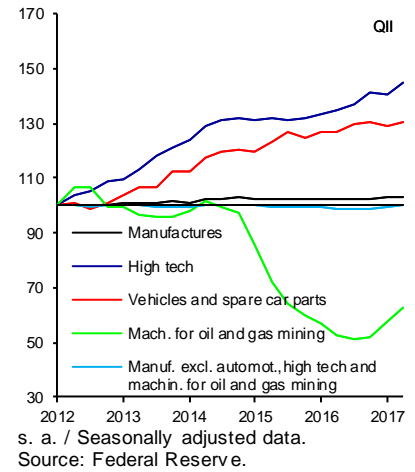
In this context, the U.S. labor market kept strengthening during the period analyzed in this Report. Indeed, during the first seven months of 2017, there was an average monthly increment of 184 thousand new jobs, which is similar to the figure registered during 2016 (Chart 63a). In accordance with this, the unemployment rate stood at 4.3 percent of the labor force in July, which was lower than the Federal Reserve estimate of this country's long-term unemployment rate. However, the increase in remunerations remained moderate (Chart 63b).

Chart 63
U.S. Labor Market

a) Monthly Change in Non-farm Payroll and
Unemployment Rate
In thousands of jobs and in percent of labor
force, s. a.

b) Wage Indicators
Annual change in percent, s. a.
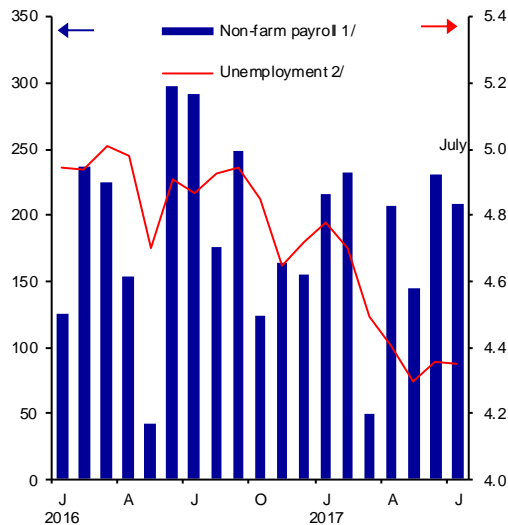
s. a. / Seasonally adjusted data.
1/ In thousands of jobs.
2/ In percent of labor force.
Source: Bureau of Labor Statistics.
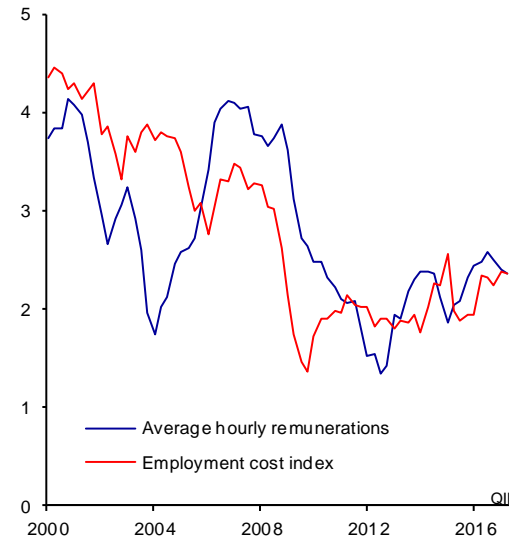
s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

It should be noted that the course of the U.S. economic policy remains uncertain. On the fiscal side, the lack of agreement to repeal and replace the health system in the short term has lowered the expectation of the extent of other proposals, such as individual and corporate tax cuts, along with the expansion of spending on infrastructure. Additionally, there is the need to extend the borrowing authority and to raise the debt ceiling for the U.S. federal government before October, which could further delay discussions of the reforms in Congress, that have been proposed by the current Administration. On the other hand, the U.S. trade policy still remains as a factor of risk, which could lead to modifications in the economic outlook at the global level.

In the Euro zone, in the second quarter of 2017 economic activity expanded at a rate of 2.5 percent in annualized terms, which was above the 2 percent growth during the first quarter and it showed an increasingly more generalized dynamism across countries and sectors (Chart 64a). The significant relaxation of monetary conditions in the region has led to an increment in bank financing, a reduction in interest rates of loans to households and corporations (Chart 64b) and a lower interest rate disparity among the member states. Favorable financial conditions have, in turn, supported the expansion of domestic demand, in particular, businesses' investment, which had been stagnant since the onset of the global financial crisis. In this context, the unemployment rate kept declining, and in June marked 9.1 percent (Chart 64c). However, the wage growth remained weak.

Chart 64
Economic Activity in the Euro Area

a) Real GDP
Index 1Q-2008=100, s. a.

b) Bank Loans to Non-financial Private Sector [1]
Annual change in percent, s. a.

c) Unemployment Rate
In percent of economically active population, s. a.

s. a. / Seasonally adjusted data.
Source: Eurostat.

s. a. / Seasonally adjusted data.
1/ Adjusted by sales and securitization.
Source: BCE.

s. a. / Seasonally adjusted data.
Source: Haver Analytics.
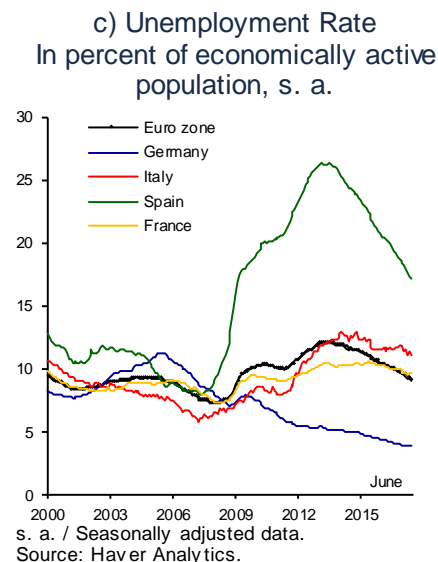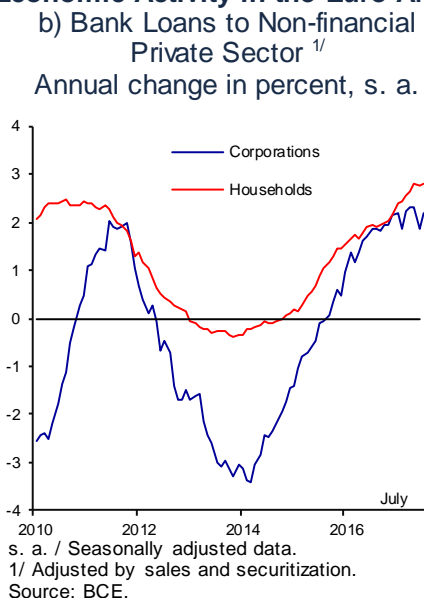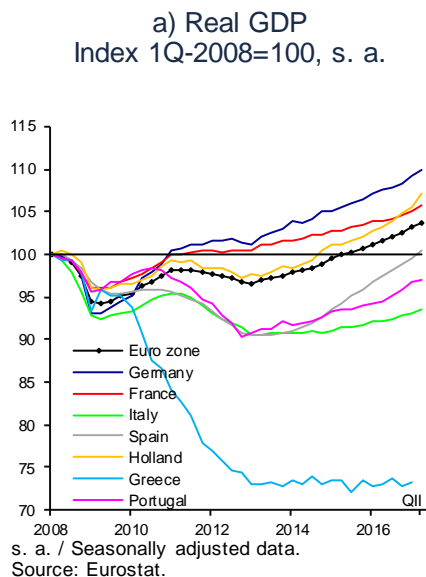
In Japan, economic activity expanded at a rate of 4 percent in annualized quarterly terms during the second quarter of the year, far above 1.5 percent observed in the first one. This was explained by the growth of domestic demand and, in particular, of spending on consumption, fixed investment and public spending, which was in contrast with the negative contribution of net exports (Chart 65a). Additionally, confidence of manufacturing companies attained its peak in the last three years, which suggests that the positive trend in investment in businesses and industrial production could continue during the third quarter. In this environment, the unemployment rate went down, and in July marked 2.8 percent of the labor force, which is its lowest level over the last two decades.

In the U.K., the growth rate of economic activity registered an annualized quarterly growth rate of 1.2 percent in the second quarter, after an expansion of 0.9 percent in the first one (Chart 65b). This rebound reflected the recovery in the services component, which offset drops in construction and industrial activity. Nevertheless, private consumption kept decelerating in the second quarter, indicating a lower consumers' confidence in view of the uncertainty related to the country's exit from the European Union, along with the weakening of the actual income derived from a moderate growth in wages and higher inflation. Despite the above, the unemployment rate kept declining and marked 4.4 percent in June.

Chart 65
Economic Activity in Japan and the U.K.

a) Japan: Real GDP and Components
Annualized quarterly change in percent and
share in percentage points, s. a.
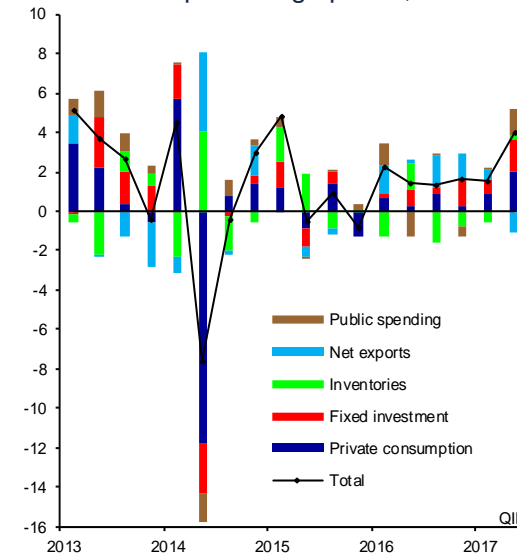
b) U.K.: Real GDP
Annualized quarterly change in percent, s. a.

s. a. / Seasonally adjusted data.
Source: Cabinet Office.
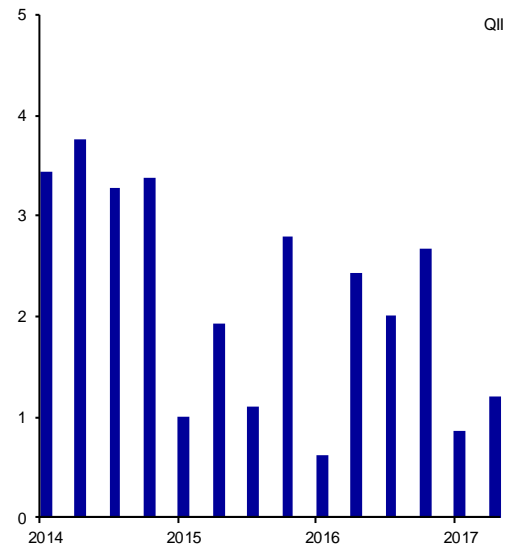
s. a. / Seasonally adjusted data.
Source: Office for National Statistics.

In emerging economies, economic activity has also been strengthening, supported by both the consolidation of the global trade growth and a higher domestic demand (Chart 66a and Chart 66b). In particular, in most Latin American countries a recovery was observed, in the emerging European countries a relatively solid growth prevailed, and in the Asian states the expansion was even greater than expected. Emerging economies benefitted from favorable international financial conditions, as the sustained capital inflow has been observed this year.

In the case of the Chinese economy, economic activity maintained the growth rate of 6.9 percent in annual terms over the first and the second quarters of 2017, hence exceeding the average observed during 2016 (Chart 66c). However, the indicators of economic activity, such as industrial production, fixed investment and retail sales in July point to a slight slowdown that is to be observed in the remainder of the year, in part reflecting a lower fiscal impulse and lagged effects of the different measures that had been adopted over the last years, and that seek to contain the important risks that still persist in its financial sector.

Chart 66
Economic Indicators of Emerging Economies

a) Emerging Economies: Industrial Production
Annual change of the 3-month moving average in percent
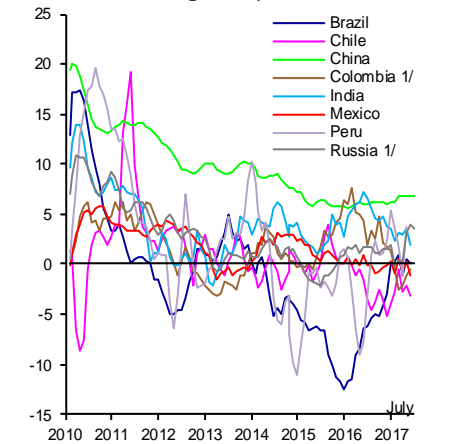
b) Emerging Economies: Exports
Annual change of the 3-month moving average in percent

c) China: Gross Domestic Product
Annual change in percent

1/ Seasonally adjusted data.
Source: Haver Analytics.
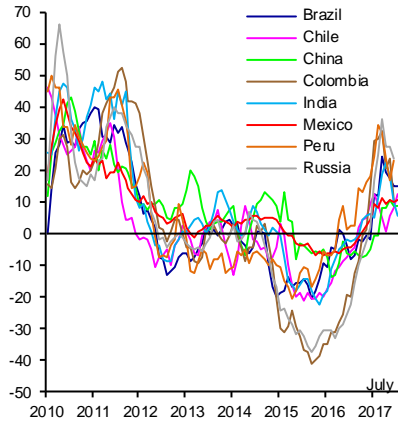
Note: Nominal figures.
Source: Haver Analytics.
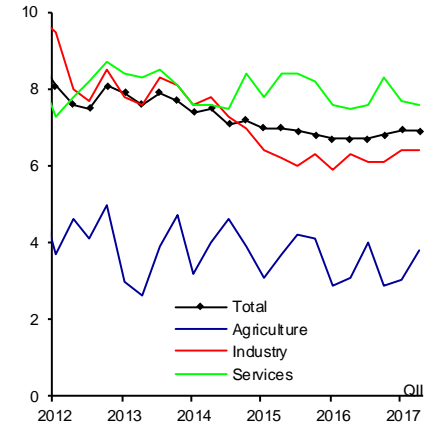
Source: Haver Analytics.

3.1.2. Commodity Prices

During the period analyzed in this Report, international commodity prices presented a volatile and heterogeneous behavior. In particular, oil prices plunged during the second quarter of this year, as a result of a higher-than-expected increase in oil production in North America, in particular in the U.S. (Chart 67a). Nevertheless, these prices strongly recovered as of the end of July, which derived from the announcement by the Saudi Arabia to further cut its crude oil exports. Meanwhile, wheat prices rebounded, as a result of unfavorable weather conditions in the U.S. and in South-East Asia, even though the observed progress has practically reverted in its entirety over the last weeks (Chart 67b). Finally, industrial metal prices increased in view of a favorable evolution of world economic activity (Chart 67c).

Chart 67
International Commodity Prices [1/]

a) Crude Oil
USD/barrel

b) Corn and Wheat
USD/bushel

c) Metals
Index 01/01/2014=100
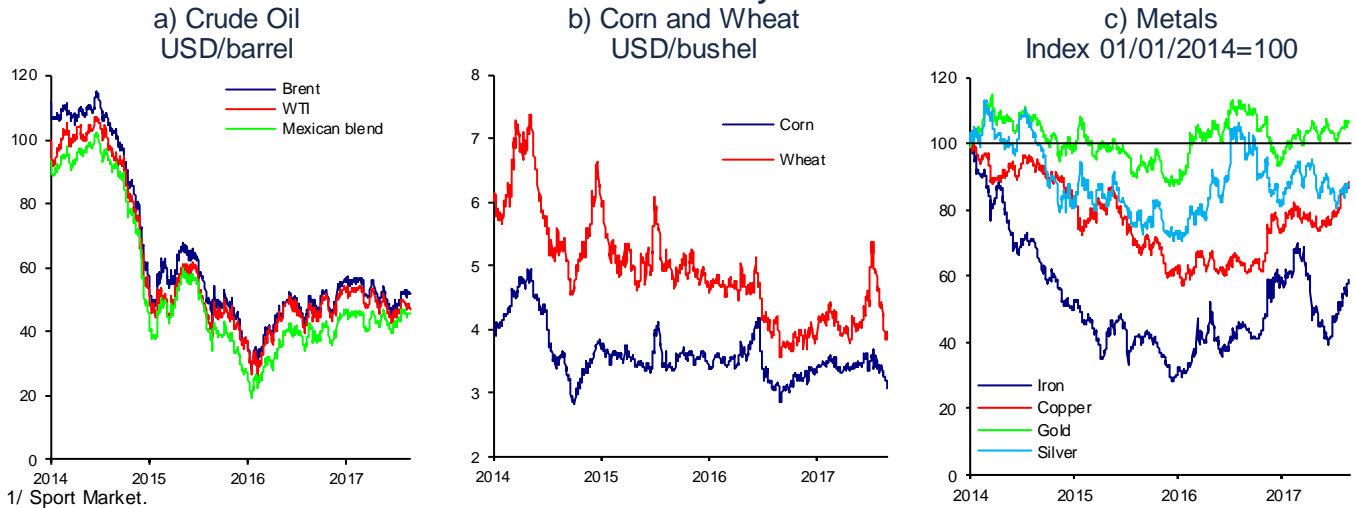
1/ Sport Market.
Source: Bloomberg.

3.1.3.   Inflation Trends Abroad

Inflation at the world level has remained low in recent months. In most advanced economies, it remained below the targets of the respective central banks, due to the reductions in energy prices, absence of wage-related pressures despite lower slack levels in the labor market, as well as, in some cases, price reductions in some items, the effects of which are considered transitory (Chart 68a). This environment of low inflation and reduced wage pressures also seems to be affected, in part, by some structural factors, such as the technological progress and globalization, in view of the moderate growth of global agregate demand.

In the U.S, the consumption deflation decreased from an annual rate of 1.8 percent in March to 1.4 percent in June. Although this weakness was due to the volatility observed in energy and food prices, the core indicator also slid from 1.6 to 1.5 percent in the said period. This is partly explained by the drop in the prices of certain goods and services, a trend that is considered transitory.

In the Euro zone, headline inflation decreased from an annual rate of 1.5 percent in March to 1.3 percent in July, while core inflation went up from 0.7 to 1.2 percent over the same period, still far below the inflation target of the European Central Bank, that is of a figure lower but close to 2 percent. It should be noted that over the recent months core inflation has been affected in its footwear and apparel items, as well as in the tourism services, derived from the calendar effect of the holiday season.

In the U.K, the headline inflation target shifted from 2.3 to 2.8 percent between March and May, which is its highest level over the last four years, to later decrease to 2.6 percent in July, in view of the persisting effect of the pound sterling depreciation, in response to the announcement of the U.K. exit from the European Union. Meanwhile, core inflation shifted from 1.8 percent in March to 2.4 percent in July.

In Japan, headline inflation went up from 0.3 percent in March to 0.5 percent in July, due to the impact of the previous increase in energy prices, while the core index, which excludes fresh food and energy products, shifted from 0 to 0.1 percent over the said period. In accordance with the Bank of Japan, weakness of prices partly derived from temporary factors, even though it considers that the tightening in the labor market and the recovery of medium- and long-term inflation expectations will allow inflation to converge to its 2 percent target in 2019.

In emerging economies, inflation pressures have moderated, as energy prices went down and the effects of the depreciation of their exchange rates, which were observed during 2016, faded. Thus, across most economies, inflation lies close to the target of their respective central banks, and even below the said target in the countries such as China, India, Korea, Hungary, Chile, Thailand, among others (Chart 68b).

Chart 68
Annual Headline Inflation in Advanced and Emerging Economies, and Reference Interest Rates

a) Advanced Economies: Headline Inflation In percent	b) Emerging Economies: Headline Inflation In percent	c) Referent Rate of Selected Central Banks Implicit in OIS Curve [1] at the End of 2018 In basis points
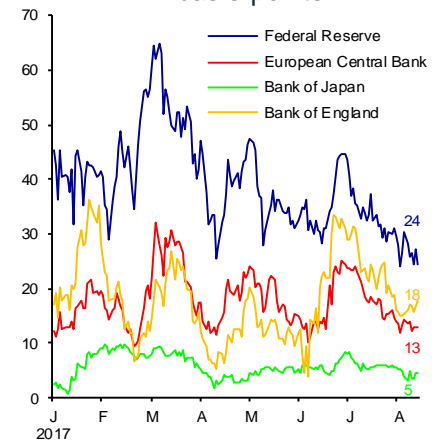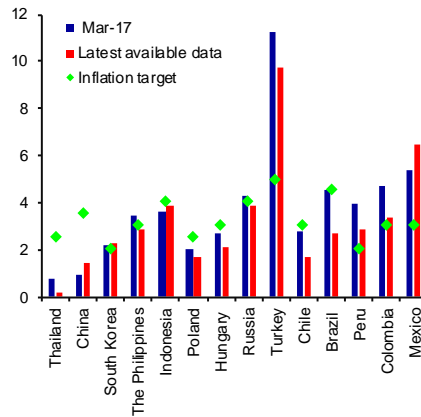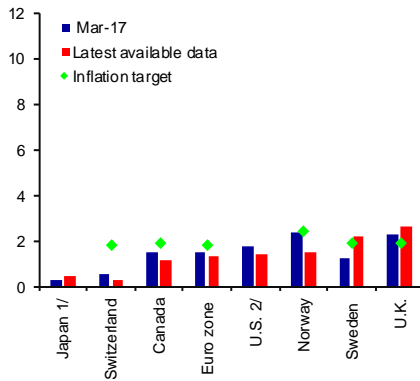
1/ Excludes fresh foods.
2/ It refers to consumption deflator. Seasonally adjusted data.
Source: Haver Analytics.

Source: Haver Analytics.

1/ OIS: fixed interest rate swap in which the fixed interest rate is the overnight interest rate.
Source: Banco de México with data from Bloomberg.

3.1.4.   International Monetary Policy, and Financial Markets

In this environment of persisting weakness of inflation and its expectations, central banks of the main advanced economies maintained accommodative monetary policy stances. Even though in the future a gradual withdrawal of extraordinary stimulus packages is anticipated, the outlook persists that these stances will remain lax in the near future and will subsequently slowly approach a more neutral stance.

In its meeting of July, the U.S. Federal Reserve decided to maintain the reference interest rate unchanged, after having raised it by 25 basis points in its meeting of June, hence recognizing that inflation has declined and lies below its 2 percent target. In its latest press release, this Institution confirmed that the most appropriate strategy remains that of a gradual adjustment of the monetary policy stance. In line with that, the Federal Reserve indicated that it expects to start the process of

reducing its balance sheet relatively soon. In this context, and given moderate economic growth and the good performance of the labor market, the Federal Reserve is anticipated to announce in September 2017 the beginning of the reduction in the balance sheet size and that it will possibly increase its reference interest rate in its meeting of December. Still, reference interest rate futures reflected a slower upside trajectory as compared to that forecast up until some months ago, in view of weak readings of inflation in recent months (Chart 68c).

Meanwhile, in its meeting of July, the ECB maintained unchanged its reference interest rate, leaving open the possibility of extending its asset purchase program, if necessary. This occurred after this Institution eliminated from its press release the reference to a possible further reduction in its policy rates in its June meeting, as it considered the risks to growth as balanced. Furthermore, the ECB suggested that, in view of an improvement in the macroeconomic situation of the region, it may announce a reduction to the monthly amount of asset purchase in autumn, which may commence in 2018. However, it stressed that the monetary conditions will remain accommodative for a relatively prolonged period.

In its meeting of August, the Bank of England also maintained its monetary stance unchanged, just like in its meeting of June. It should be noted that in its Committee there was consensus that the interest growth rate will be gradual, reflecting doubts over the strength of the economic activity. In this regard, this institution confirmed that its monetary stance will continue depending on the balance between an inflation higher than its target and the level of slack in the economy, without overlooking inflation risks derived from the sterling pound depreciation. In its latest press release it signaled that, if the economy evolves in line with its outlook, monetary conditions will have to tighten at a less gradual rate than that currently reflected by implicit market rates.

In its meeting of July, the Bank of Japan maintained unchanged the amount of its asset buying program and its guide to manage the yield curve. Although this institution made a downside revision to its inflation outlook and postponed the time when it estimates to attain its 2 percent target until 2019, it was confident that a significant increase in inflation will be observed, due to a higher economic growth and lower slack that have been recently registered in the labor market.

Most emerging economies have faced lower inflation pressures, even registering cuts in the reference interest rates in such countries as Brazil, Colombia, Peru and South Africa. Still, in some economies, the central banks increased the policy interest rate in response to idiosyncratic factors. This was the case in Mexico, Turkey and the Czech Republic, among others.

During most of the period covered by this Report, international financial markets operated in an environment of low volatility, despite the persisting monetary normalization process in the U.S., the uncertainty related to the economic policies that can be implemented in the said economy and the intensification of geopolitical risks across certain regions. In general, financial asset prices seem to be incorporating a scenario of greater global economic recovery relative to that estimated some months ago, lower political risks in the Euro zone and the perspective that the environment of ample liquidity and low interest rates will maintain for a long period.

In this context of a lower risk aversion, the expectation that financing costs will remain low, along with an environment of low volatility, propitiated search for yield by institutional investors by means of portfolio readjustments towards higher-risk market assets (Chart 69a). Indeed, capital flows to emerging economies persisted, both fixed-income and variable-income assets, and most currencies in these economies appreciated against the U.S. dollar (Chart 69b and Chart 69c).

In advanced economies, although stock markets presented a mixed performance, most of the main indices continued benefitting from a better growth outlook and solid corporate results, and even some of these attained new historic highs (Chart 70). On the other hand, even though sovereign yields in these economies remained at historic lows, recently an increment in interest rates has been observed, particularly in longer-term bonds, in view of the expectation that central banks will continue with the process, albeit gradual, of the normalization of the monetary policy.

Although the probability of extreme risks, which could affect the performance of financial markets, has lowered during the second quarter with respect to the first one, it remains high. In this sense, there is still a risk of a possible disorderly adjustment in financial markets, given high asset valuation and risks related to the uncertainty over the adoption of the U.S. fiscal reform, of a greater-than-estimated tightening in global financial conditions, of the process of reduction in the Federal Reserve balance, the escalation of geopolitical risks and the possibility that barriers to international trade and investment are created.

Chart 69
Financial Indicators in Selected Emerging Economies

a) Volatility in International Financial Markets (VIX) [1]
Index 01/01/2007=100
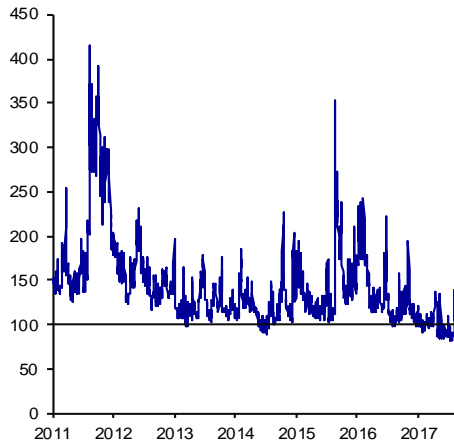
b) Exchange Rate
Index 01/01/2015=100

c) Stock Markets
Index 01/01/2015=100

1/ The VIX index is a weighted indicator that measures implied volatility in the options' market for S&P.
Source: Bloomberg.
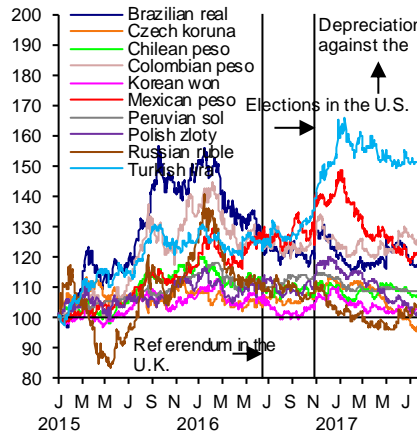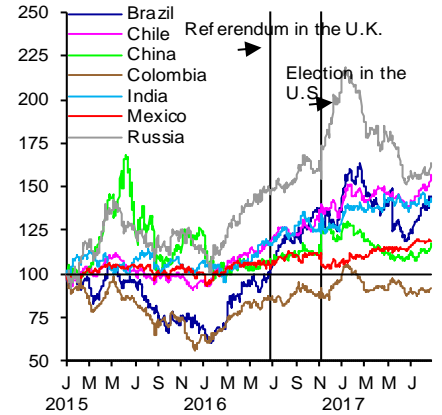
Chart 70
Financial Indicators in Selected Advanced Economies
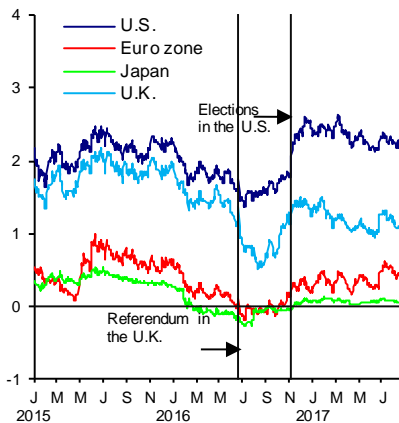
a) 10-Year Bond Yield
In percent

b) Exchange Rate
Index 01/01/2015=100

c) Stock Markets
Index 01/01/2015=100

Source: Bloomberg.
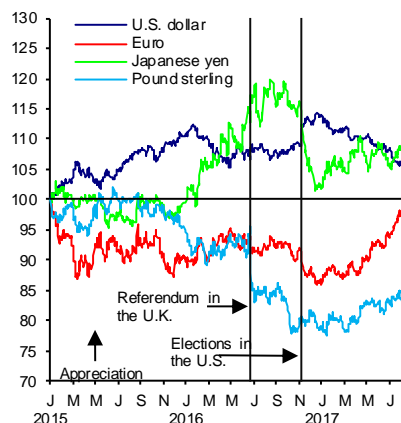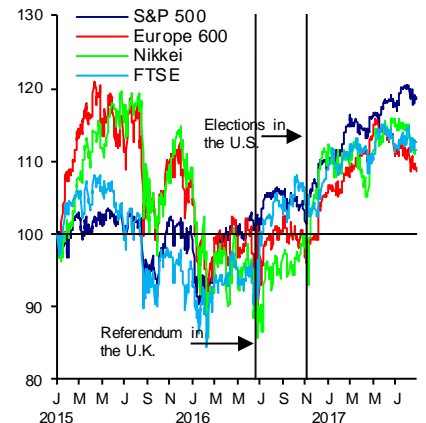
3.2.   Evolution of the Mexican Economy

3.2.1.   Economic Activity

In the second quarter of 2017, the Mexican economy continued expanding, although at a slightly lower growth rate than in the previous one. This expansion reflected the positive trend in exports and private consumption, while investment remained weak.

Regarding external demand, in the period April - July 2017, the gradual strengthening of the economic activity at the global level and the accumulated depreciation of the real exchange rate over the last years contributed to the continuous recovery of Mexico's manufacturing exports, after the negative trend they exhibited in 2015 and in early 2016. This reactivation was observed in exports destined to the U.S. and to the rest of the world (Chart 71a). In the same vein, the improvement involved both automotive and non-automotive manufacturing exports (Chart 71b and Chart 71c). In contrast, oil exports declined in the second quarter of the year and remained at particularly low levels. This contraction was a consequence of a lower average price of the Mexican crude oil blend for exports and a reduction in the crude oil platform for exports relative to the previous quarter (Chart 71d).

Chart 71
Mexican Exports
Index 2008=100, s. a.

a) Total Manufacturing Exports   b) Non-automotive Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

c) Automotive Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

d) Oil Exports and Crude Oil Export Platform

s. a. / Seasonally adjusted series based on data in nominal dollars.
1/ 3-month moving average of daily barrels of the seasonally adjusted series.
Source: Banco de México with data from *PMI Comercio Internacional*, S.A. de C.V; and SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

The monthly indicator of private consumption in the domestic market maintained a positive trend, despite a certain deceleration in the period of April – May, as compared to the second half of 2016. It stands out that consumption of domestic goods has lost dynamism, while imported goods' consumption has recovered, which, in part, could be associated to the recent appreciation of the national currency against the U.S. dollar (Chart 72a and Chart 72b). Likewise, it is notable that services' consumption has continued to show a high growth rate.

iii.   In this context, the determinants of private consumption have remained at high levels, although they have shown a certain deceleration so far this year. In particular, the real wage bill has remained at levels above those observed in 2008, despite the stagnation during the recent months, as a consequence of the effect of inflation on real earnings (Chart 22a). Additionally, income from remittances remained especially high, while the growth rate of credit to households moderated (Chart 22b and see Section 3.2.3). On the other hand, consumer confidence kept recovering, after a strong plunge last January, although it remained at low levels with respect to the end of 2015 and the beginning of 2016 (Chart 22c).

iv.   More timely consumption indicators, but with a smaller coverage, such as revenues of retail commercial establishments and light vehicles' sales have decelerated. Indeed, an incipient negative trend was observed in domestic vehicle sales, following the expansion registered in 2016, while revenues of retail commercial establishments have presented a lower dynamism, relative to that observed in the first half of 2016 (Chart 21c).

Chart 72
Consumption Indicators
Index 2008=100, s. a.

a) Monthly Indicator of Domestic Private Consumption

b) Components of the Monthly Indicator of Domestic Private Consumption

c) Domestic Retail Sales of Light Vehicles and Revenues of Retail Businesses

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from the Mexican Automotive Industry Association (AMIA) and the Monthly Survey of Commercial Establishments (EMEC), INEGI.

Chart 73
Determinants of Consumption
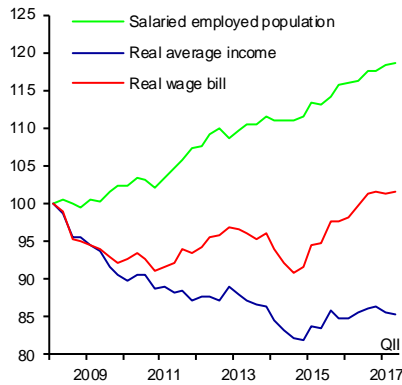
a) Total Real Wage Bill
Index I-2008=100, s. a.

b) Workers' Remittances
Billion, constant USD and MXN, s. a.

c) Consumer Confidence
Index January 2003=100, s. a.

s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data from the National Employment Survey (ENOE), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Prices as of the second fortnight of December 2010.
Source: Banco de México and INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: National Consumer Confidence Survey (ENCO), INEGI and Banco de México.

In the period of April – May 2017, stagnation of investment, which had been registered since mid-2015, prevailed (Chart 74a). In particular, investment in machinery and equipment had a weak performance, derived from an unfavorable change in trend in its domestic component and the fact that the imported component does not present clear signs of recovery (Chart 74b). Regarding investment spending on construction, a decreasing trend persisted as a consequence of the

prevailing negative trend in non-residential construction, which had been observed for several years, while in recent months a declining trajectory has emerged in the residential component (Chart 74c). In connection with the above, by contracting sector, the unfavorable performance of spending on construction has resulted from the fact that the negative trajectory of public investment complemented the slowdown in private spending this year so far (Chart 74d). It should be noted that possibly the persisting uncertainty over the future bilateral Mexico – U.S. relation has negatively affected private investment in Mexico in recent quarters.

Chart 74
Investment Indicators

a) Investment and its Components
Index 2008=100, s. a.

b) Investment in National and Imported
Machinery and Equipment
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

c) Investment in Residential and Non-
residential Construction
Index 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System, INEGI.

d) Real Value of Production in Construction
by Contracting Institutional Sector
Index January 2008=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from ENEC,
INEGI. Seasonally adjusted by Banco de México, except
for the total.

Regarding the performance of economic activity from the production side, in the second quarter of 2017 GDP grew 0.57 percent with respect to the previous period, based on seasonally adjusted data, after having presented quarterly changes of 0.72 and 0.66 percent in the fourth quarter of 2016 and in the first one of 2017, in the same order. Based on seasonally adjusted data, the Mexican economic activity exhibited an annual growth rate of 3.0 percent in the period of April – June 2017, after annual increments of 2.3 and 2.6 percent in the third quarter of 2016 and in the first one of 2017, respectively. Based on non-seasonally adjusted data, in the reference quarter, GDP expanded at an annual rate of 1.8 percent, which compares to an annual increase of 2.3 percent in the fourth quarter of 2016 and of 2.8 percent in the period of January – March 2017 (Chart 75).

Chart 75
Gross Domestic Product

a) Quarterly Change
Percent, s. a.

b) Annual Change
Percent
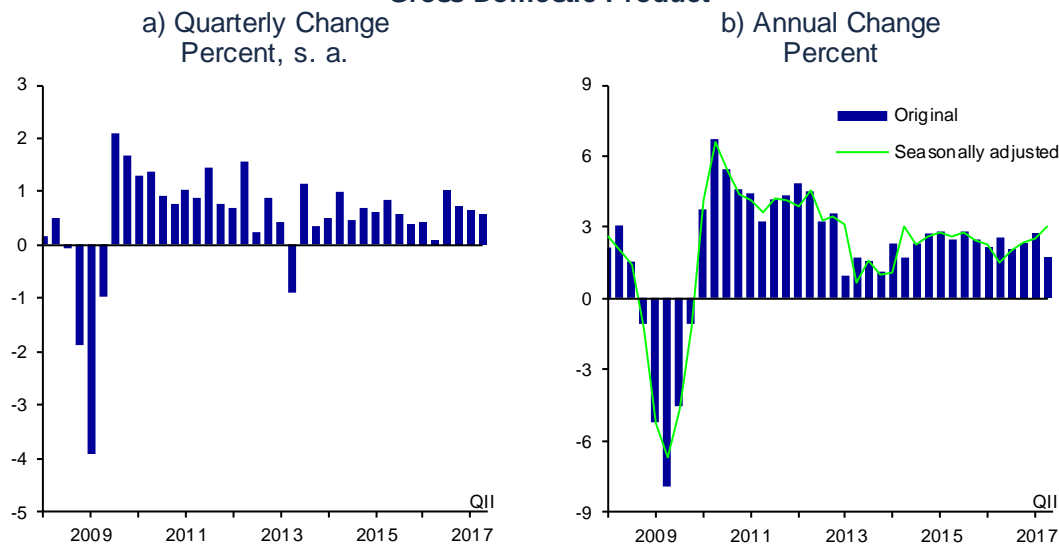
s. a. / Seasonally adjusted data.
Source: Mexico's National Accounts System, INEGI.

The expansion of economic activity in the second quarter of 2017 kept reflecting the dynamism of tertiary activities, while the stagnation, which the industrial activity had been presenting since mid-2014, prevailed; in contrast primary activities decreased (Chart 25a). In particular:

i.   Within industrial activity, in the period being reported, manufacturing activity lost dynamism with respect to the second half of 2016 (Chart 76b). This performance reflected an unfavorable change of trend in the non-transport manufacturing aggregate, while transport equipment maintained a positive trajectory (Chart 77). In particular, the quarterly contraction of the non-transport manufacturing aggregate was mainly explained by the drop in the subsectors of chemical industry; manufacturing of oil- and carbon-derived products –in part, due to low refinement levels, which are considered to be transitory–; manufacture of metal products; and basic metal industries. In contrast, growth in the following subsectors stands out: computer equipment, communications, measurement and other equipment, electronic components and accessories; and beverage and tobacco industry, which is congruent with the exports' dynamism presented by these aggregates since the second half of 2016.

ii.   The construction industry maintained a weak performance (Chart 76b). Specifically, even though the construction sector has somewhat recovered, it was slightly offset by the negative trend in the spending on civil engineering construction, which largely resulted from a lower volume of works contracted by the public sector.

iii.   Likewise, in the period of April – June 2017, mining sector kept decreasing, although the degree of deterioration moderated over the last months with respect to 2016 and early 2017, as a result of a stabilization in the crude oil production platform (Chart 76b). However, by the end of July and in early August, the crude oil production platform contracted

considerably again (Chart 78a). In addition, mining-related services remained at particularly low levels (Chart 78b).

iv.   In contrast, the electricity, water and gas pipeline supply sector somewhat improved during the last months, albeit without attaining the levels achieved in 2016 (Chart 76b).

Chart 76
Production Indicators
Index 2008=100, s. a.
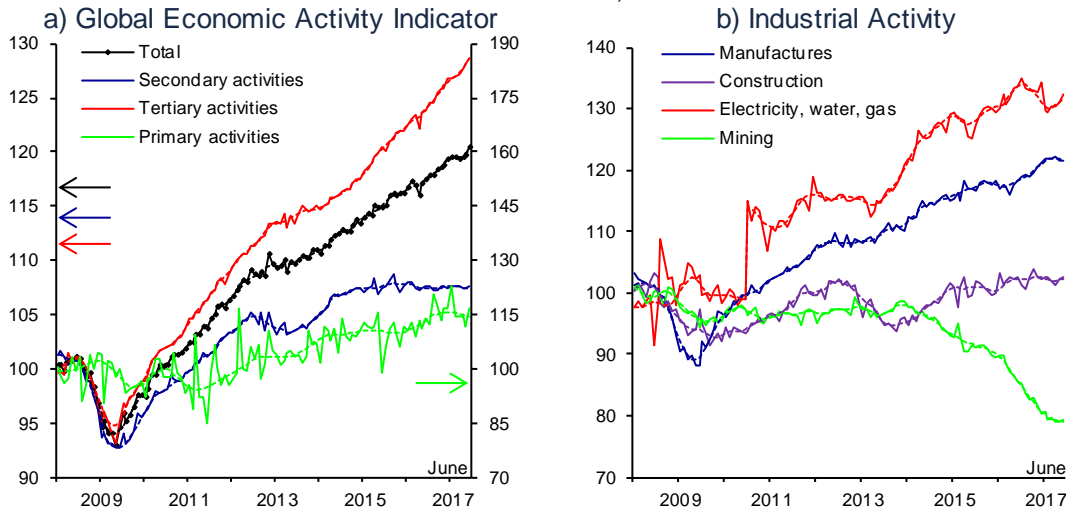
a) Global Economic Activity Indicator

b) Industrial Activity

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

Chart 77
Manufacturing
Index 2008=100, s. a.
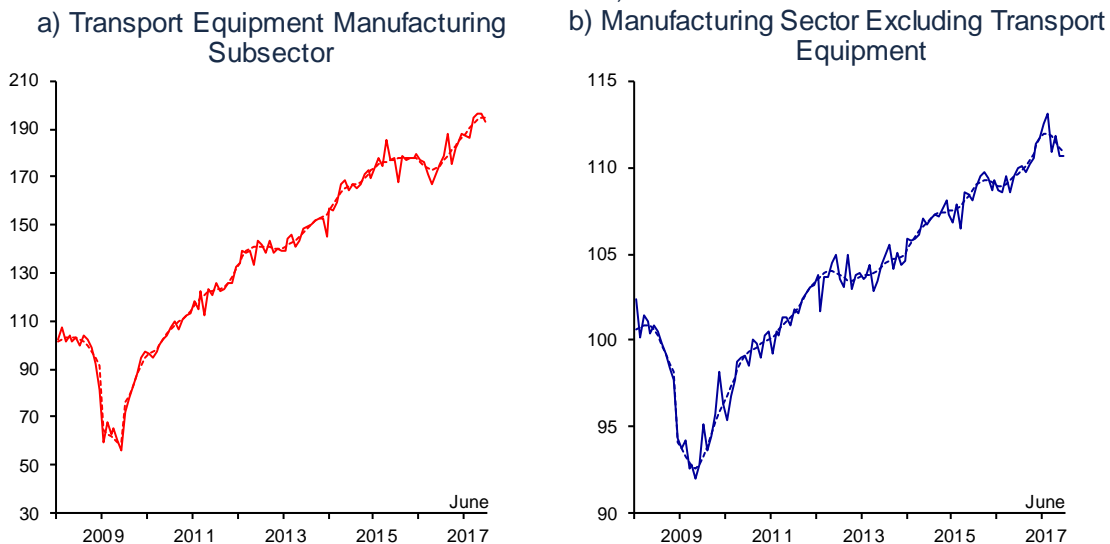
a) Transport Equipment Manufacturing Subsector

b) Manufacturing Sector Excluding Transport Equipment

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared and seasonally adjusted by Banco de México with data from the Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

Chart 78
Oil Production Platform and Mining Sector

a) Crude Oil Production Platform
Thousands of barrels per day, s. a.

b) Mining Sector Components
Index 2008=100, s. a.
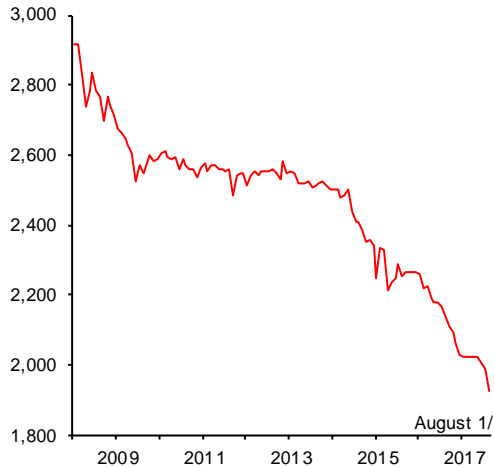
s. a. / Seasonally adjusted data.
1/ Data as of August 20, 2017.
Source: Seasonal adjustment by Banco de México with data from
PEMEX Institutional Database.
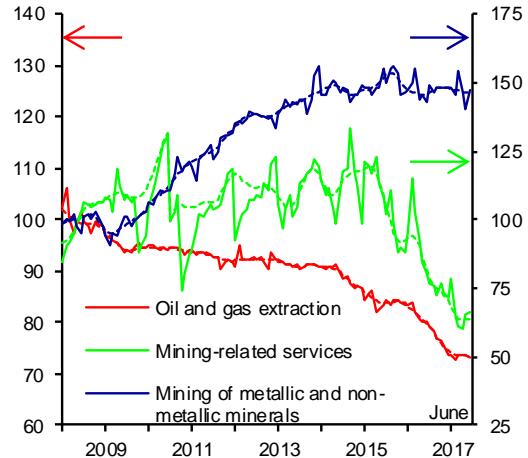
s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National
Accounts System (SCNM), INEGI.

v.   In the period of April – June 2017, services maintained a positive trend. This performance was largely contributed to by the growth in the items of financial services and insurance; mass media information; transport, mail and warehousing; wholesale and retail trade; and temporary lodging services, as well as preparation of food and beverages (Chart 79). In particular, the performance of the last two items has been congruent with the dynamism presented by foreign trade and tourism in the country.

vi.   Contraction of primary activities in the second quarter of 2017 principally derived from a lower planted surface in the spring – summer cycle, as well as from a decline in the production of some crops, mainly sugar cane and avocado.

Chart 79
Gross Domestic Product: Services
Index 2008=100, s. a.
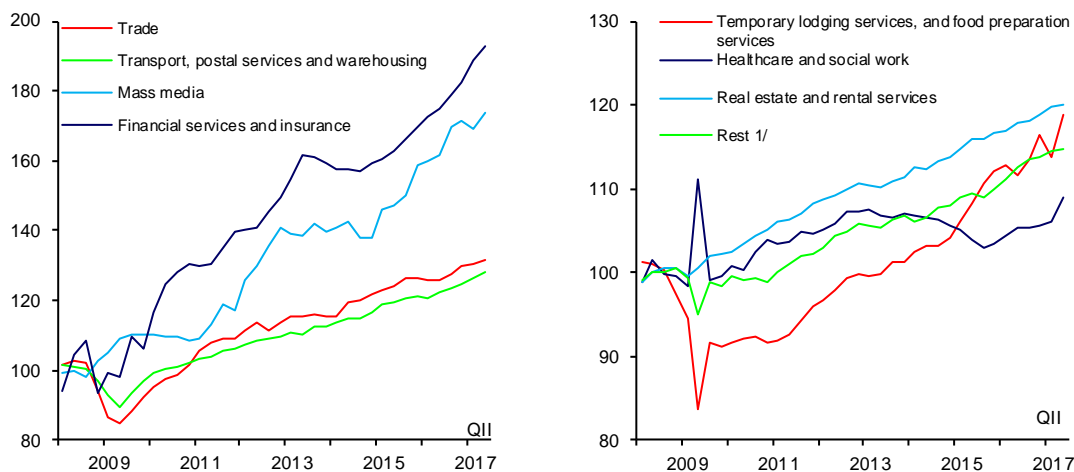
s. a. / Seasonally adjusted data.
1/ It includes professional, corporate services; business support-related services; educational services, recreation; other services and government activities.
Source: Mexico's National Accounts System (SCNM), INEGI.

In the second quarter of the year, the current account deficit was lower than in the same quarter of 2016. In particular, in the period of April – June 2017 the current account deficit was 0.1 percent of GDP (USD 0.3 billion), figure that is compared to 2.3 percent of GDP (USD 6.1 billion) registered in the second quarter of 2016 (Chart 80b and Chart 80c).[18] The annual decrease in the current account deficit largely derived from a reduction in the deficit of the merchandise trade balance. Indeed, in the second quarter of 2017 the total trade deficit attained USD 0.1 billion, an amount that is below that registered in the second quarter of 2016 of USD 3.1 billion (Chart 80a). In turn, this performance derived from an increase in the non-oil balance, which shifted from a deficit in the second quarter of 2016 to a surplus in the period of April – June 2017, thus accumulating three consecutive quarterly surpluses, in a context in which the gradual strengthening of economic activity at a global level and a more depreciated level in real terms of the national currency contributed to the continuous recovery of Mexican manufacturing exports. In contrast, the oil trade deficit kept expanding, mainly as a result of the contraction in the crude oil platform for exports and of greater imports of oil-derived products. The annual reduction in the current account deficit was also considerably contributed to by a lower deficit in the primary income balance, and, to a lower degree, the increment in the surpluses of the balances of remittances and travels.

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[18] Given that various components of the current account have a seasonal character, the comparison relative to the results reported for the same period of last year gains relevance.

Chart 80
Trade Balance and Current Account

a) Trade Balance
USD millions

Source: SAT, SE, Banco de México, INEGI.
Merchandise Trade Balance. SNIEG.
Information of National Interest.

b) Current Account
USD millions

Source: Banco de México.

c) Current Account
Share of GDP

Source: Banco de México and INEGI.
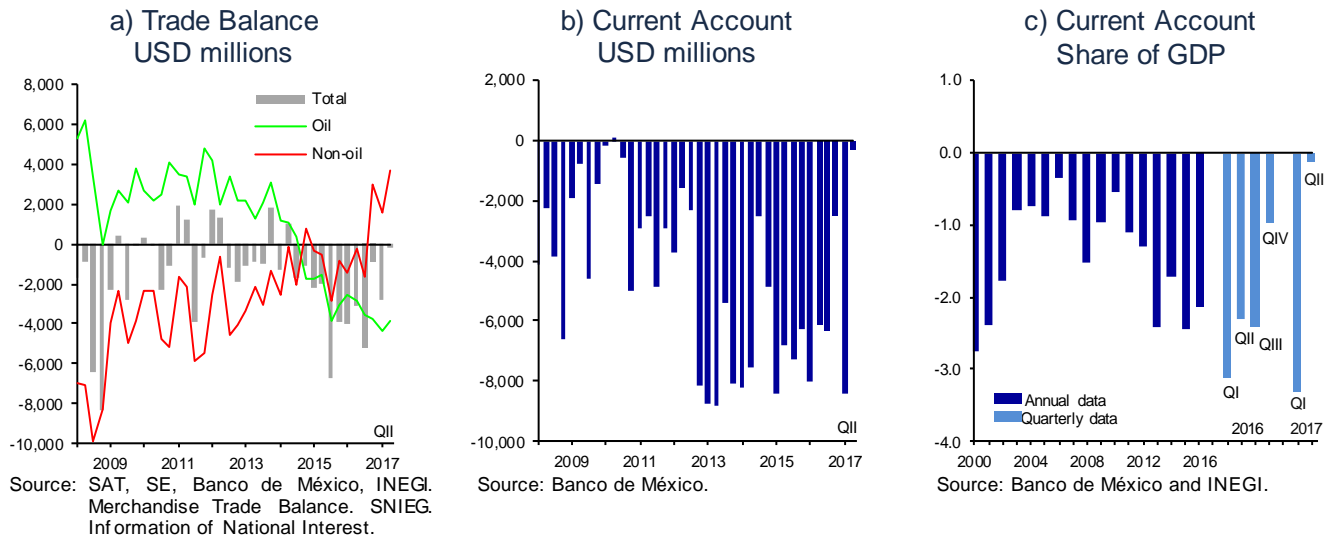
3.2.2.　　Labor Market

In the reference period, labor market conditions continued to tighten, so that said market appeared to have no slack (Chart 81). In particular, both the national and urban unemployment rates maintained a downward trend, while, even though the labor participation rate kept a certain negative trend, the employed population increased. Similarly, the number of IMSS-affiliated jobs kept presenting a positive trajectory, which contributed to a decline in the informal employment rate. Accordingly, both the urban unemployment rate and the labor informality rate remained around their lowest levels in the last twelve years.[19]

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[19] Currently, both the unemployment rates and the labor informality rates are measured based on the results of the National Employment Survey (ENOE), which began in 2005.

Chart 81
Labor Market Indicators

a) National and Urban Unemployment Rates
Percent, s. a.

b) National Labor Participation Rate [1]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: National Employment Survey (ENOE), INEGI.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
1/ Percentage of Economically Active Population (EAP) with
respect to the population of 15 years and older.
Source: National Employment Survey (ENOE), INEGI.

c) IMSS-insured Workers, Total IGAE and
Working Population
Index 2012=100, s. a.

d) Informal Sector Employment [1]
and Labor Informality [2]
Percent, s. a.

s. a. / Seasonally adjusted data.
1/ Permanent and temporary jobs in urban areas. Seasonal
adjustment by Banco de México.
Source: Prepared by Banco de México with data from IMSS and
INEGI (SCNM and ENOE).

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
1/ It refers to individuals working in non-agricultural economic
units, operating with no accounting records and with
households' resources.
2/ It includes workers who, besides being employed in the
informal sector, work without social security protection, and
whose services are used by registered economic units, and
workers self-employed in subsistence agriculture.
Source: National Employment Survey (ENOE), INEGI.

The main wage indicators recorded nominal growths above 4 percent in the quarter
being reported (Chart 82). In particular, the annual change rate of the average wage
of salaried workers in the economy was 4.4 percent in the period of April – June

2017. Likewise, in the reference period, the daily wage associated to IMSS-affiliated workers showed an annual growth of 4.9 percent, while the growth rate of contractual wages negotiated by firms under federal jurisdiction was, on average, 4.6 percent.

Chart 82
Wage Indicators
Annual change in percent

a) Average Wage of Salaried Workers according to National Employment Survey [1]

b) Daily Wage of IMSS-insured Workers [2]

c) Nominal Contractual Wage [3]
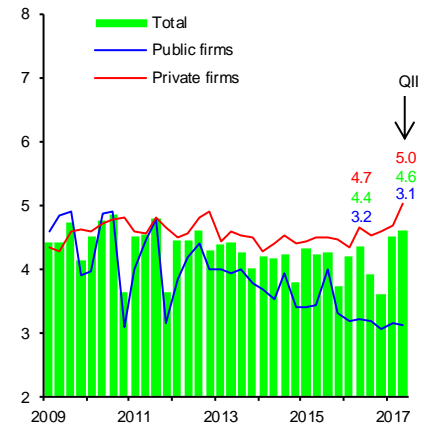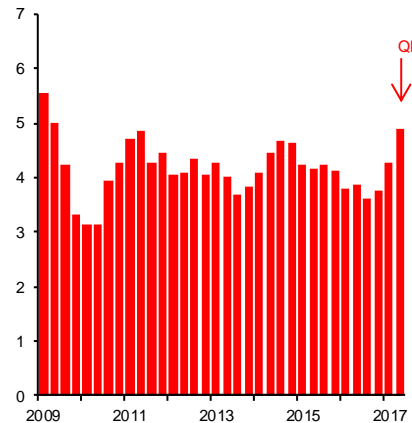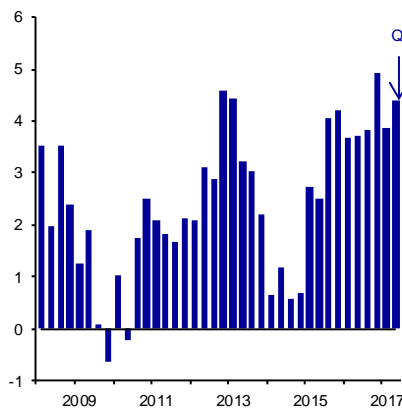
1/ To calculate average nominal wages, the bottom 1 percent and the top 1 percent in the wage distribution were excluded. Individuals with zero reported income or those who did not report it are excluded.
2/ During the second quarter of 2017, on average 19.1 million workers were registered with IMSS.
3/ The contractual wage increase is an average weighted by the number of involved workers. The number of workers in firms under federal jurisdiction that report their wage increases each year to the Secretary of Labor and Social Welfare (STPS) is approximately 2.3 million.
Source: Calculated by Banco de México with data from IMSS, STPS and INEGI (ENOE).

3.2.3.   Financial Saving and Financing in Mexico [20]

In the second quarter of 2017, the sources of financial resources of the economy decelerated. In particular, their real annual change was 0.6 percent, which was below 1.7 percent recorded in the previous quarter. This derived from a lower growth rate of domestic sources, in a context in which the external sources kept contracting (Chart 83a). In this environment of a lower growth of the sources of financial resources, different sectors of the economy decreased their use of resources in a generalized manner (Chart 83b). In particular, financing to the public sector kept reducing as a reflection of the fiscal consolidation strategy by the Federal Government. In fact, even excluding the effect of Banco de México's operational surplus, financing to the federal public sector observed a deceleration in its growth rate. In the same vein, total financing destined to the private sector kept growing at relatively low real rates, even though with certain heterogeneity in its components.

As regards domestic sources of the financial resources of the economy –measured as the monetary aggregate M4 held by residents–, their growth rates moderated from 3.7 to 1.9 percent in real annual terms between the first two quarters of 2017, fundamentally reflecting the performance of economic activity, as well as the impact of higher inflation on growth in real terms of the balance of financial assets (Chart 84a). This resulted from a deceleration in both voluntary and compulsory M4 (Chart

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[20]   In this section, unless otherwise stated, growth rates are expressed in real annual terms and are calculated based on balances adjusted due to exchange rate and asset price variations.

84b). With regard to the latter, SIEFORES (mutual funds specialized in pension funds) have substituted part of their holding of instruments that are part of monetary aggregates, such as fixed-income national securities, in favor of other type of instruments, such as foreign securities or equity instruments. Meanwhile, the external sources contracted 1.3 percent in real annual terms in the second quarter of the year, which equals the figure registered in the first one (Chart 84a). This largely derived from a sustained decrease in external resources (both bank and market resources) destined to finance businesses in Mexico. In contrast, non-resident financial saving in Mexico continued recovering with respect to the previous year, reflecting a greater holdings of short-term government bonds by foreigners, while the holdings of medium- and long-term securities remained practically unchanged (Chart 84c). Similarly, investment in variable-yield securities by non-residents has been increasing.

Chart 83
Total Funding of the Mexican Economy (Sources and Uses)
Real annual change in percent [1]

a) Sources

b) Uses

p/ Preliminary data.
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variation.
2/ It includes the monetary aggregate M4 held by residents.
3/ It includes the monetary aggregate M4 held by non-residents, foreign financing for the federal government, public institutions and enterprises, commercial banks' foreign liabilities and external financing to the non-financial private sector.
4/ It is made up by currencies and gold reserves of Banco de México, free of any security rights and the availability of which is not subject to any type of restriction; the position in favor of Mexico with the IMF derived from contributions to the said entity; currency obtained from financing to realize foreign exchange regulation of the IMF and other entities of international financial cooperation or groups of central banks, of central banks and other foreign legal entities that act as financial authorities. Currencies pending to be received for sales transactions against the national currency are not considered, and Banco de México's liabilities in currency and gold are deducted, except for those that are for a term longer than 6 months at the moment of reserves' estimation, and those corresponding to financing obtained to carry out the above mentioned foreign exchange regulation. See Article 19 of Banco de México's Law.
5/ It refers to the total portfolio of financial intermediaries, of the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), and of the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste), the issuance of domestic debt and external financing. It includes restructuring programs.
6/ It includes financing to the federal public sector, as well as financing to states and municipalities.
Source: Banco de México.

Chart 84
Monetary Aggregate M4 $^{1/}$
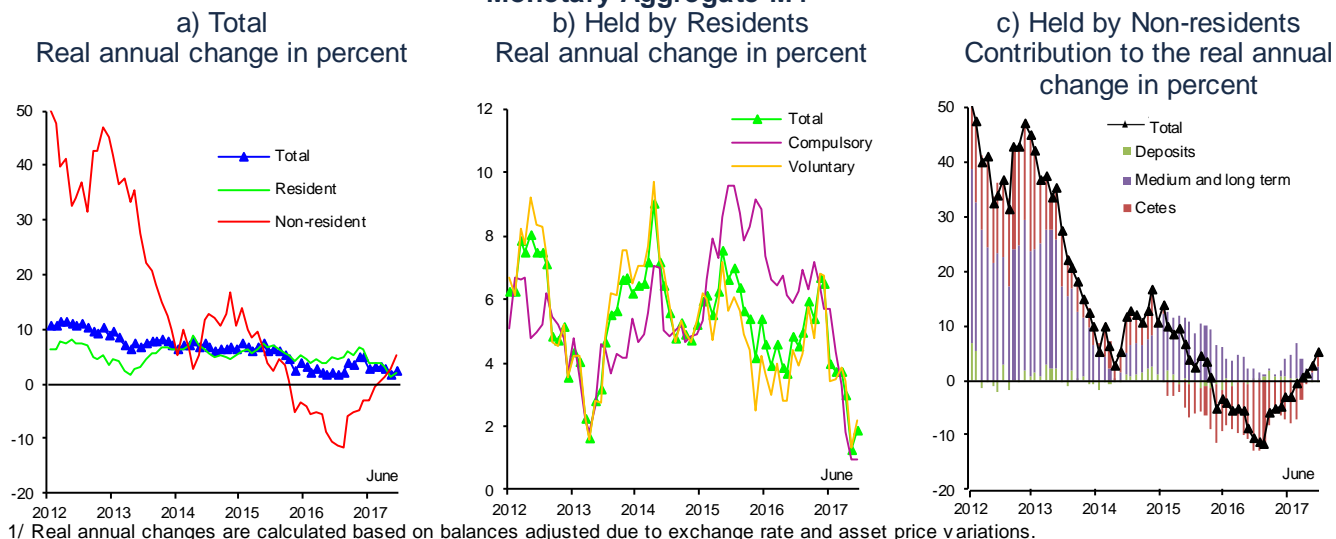
a) Total Real annual change in percent	b) Held by Residents Real annual change in percent	c) Held by Non-residents Contribution to the real annual change in percent

1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variations.

As regards the use of financial resources of the economy, the growth rate of financing to the public sector contracted in real annual terms for the second consecutive quarter. In particular, its growth rate in the second quarter of 2017 was -2.3 percent, which compares to -2.6 percent in the previous one. This is accounted for by the fiscal consolidation effort undertaken by the Federal Government, greater tax revenue and lower public expenditure with respect to the program, besides the delivery of Banco de México's operational surplus, which amounted to MXN 321.7 billion in the first quarter of the year. As indicated in the previous Report, it is important to stress that financing to the federal public sector would have recorded a deceleration in its real annual growth rate with respect to the same quarter of the previous year, even excluding the effect of Banco de México's operational surplus on the historical balance of the Public Sector Borrowing Requirements. On the other hand, the stock of international reserves in the second quarter of 2017 slightly reduced with respect to the level in the first quarter of the year.[21]

Total financing to the non-financial private sector slightly moderated its growth rate during the second quarter of 2017, and registered a real annual growth rate of 1.5 percent, figure that is compared to 1.7 percent in the first quarter of 2017 (Chart 85a). Within it, its components maintained a mixed performance, higher growth of domestic financing to firms being notable –which principally reflects the substitution

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[21] The real annual change of the international reserve in Mexican pesos is obtained with the method of revalued cash flows. It consists in multiplying the absolute annual change in USD by the average exchange rate of the period; adding to this amount the initial balance of international reserves in Mexican pesos, to obtain the final adjusted balance of international reserves in Mexican pesos; deflating both balances in Mexican pesos with the CPI, and, finally, calculate its annual change. Thus, in term of U.S. dollars, between the second quarter of 2016 and the same quarter of 2017, international reserves diminished by USD 3.2 billion. This figure expressed in Mexican pesos using the average exchange rate in the period equals an annual decrease of MXN 251 billion, which, complemented by the balance of MXN 3,399 billion of international reserves as of the second quarter of 2016, implies a real annual change of -7.4 percent. As a reference, the annual nominal change of the international reserve in U.S. dollars was -1.8 percent in the period.

of external liabiliites by domestic liabiliites by large firms– and a deceleration of credit to households.

Chart 85
Financing to Non-financial Private Sector
Real annual change in percent
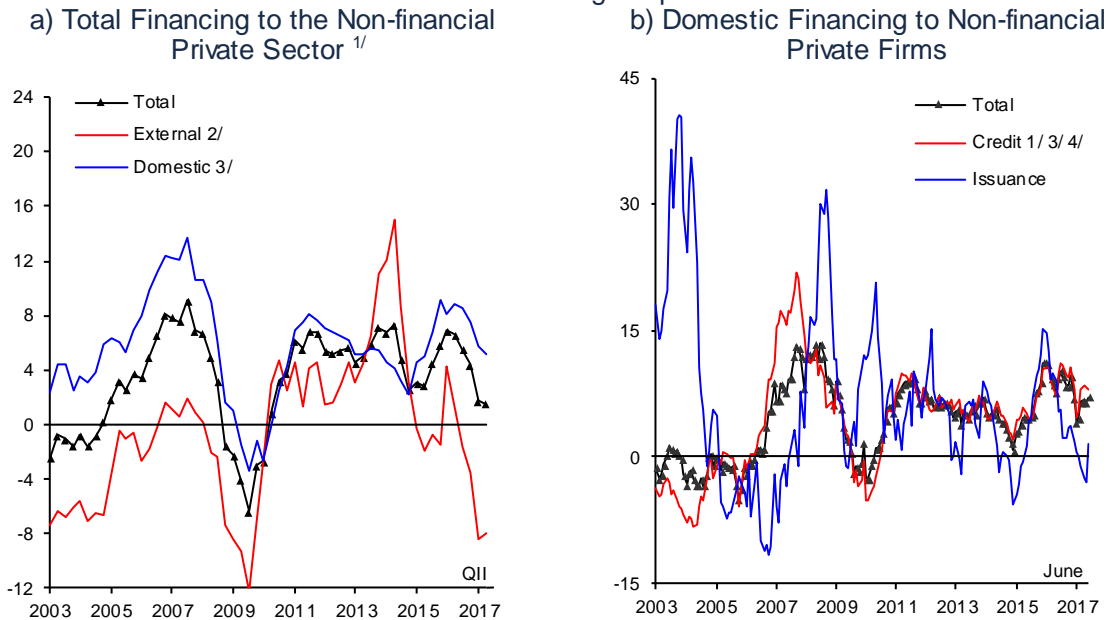
a) Total Financing to the Non-financial
Private Sector [1]

b) Domestic Financing to Non-financial
Private Firms

1/ Real annual changes are calculated based on balances adjusted due to exchange rate v ariations.
2/ Data of f oreign f inancing f or the second quarter of 2017 are preliminary .
3/ These data are adjusted due to the withdrawal from and the incorporation of some f inancial intermediaries to the credit statistics.
4/ It ref ers to the performing and non-performing portfolios, and includes credit from commercial and development banks, as well as other
   non-bank f inancial intermediaries.
Source: Banco de México.

Delving in the above, external financing to firms kept contracting significantly, which has been offset by the dynamism of domestic financing. In particular, in the reference quarter domestic financing to firms exhibited a real annual change of 7.1 percent, a rate that is greater than that observed at the end of the previous quarter, when it expanded 6.6 percent (Chart 85b). This greater growth of domestic financing to firms is due to the expansion of commercial banks' credit –above all, to large firms– and, to a lower degree, to an incipient reactivation in debt issuance in the domestic market (Chart 86). This occurred despite the fact that financing costs in the domestic market have continued increasing, reflecting the increments in Banco de México's target of the overnight interbank interest rate (Chart 87a and Chart 87b). On the other hand, delinquency rates of the banks' credit portfolio have persisted at low levels (Chart 87c).

Chart 86
Domestic Financing to Non-financial Private Firms

a) Securities in Circulation
Stocks in MXN billion in June 2016
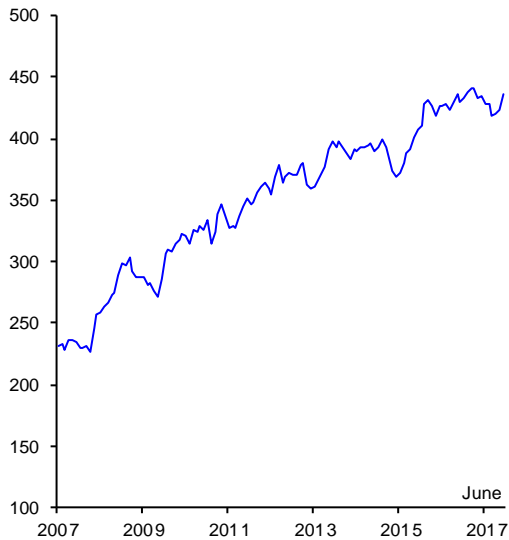
b) Performing Credit [1]
Real annual change in percent
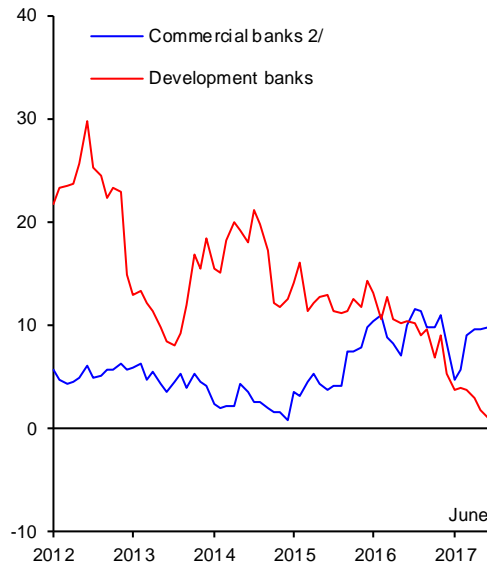
1/ Real annual changes are calculated based on balances adjusted due to exchange rate variations.
2/ It includes Sofomes ER subsidiaries of bank institutions and financial groups. Data are adjusted so as not to be affected by the transfer of bridge loans.
Source: Banco de México.

Chart 87
Annual Interest Rates and Delinquency Rates of Non-financial Private Firms

a) Annual Interest Rates of Private Securities
Quarterly average in percent

b) Annual Interest Rates of New Credits [3]
Annual percent

c) Delinquency Rates
Percent

1/ Average weighted yield to maturity of issuances in circulation, with a term over 1 year, at the end of the month.
2/ Average weighted rate of private debt placements, at a term of up to 1 year, expressed in a 28-day curve. It only includes stock exchange certificates.
3/ It refers to the interest rate of new bank credits to non-financial private firms, weighted by the associated stock of the performing credit and for all credit terms requested. It is presented as a 3-month moving average.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

Credit to households –both destined to housing and for consumption– continued decelerating. In the reported period, the total portfolio of credit to households expanded at a real annual rate of 3.5 percent, as compared to 5.0 percent registered at the end of the previous quarter (Chart 88a). In the case of credit to housing, a lower growth rate was observed both in the commercial bank portfoio and the National Housing Fund –which together constitute over 90 percent of total housing credit in Mexico– (Chart 88b).[22] In this environment, interest rates have increased as compared to those observed in 2016, while the corresponding delinqency rates have remained without significant changes (Chart 88c).

Chart 88
Credit to Households

a) Total Credit [1/] Real annual change in percent	b) Performing Housing Credit Real annual change in percent	c) Annual Interest Rate of New Credits and Delinquency Rate of the Housing Credit In percent

1/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
2/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
3/ Figures are adjusted in order to avoid distortions by the transfer and the reclassification of direct credit portfolio, by the transfer from the UDIS trust portfolio to the commercial banks' balance sheet and by the reclassification of direct credit portfolio to ADES program.
4/ The interest rate of new housing credits from commercial banks, weighted by the stock associated to the performing credit. It includes credit for acquisition of new and used housing. Figures presented correspond to May 2017.
5/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
6/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

Meanwhile, commercial bank consumer credit observed a reduction in its growth rate between the first and the second quarters of the year, as it shifted from 5.5 to 3.7 percent in real annual terms. Notably, this moderation was observed across all components of this portfolio, with the exception of credit for Acquisition of Consumer Durables, which maintained high growth rates due to the persisting dynamism of the auto loans (Chart 89a). As regards credit costs, in the reported period, interest rates remained generally unchanged, even though bank cards' rates, and, more recently, auto loan rates, somewhat increased. Finally, delinquency rates persisted relatively low, even though the adjusted index due to write-offs has gone up, which largely reflects a certain deterioration in the payroll segment (Chart 89b).

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[22] Commercial banks' housing credit includes that for acquisition of new and used housing, remodeling, payment of mortgage liabilities, credit for liquidity, acquisition of land and construction of own housing.

Chart 89
Commercial Bank Consumer Credit
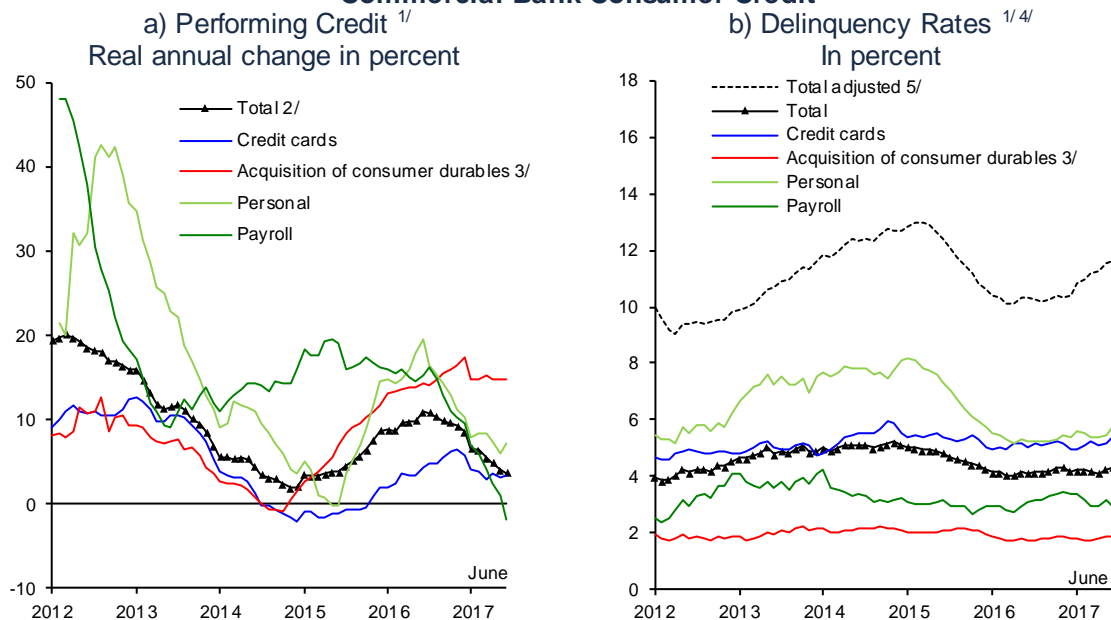
a) Performing Credit [1/]
Real annual change in percent

b) Delinquency Rates [1/ 4/]
In percent

1/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
2/ It includes credit for payable leasing operations and other consumer credits.
3/ It includes auto loans and credit for acquisition of other movable properties.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided
   by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

In sum, the moderation in the sources of financial resources has been reflected in a lower financing to different sectors of the economy. In this context, it stands out that a lower resource absorption by the public sector contributed to generating room to maintain the expansion of domestic financing to the private sector, albeit at more moderate rates. This reflects the relevance of maintaining the fiscal consolidation efforts, which, besides strengthening the macroeconomic fundamentals of the country, would limit pressure on the loanable funds' market. On the other hand, the higher cost of financing and the resulting lower growth of demand for credit are without a doubt associated to the monetary policy measures that have been adopted by this Central Institute. This shows that the monetary policy transmission channels, which operate through credit markets, are functioning.

4.   Monetary Policy and Inflation Determinants

Due to the convergence of different shocks on inflation, this Central Institute has acted in a timely manner and at a magnitude that is deemed necessary to prevent the price formation process of the economy from contamination; that is, that adjustments in relative prices as a result of the said shocks would take place in an orderly manner. This implies that the referred shocks would not generate second round effects on the price formation process in the economy, and, therefore, will not translate into deanchoring of medium- and long-term inflation expectations. In this sense, the Board of Governors of Banco de México has considered that monetary policy measures impact inflation with a considerable lag, which turns out to be even more relevant, since the dynamics of short-term inflation have been affected by shocks that, for the most part, have an impact that frequently is immediate on the measured inflation, even when they are transitory.

Thus, Banco de México has been adjusting its monetary policy stance from December 2015 to June 2017, increasing the target for the overnight interbank interest rate by 400 basis points, from 3 to 7 percent (Chart 90). These adjustments have started to be reflected in different indicators and aggregates of inflation, which have recently reduced the growth rate and even observed a certain reversal in their trends, but mainly have influenced the evolution of the exchange rate, which as appreciated considerably. The latter is particularly relevant, as the channel of the exchange rate is one of the most important in the monetary policy transmission mechanism. The above has occurred in a context in which, although inflation expectations for the end of 2017 kept slightly adjusting upwards, and attained 6.03 percent in July, medium-term ones remained below 4.00 percent and long-term ones at 3.50 percent, which is congruent with a temporary rise of inflation.

Chart 90
Overnight Interbank Interest Rate and Headline Inflation [1/]
Annual percent
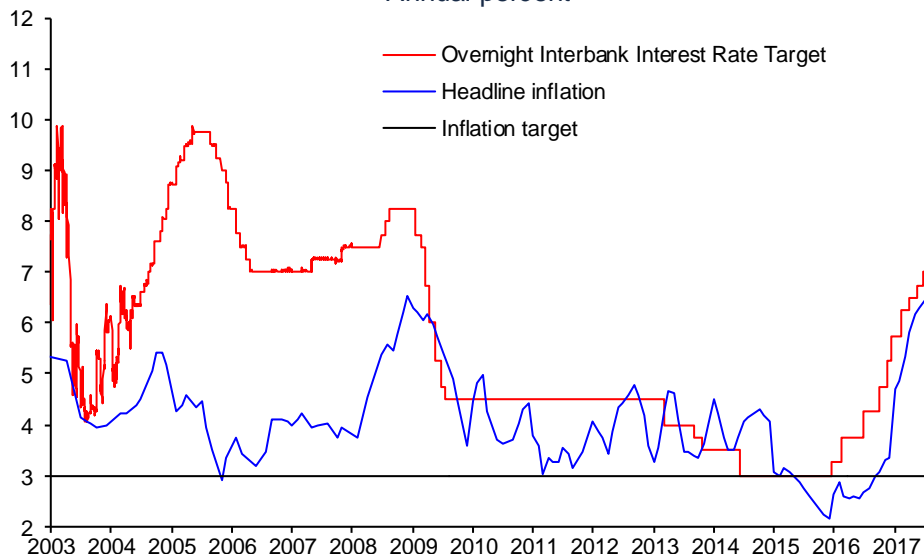
1/ The Overnight Interbank Interest Rate is shown until January 20, 2008. The latest inflation figure corresponds to the first fortnight of May.
Source: Banco de México.

In particular, in the monetary policy meetings of March, May and June 2017, the Board of Governors decided to increase the reference rate by 25 basis points on each occasion, after it had raised it on 6 previous occasions (by 50 basis points each time) over the period from February 2016 to February 2017. As indicated at the time, these actions aimed at preventing the contagion of the price formation process in the economy as a result of the above mentioned shocks, at anchoring inflation expectations and at strengthening the monetary policy contribution to the process of inflation convergence to its target. In this regard, it stands out that in its meeting of June, the members of the Board of Governors considered that, taking into account the temporary nature of shocks that affected inflation, the information available at the time, the horizon at which the monetary policy transmission channels operate, as well as the forecast for the economy, the reference rate level was congruent with the convergence of headline inflation to its 3 percent target in late 2018. Hence, upon verifying that the above remained the central scenario given available information, in its August meeting the Board of Governors decided to maintain unchanged the target for the overnight interbank interest rate. Similarly, it noted that in the future it will closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially the potential pass-through of exchange rate adjustments onto prices, along with the evolution of the output gap and the monetary stance of Mexico relative to that of the U.S. Furthermore, it reaffirmed that, in any event, in light of a possibility of an array of risks, it will be vigilant in ensuring that a prudent monetary stance is maintained, in a manner that strengthens the anchoring of medium- and long-term inflation expectations and the convergence to its target is attained.

Among the elements considered to justify the monetary policy decisions made in the reference period, the following stand out:

i. Although headline and core inflation maintained an upward trajectory, their growth rate has started to decelerate. Furthermore, it stands out that there are already changes in the trends of the categories affected by the initial shocks, such as those corresponding to energy products and non-food merchandise.

ii. Headline inflation seems to be approaching its ceiling. In line with the above, in the last months of this year it is expected to resume a downward trend and this trend is estimated to accentuate during next year, leading to the convergence to the 3 percent target by the end of 2018.

iii. The evolution of inflation expectations keeps reflecting its transitory increase. Thus, while those corresponding to the end of 2017 were adjusted upwards, medium-term ones remained below 4 percent and long-term ones persisted at 3.5 percent.

iv. As a result of the recent evolution of economic activity, no significant aggregate demand-related pressures onto prices have been observed (Chart 91). Similarly, as mentioned in Section 3.2, conditions in the labor market continued to tighten, so it would seem that slack in that market has been exhausted. Indeed, the gap between the observed unemployment rate and that congruent with an environment of low and stable inflation is negative and significantly different from zero, as is the

extended measure of this gap that includes informal salaried workers (Chart 92a and Chart 92b). However, so far no wage-related pressures have been perceived that may affect the inflation process. In this context, derived from the performance of wages and labor productivity during the reference period, unit labor costs, both for the economy as a whole and for the manufacturing sector, in particular, remained at low levels, albeit with a certain upward trend relative to what was recorded in 2014 (Chart 93).

v. Although the Federal Reserve increased its target range of the reference rate by 25 basis points last June, no modifications were introduced in the latest meeting, thus ratifying that the process of the monetary policy normalization in the U.S. will be highly gradual, even considering that it could start reducing the amount of its balance sheet soon.

Chart 91
Output Gap Estimate [1]
Percentage of potential output, s. a.
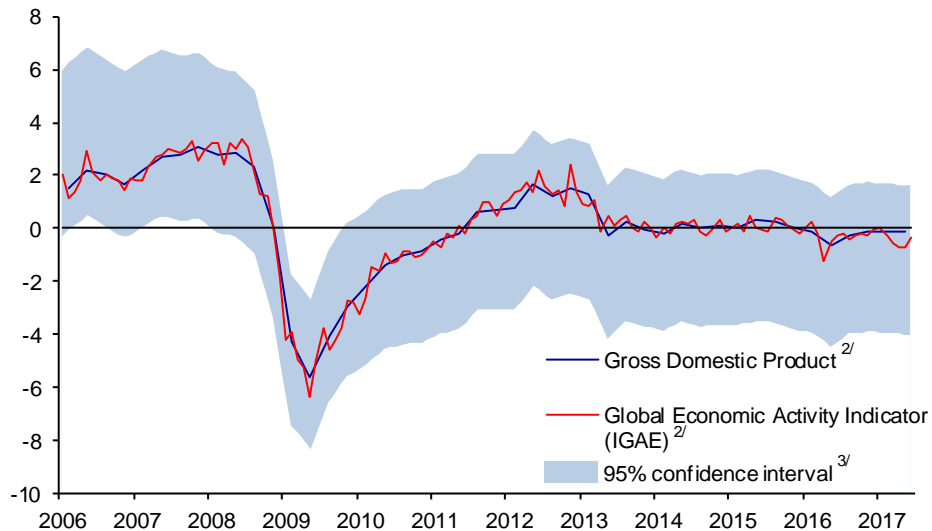
s. a. / Estimated with seasonally adjusted data.
1/ Estimated using the Hodrick-Prescott (HP) filter with tail correction; see Banco de México Inflation Report, April- June 2009, p.69.
2/ GDP figures as of the second quarter of 2017; IGAE figures as of June 2017.
3/ Confidence interval of the output gap calculated with an unobserved components' method.
Source: Estimated by Banco de México with data from INEGI.

Chart 92
Estimate of the Unemployment Gap
Percent, s. a.
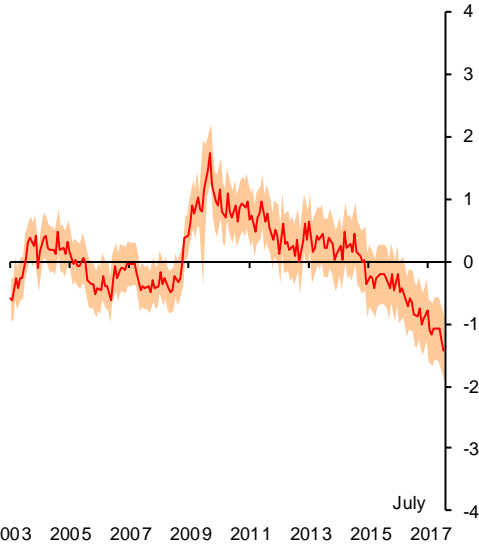
a) Unemployment Rate [1]

b) Unemployment Rate and Informal
Wage Workers [1]

s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval corresponds to two average standard deviations among all estimates.
Source: Banco de México.
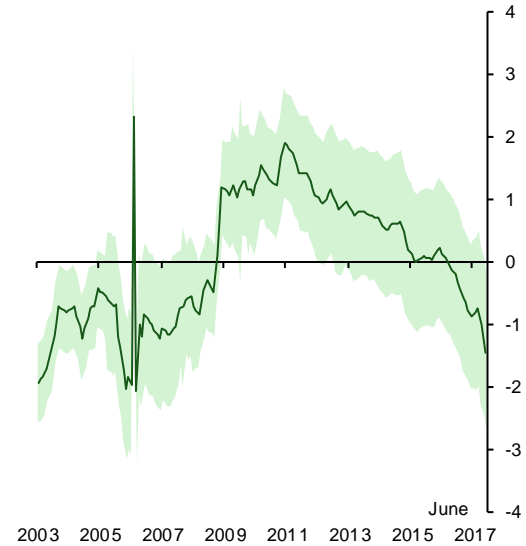
s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval corresponds to two average standard deviations among all estimates.
Source: Banco de México.

Chart 93
Productivity and Unit Labor Cost
Index 2008=100, s. a.
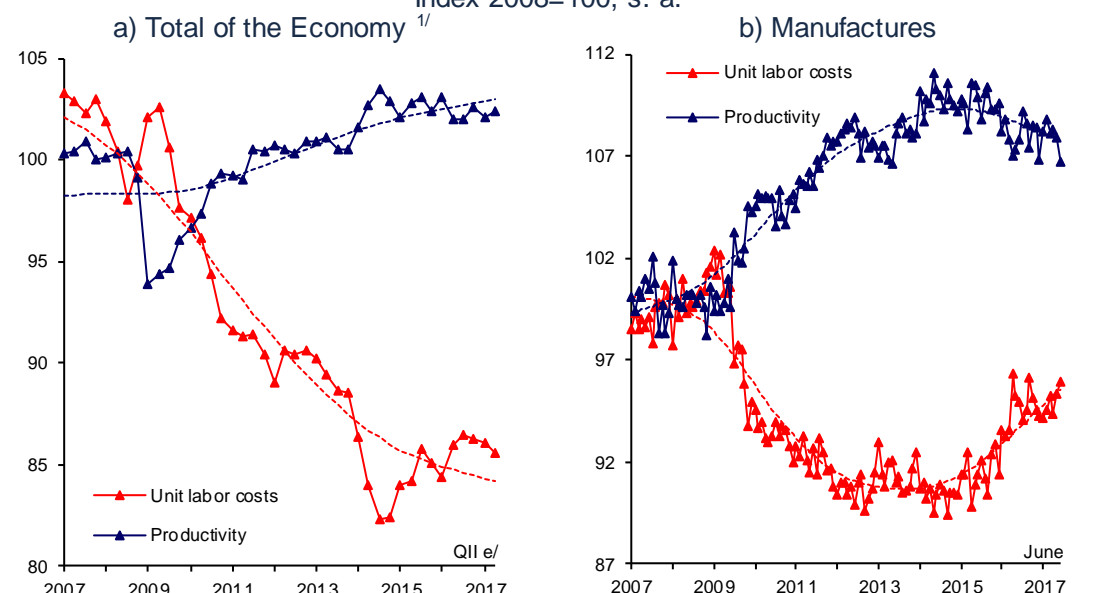
a) Total of the Economy [1/]

s. a. / Seasonally adjusted and trend series. The former is
        represented with a solid line, the latter, with a dotted line.
        Trends estimated by Banco de México.
e/ The second quarter of 2017 is the estimation of Banco de
   México.
1/ Labor productivity based on hours worked.
Source: Unit cost prepared by Banco de México based on data
        from INEGI. The Global Index of Labor Productivity in the
        Economy (IGPLE), as released by INEGI. Mexico's
        System of National Accounts, INEGI.

b) Manufactures

s. a. / Seasonally adjusted and trend series. The former is
        presented with a solid line, the latter, with a dotted line.
Source: Prepared by Banco de México with seasonally adjusted
        data from the Monthly Manufacturing Business Survey
        and the Monthly Indicator of Industrial Activity of the
        Mexico's System of National Accounts, INEGI.

Delving in the performance of inflation expectations based on Banco de México's survey among private sector specialists, it is notable that their medians for shorter terms continued adjusting upwards, which is still compatible with a transitory increase in inflation. In particular, it stands out that between March and July 2017:

i.   The median of headline inflation expectations at the end of 2017 went up from 5.60 to 6.03 percent, although it stands out that the changes that had been observed recently have moderated, so that even between June and July it remained practically constant (Chart 94a).[23] In the same way, the median for the core component shifted from 4.60 to 4.92 percent (between March and July), while the implicit expectation for the non-core component adjusted significantly from 9.01 to 9.82 percent.

ii. The median of expectations at the end of 2018 remained around 3.80 percent between the referred surveys.[24] Within it, the median for the core component adjusted from 3.62 to 3.67 percent over the same period, while the implicit expectation for the non-core component lowered from 4.50 to 4.24 percent (Chart 94).

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[23] The median of headline inflation expectation for the end of 2017, based on the Citibanamex survey, went up from 5.5 to 6.1 percent between the surveys of March 21, 2017 and August 22, 2017.

[24] The median of headline inflation expectation for the end of 2018, based on the Citibanamex survey, increased from 3.7 to 3.8 percent between the surveys of March 21, 2017 and August 22, 2017.

iii. In relation to the above described performance, it should be noted that, by considering the monthly trajectory of medians of inflation expectations for each one of the next twelve months (until July 2018), it can be observed that it remains without significant changes with respect to the previous surveys (Chart 95a). Thus, the evolution of annual inflation implicit in these expectations still registered a decrease in the last months of 2017, a significant downward adjustment in January 2018, although of a lower magnitude than that expected by Banco de México, due to the vanishing of the comparison base effect that will impact the measured annual inflation during this year, and exhibits a trend in the same direction during the subsequent months (Chart 95b).

iv. Expectations for longer-term horizons remained anchored around 3.5 percent (Chart 94c). [25]

Chart 94
Inflation Expectations
Percent

a) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2017
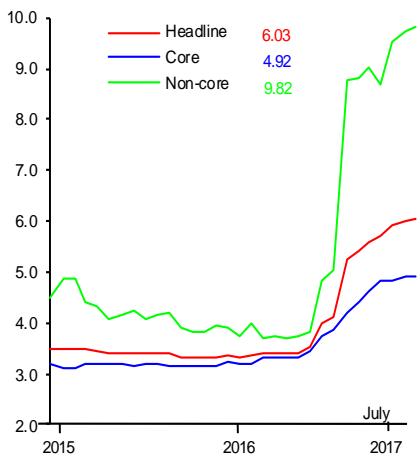
b) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2018

c) Medians of Headline Inflation Expectations for Different Terms
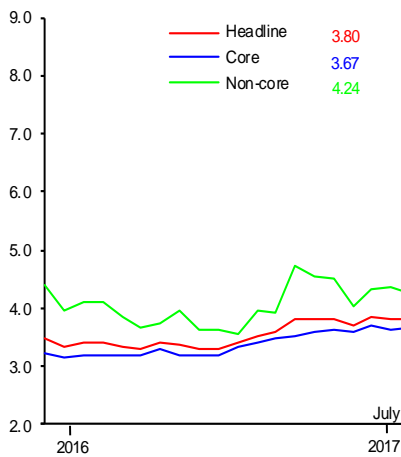
Source: Banco de México's Survey.

Source: Banco de México's Survey.
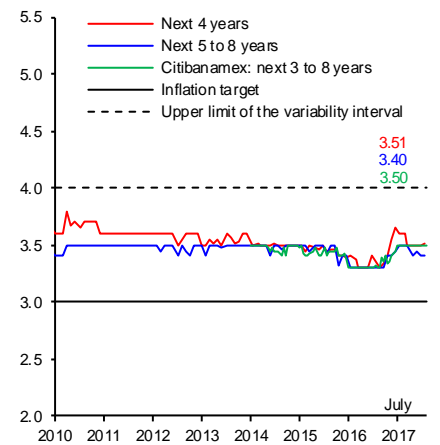
Source: Banco de México's Survey and Citibanamex Survey.

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[25] Regarding the median of long-term inflation expectations, based on the Citibanamex survey (for the next 3-8 years), it maintained at 3.5 percent between the surveys of March 21, 2017 and August 22, 2017.

Chart 95
Inflation Expectations
Percent
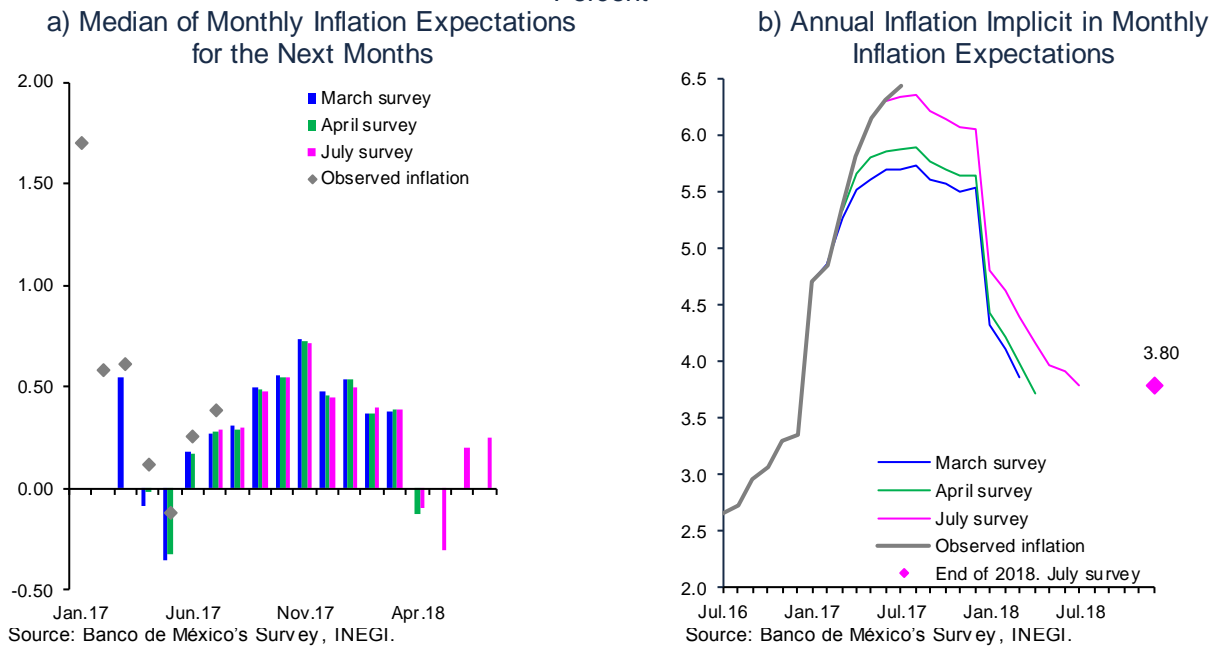
a) Median of Monthly Inflation Expectations
for the Next Months

Source: Banco de México's Survey, INEGI.

b) Annual Inflation Implicit in Monthly
Inflation Expectations

Source: Banco de México's Survey, INEGI.

As regards the break-even inflation (the difference between long-term nominal and real interest rates), it moderated in the reference period, after spiking at the beginning of the year (Chart 96a). As regards its components, it stands out, on the one hand, that long-term inflation expectations implicit in market instruments (taken from government instruments with maturities of 10 years) somewhat increased (from 3.32 percent in March to 3.43 percent in July), although at a lower magnitude than on previous occasions. This principally derived from an upward adjustment in shorter-term inflation expectations, as it is shown by the average of the first 1-5 years, which lies at 3.68 percent, in contrast to the average of the next 6-10 years that persists close to 3 percent, at 3.18 percent (Chart 96b). Meanwhile, the estimate of the inflation risk premium further declined from 25 to 8 basis points between April and July 2017, after spiking in January (Chart 96c).[26]

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[26] For a description of the estimation of long-term inflation expectations, see Box "Decomposition of the Break-even Inflation" in the Quarterly Report October – December 2013.

Chart 96
Inflation Expectations
Percent

a) Break-even Inflation and Inflation
Risk Implicit in Bonds

b) Annual Inflation Expectations
Implicit in Market Instruments [1]

c) 10-year Inflation Risk Premium [1]

Source: Estimated by Banco de México with data from Valmer and Bloomberg.

1/ The inflation expectation is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

1/ The inflation risk premium is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

Operating conditions in domestic financial markets kept improving in the reported period. In particular, the Mexican peso against the U.S. dollar performed favorably, as its volatility reduced and it further appreciated. Thus, the national currency, which had begun the second quarter of 2017 at approximately USD/MXN 18.8, marked USD/MXN 17.8 at the end of August (Chart 97a and Chart 97b), after marking USD/MXN 17.45, a level that had not been observed since the second quarter of 2016. This evolution, to a large extent, reflected the monetary policy actions implemented by Banco de México and a relative improvement in the perception of the bilateral Mexico – U.S. relation in the future, as well as a more favorable international financial environment. Likewise, as determined by the Foreign Exchange Commission, a foreign exchange market mechanism consisting in non-deliverable forward (NDF's) auctions has been operating since March 2017, further contributing to improve the operating conditions in the foreign exchange market of the country. In this juncture, the expectations for the quote of the Mexican peso at the end of 2017 and 2018, derived from surveys, kept decreasing considerably (Chart 97a).

Chart 97
Exchange Rate and Implied Volatility

a) Nominal Exchange Rate [1/]
MXN/USD

b) Implied Volatility in FX Options [1/]
Percent

1/ The observed rate is the daily FIX exchange rate. Expectations correspond to the average of the July survey by Banco de México.
Source: Banco de México.
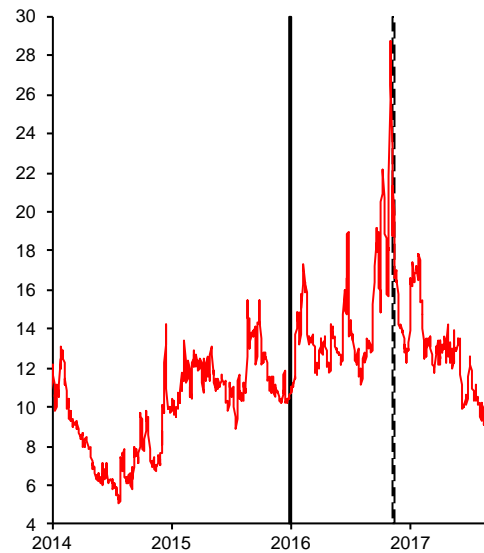
1/ Currency option implied volatility refers to one-month options. The black vertical line indicates January 1, 2016 and the dotted line indicates November 8, 2016.
Source: Bloomberg.

The performance of interest rates was differentiated during the period analyzed in this Report. In particular, short-term ones increased, reflecting increments in the reference rate, while longer-term ones declined, in view of the anchoring of medium- and long-term inflation expectations in Mexico, the corresponding reduction of the inflation risk premium, the decrease in long-term U.S. rates and an environment of higher risk appetite. In this way, between late March and early August 2017, 3-month and 10-year interest rates shifted from 6.6 to 7.1 percent and from 7.1 to 6.8 percent, respectively (Chart 98a and Chart 98b). As a result of the above described evolution of interest rates, the slope of the yield curve (measured as the difference between 10-year and 3-month rates) plunged from 50 to -30 basis points, in the same interval (Chart 98c). Similarly, it stands out that from December 2015 to late August 2017 the slope of the yield curve adjusted downwards by 320 basis points, reflecting, on the one hand, a tighter monetary policy stance, derived from which 3-month interest rates went up by approximately 385 basis points in the referred interval, and, on the other hand, reflecting the anchoring of inflation expectations and other domestic and external factors, as a result of which 10-year interest rates went up by barely 65 basis points during the same period.

Chart 98
Interest Rates in Mexico
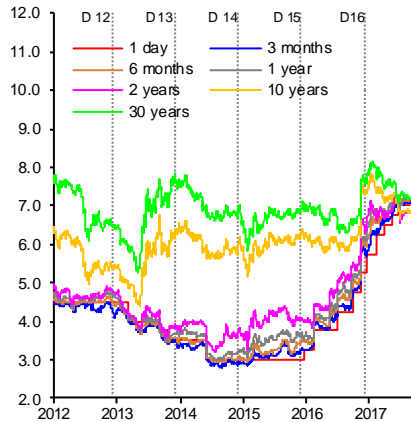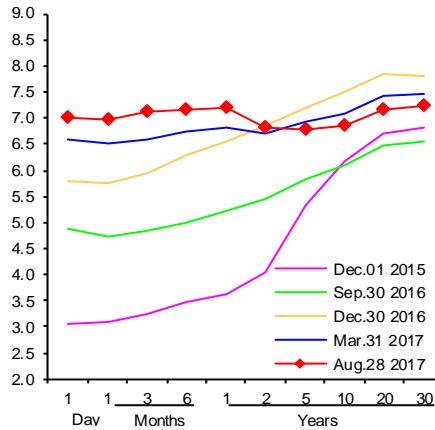
a) Government Bond Interest Rates
Percent

b) Yield Curve
Percent

c) Slope of the Yield Curve
Basis points
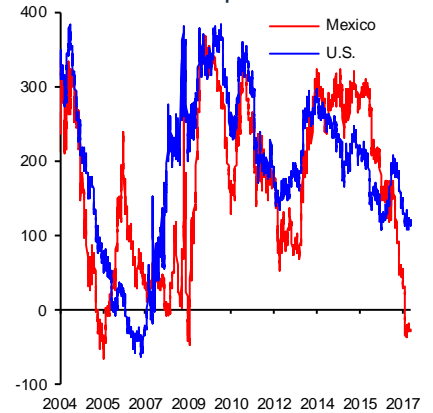
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

Consistent with the above performance, and given that short-term interest rates in the U.S. grew to a lower degree, and medium- and long-term ones declined less than those of Mexico, spreads between Mexican and U.S. interest rates increased in their short-term horizons and slightly declined in medium- and long-term ones. In particular, from the end of March to the end of August 2017, the spread of short-term rates (3 months) went up from 580 to 610 basis points, while the 10-year spread declined from approximately 470 to 460 basis points (Chart 99a and Chart 99b). It should be noted that the level of these spreads (which is higher for short-term ones as compared to long-term rates) points to a clear differentiation between monetary policy stances of these two countries, given that the increment in the reference interest rate in Mexico has been 400 basis points, while in the U.S. it was 100 basis points. The difference between the relative monetary stances in part responds to the current inflation spreads and those anticipated between the two countries in the short term. Indeed, in Mexico, the most recent estimate of headline inflation measured in annual terms lies at 6.44 percent, while in the U.S. it places at 1.73 percent, which represents a difference of 471 basis points. Similarly, inflation expectations for the end of 2017 lie at 6.03 and 2.10 percent in Mexico and the U.S., respectively (a 393-basis-point difference). This is in contrast with longer-term ones that currently lie at 3.40 and 2.40 percent, respectively (a 100-basis-point difference; Chart 99c).

Chart 99
Spreads between Mexican and U.S. Interest Rates

a) Spreads between Mexican and
U.S. Interest Rates [1/]
Percent
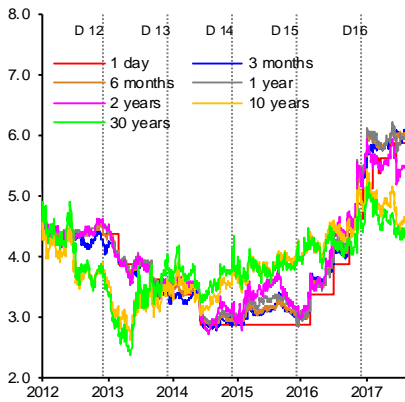
b) Curve of Spreads between
Mexican and U.S. Interest
Rates
Percentage points
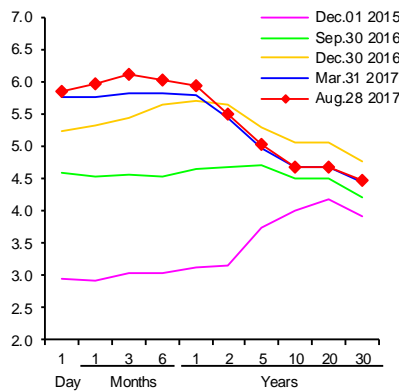
c) Inflation Spreads and Spreads
of Short- and Long-term Inflation
Expectations
Basis points
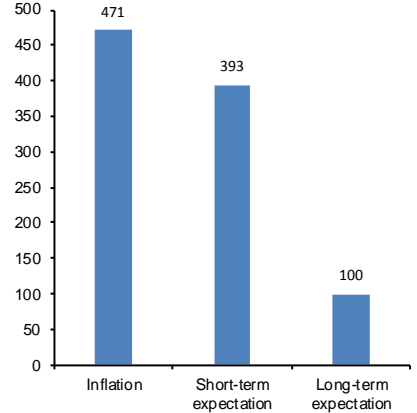
1/ For the U.S. target rate, an average interval considered by the Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

Source: INEGI, Bureau of Labor Statistics, Blue
Chip Economic Indicators and Consensus
Forecast.

It is relevant to stress that adjustments in the reference rate implemented by this
Central Institute since the end of 2015 were carried out based on a historic minimum
of 3 percent. In this sense, the 400-basis-point increment in the reference rate from
December 2015 up to date fundamentally constitutes a withdrawal of the monetary
stimulus that prevailed in the previous period, while the current real ex ante rate
seems to be close to the neutral level that would be anticipated in the long term
(Chart 100).[27]

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[27] For a description of the estimation of the short-term neutral interest rate, see Box "Considerations on the
Evolution of the Neutral Interest Rate in Mexico", in the Quarterly Report, July - September 2016.

Chart 100
Real Ex ante Short-term Rate and Estimated Ranges for Real Neutral Short-term Rate in the Short and Long Terms [1/]
Annual percent
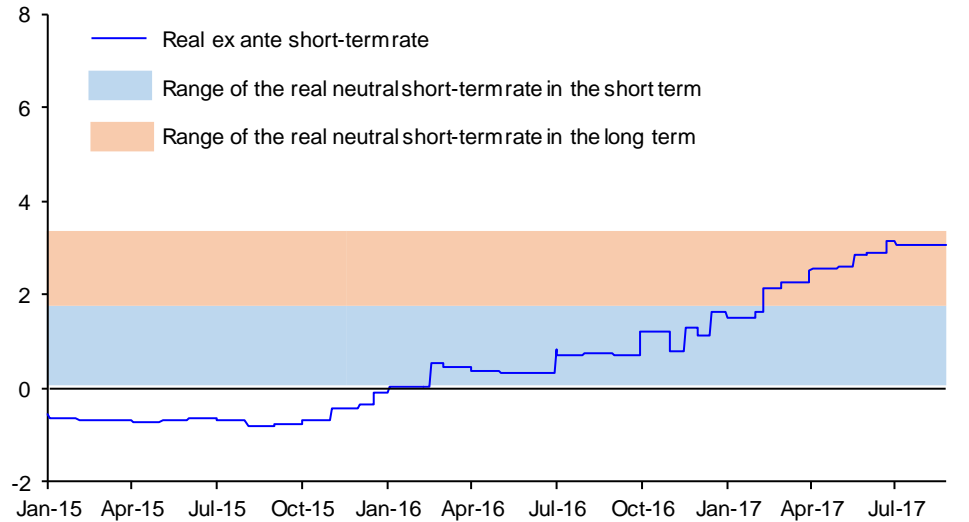
1/ Real ex ante short-term rate is calculated as the difference between the Overnight Interbank Interest rate and the
   median of inflation expectations for the next 12 months, derived from Banco de México's Survey.
Source: Banco de México.

On the other hand, market indicators that measure the sovereign credit risk decreased. In particular, the 5-year Credit Default Swap went down from 130 to 105 basis points and marked the minimum levels over the last two years, after having spiked during the fourth quarter of 2016. In this regard, it should be noted that some rating agencies (Standard & Poors and Fitch) adjusted their rating outlook of the Mexican sovereign debt from negative to stable.

Despite the better performance that has recently been observed in domestic financial markets, the Mexican economy still faces a complex environment. Thus, proceeding with the adequate implementation of structural reforms and the authorities' perseverance in strengthening the country's macroeconomic fundamentals, thus consolidating public finances, and ensuring that the Board of Governors of Banco de México maintains a prudent monetary policy become particularly relevant. Hence, the goal is to strengthen the anchoring of medium- and long-term inflation expectations and to achieve its convergence to the target.

5.   Inflation Forecasts and Balance of Risks

In an ongoing effort to improve its communication strategy with the public, henceforth in its Quarterly Report, the Board of Governors has decided to add to all fan charts, of both inflation and economic activity, the central forecast of the current Report and to compare it with that of the previous Report. This new way to present the forecast, in particular that of inflation, will contribute to reinforce the Central Bank's role in forming expectations, and, in turn, further strengthening the inflation expectations channel in the monetary policy transmission mechanism. The goal is to explain to the public in more detail the Bank's forecasts, the risks associated to them, and their possible updates.

GDP Growth Rate: The outlook for the economic growth in Mexico seems to have improved with respect to the prevailing perception at the moment of the previous Report release. In particular, world economic activity and global trade have recovered, the domestic market has proven to be resilient, and business' and consumers' confidence has gradually increased. In the second quarter of 2017, even productive activity decelerated slightly less than anticipated in the previous Report. In addition, despite the persistent uncertainty over the future Mexico – U.S. bilateral relationship, the most recent information suggests that there is a lower probability that the scenarios that could affect growth the most could materialize. Hence, the forecast interval for GDP growth in Mexico for 2017 has been adjusted from one between 1.5 and 2.5 percent to one between 2.0 and 2.5 percent, an interval of a smaller amplitude than that of the previous Report. In addition, the forecast interval of GDP growth for 2018 has been revised upwards from one between 1.7 and 2.7 percent published in the previous Report to one between 2.0 and 3.0 percent. In this way, a greater growth of the economy is expected in 2018 relative to 2017. This trajectory is consistent with the expectation that the reactivation of U.S. industrial production will consolidate, as well as with the expectation that some structural reforms will generate even more noticeable effects on growth, and that the strengthening of the macroeconomic framework, that has been carried out by both the fiscal and monetary authorities, will generate more favorable conditions for economic activity in Mexico, so that the domestic market will keep contributing to economic growth (Chart 101a).[28]

These growth expectations do not suggest the presence of aggregate demand-related pressures onto prices in the forecast horizon. In particular, the output gap is still anticipated to remain negative, although lying closer to zero, when compared to the one in the previous Report (Chart 101b).

Employment: The forecasts for the number of IMSS-affiliated jobs for the following two years have been adjusted upwards with respect to the forecast found in the previous Report, congruent with the adjustment in the growth predictions for 2017 and 2018. In particular, in 2017 the number of IMSS-affiliated jobs is expected to increase between 660 and 760 thousand jobs, an interval that compares to the previous forecast of between 650 and 750 thousand jobs. For 2018, an increase of

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[28] According to business analysts surveyed by Blue Chip in August 2017, industrial production in the U.S. is estimated to grow 1.9 percent in 2017, a growth rate that is higher than the 1.7 percent expected in the previous Report, but lower than the 2.4 percent estimated for 2018, which remained unchanged relative to the forecast in the previous Report.

between 670 and 770 thousand jobs is anticipated, which is compared to the forecast of between 640 and 740 thousand jobs in the previous Report.

Current Account: Regarding the external accounts forecasts, for 2017 deficits in the trade balance and the current account of 1.2 and 2.2 percent of GDP are expected (USD 13.2 and 25.0 billion, respectively), which are compared to the 1.2 and 2.3 percent of GDP anticipated in the previous Report. For 2018, the trade balance and current account deficits are estimated to amount to 1.0 and 2.2 percent of GDP (USD 12.5 and 27.1 billion, in the same order), figures that are slightly lower than the 1.1 and 2.3 percent of GDP expected in the previous Report.

Chart 101
Fan Charts: GDP Growth and Output Gap
a) GDP Growth, s. a.
Annual percent
b) Output Gap Estimate, s. a.
Percentage of potential output
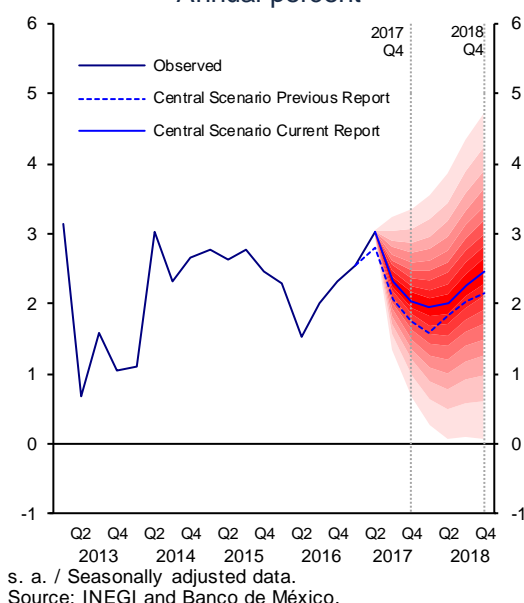
s. a. / Seasonally adjusted data.
Source: INEGI and Banco de México.

s. a. / Seasonally adjusted data.
Source: Banco de México.
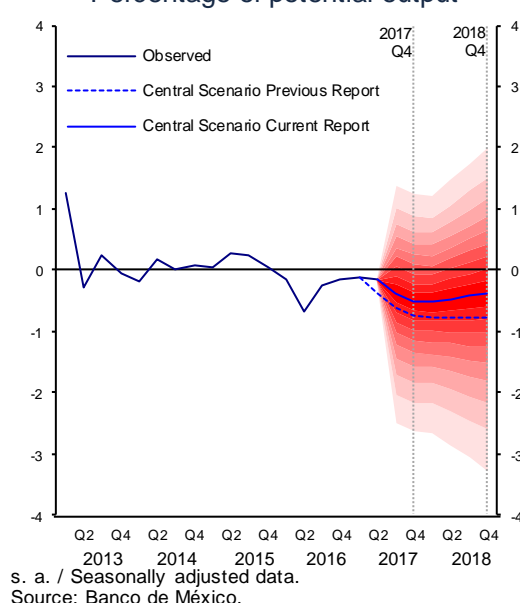
The balance of risks for growth has improved and has become neutral, due to the perception that the probability that some of the most extreme downward risks may take place has diminished. Among the downward risks, the following stand out:

i. That, as a result of the uncertainty over the renegotiation of NAFTA, different enterprises decide to further postpone their investment plans in Mexico.

ii. That the renegotiation of NAFTA is not favorable for the Mexican productive sector or that it even results in its cancellation.

iii. That episodes of high volatility in international financial markets occur, derived from geopolitical events or from the normalization process of U.S. monetary policy that could reduce the sources of financing to Mexico.

iv. That the upcoming electoral process in Mexico generates volatility in the domestic financial markets, creating an environment of uncertainty that could negatively affect the evolution of private spending, at the end of 2017 and, mainly, in 2018.

v.   That the rise in public insecurity further affects productive activity.

On the other hand, among the upward risks, the following are noteworthy:

i.   That the renegotiation of NAFTA triggers investment in areas of opportunity, which have not been previously considered by the Agreement.

ii.   That the implementation of the structural reforms renders greater-than-estimated results.

iii.   That in 2017 the oil production platform registers an annual reduction that is lower than expected, and that in 2018 it will reverse its trend more than previously anticipated.

Inflation: According to the central scenario, annual headline inflation is estimated to persist above 6.0 percent over the next months. However, it appears to be approaching its ceiling. In line with that, during the last months of this year headline inflation is expected to resume its downward trend, which is anticipated to accentuate during the following year, leading to the inflation convergence to its 3.0 percent target around the third quarter of 2018. Under this scenario, in 2017 annual core inflation is estimated to remain above 4.0 percent, although significantly below the trajectory of annual headline inflation. Likewise, at the end of 2017 and in early 2018, it is expected to resume its convergence trajectory to the inflation target, attaining levels close to 3.0 percent in late 2018. The above estimations consider monetary policy adjustments that have been implemented since December 2015 up to date, and which will keep affecting the evolution of inflation over the next quarters. Similarly, it is considered that in January 2018 the vanishing of the base effect brought about by higher prices of various energy products in early 2017 will significantly impact annual inflation, which will present a downside trajectory during the subsequent months. This will take place in an environment, in which no aggregate demand-related pressures onto prices are expected (Chart 102 and Chart 103). These forecasts assume that in an event of volatility in domestic financial markets, it would be transitory.

The above estimations are subject to risks. Among upward risks, the following should be mentioned:

i.   That given the simultaneity and the magnitude of shocks on inflation, second round effects on inflation are registered, which has not occurred so far.

ii.   That the materialization of external and domestic risks faced by the economy affects the exchange rate.

iii.   That price increments in agricultural prices persist, even though their impact on inflation will be transitory.

iv.   Considering that labor market conditions have been tightening, that the evolution of unit labor costs will start to be reflected in inflation.

Among downward risks, these should be listed:

i.   That the appreciation of the national currency consolidates and even deepens.

ii.   That energy prices go down in accordance with their international references.

iii.   That a greater-than-anticipated reversal in the price increments of agricultural products, which have affected inflation in recent months, is observed.

iv.   That the structural reforms lead to further reductions in different prices of the economy.

Given the current monetary policy stance, the balance of risks to inflation is considered to be neutral

Chart 102
Fan Chart: Annual Headline Inflation [1/]
Percent
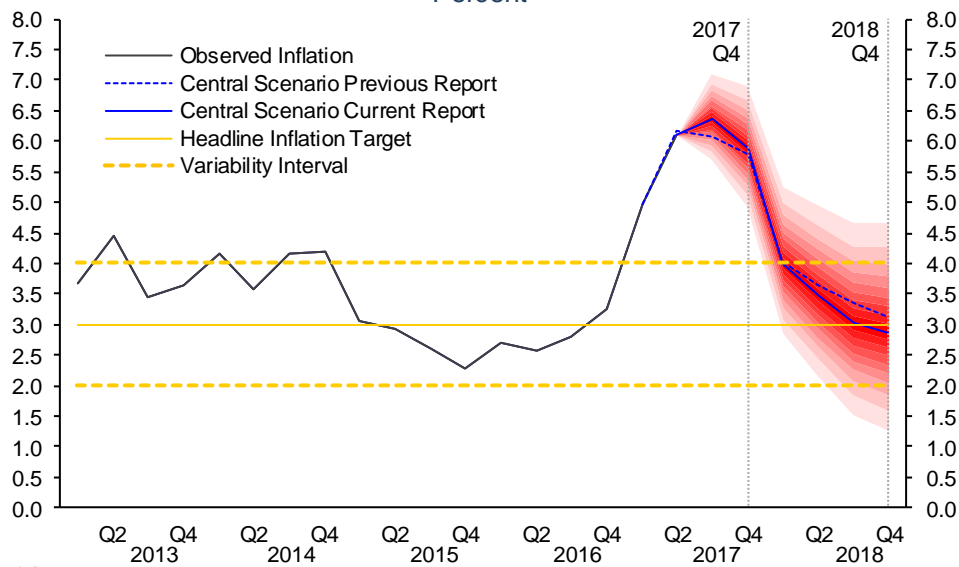
1/ Quarterly average of annual headline inflation.
Source: Banco de México and INEGI.

Chart 103
Fan Chart: Annual Core Inflation [1/]
Percent
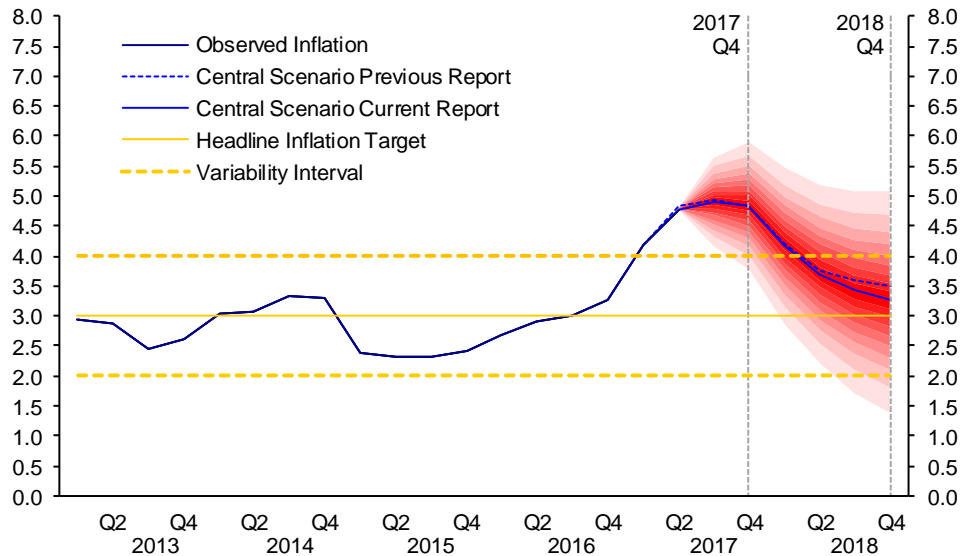
1/ Quarterly average of annual core inflation.
Source: Banco de México and INEGI.

Considering the data presented in this Report, in the future the Board of Governors will closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially the possible pass-through of exchange rate adjustments onto prices and the evolution of the output gap. It will also assess the monetary position of Mexico relative to the U.S. In any event, in light of different prevailing risks, the Board of Governors will be watchful to ensure that the monetary stance remains prudent, so that the anchoring of medium- and long-term inflation expectations is strengthened, and its convergence to the inflation target is achieved.

As a result of the sound macroeconomic framework of Mexico, despite the complex external environment faced by the Mexican economy throughout various years, the country continues growing and financial stability has prevailed, as the economy has been adjusting to the new environment in an orderly manner. Nonetheless, it is important to keep in mind that the economy is still facing serious challenges, reason why it is crucial to continue strengthening the macroeconomic fundamentals. This is contributed to by the monetary policy actions seeking to maintain anchored medium- and long-term inflation expectations and to attain the convergence of inflation to its target, as well as by the Federal Government commitment to implement the fiscal adjustment so that the public debt-to-GDP ratio declines. In particular, the fiscal authority has made a decision to attain a primary surplus of 0.4 percent of GDP in 2017 (excluding Banco de México's operational surplus). In fact, the results of public finances for the first half of the year are in line with fulfillment of this goal. Furthermore, for 2018 the Federal Government has strengthened its commitment to fiscal consolidation, when it put forward a surplus in the primary balance amounting to 1.0 percent of GDP.[29] In the future, it is important that the

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[29] Figures for 2017 are taken from Reports on Economic Activity, Public Finances and Public Debt of the Second Quarter of 2017. Data for 2018 are taken from the Document concerning the compliance with the

fiscal consolidation process procures to structurally strengthen public finances, for it to be sustainable in the medium term. Progress in the implementation of the structural reforms, in particular in the competition, telecommunications and energy reforms, should be stressed. In recognition of the above factors, some rating agencies revised Mexico's sovereign debt credit outlook up to stable from negative.

The Board of Governors of Banco de México considers that the current monetary policy stance is congruent with the convergence of headline inflation to its 3.0 percent target by the end of 2018. It is worth highlighting that achieving the fiscal goals proposed by the Ministry of Finance for this year and the next one will reinforce the convergence process of inflation to its target and will help make it more efficient. This takes on greater relevance in light of the still prevailing uncertainty, related to the possible tightening of global financial conditions in the future, to the NAFTA renegotiation and to the upcoming electoral process in Mexico.

For the reinforcement of the macroeconomic framework to better support the development of the country, it should be accompanied by a continuous strengthening of the Mexican institutions. The fact that in 1993 Banco de México was granted, at the constitutional level, autonomy regarding its functions and administration has enabled this Central Institute to focus, in independence of the political cycle, on maintaining price stability, which is the main task that society has entrusted to it. Thus, the credibility that the monetary authority has been building through its actions has allowed it to control inflation in Mexico and to make progress in consolidating an environment of low and stable inflation, for the benefit of the Mexican population. Similarly, it has contributed to the sound development of the financial system and has propitiated a good functioning of the payment systems.

Banco de México's experience in curbing inflation is proof that it is important for Mexico to have institutions that respond to society's demands. In this sense, strengthening Mexico's institutions at all levels so that they comply with their social purpose under the principles of transparency and with zero tolerance for corruption should be an essential part of the effort to ratify the supremacy of the rule of law in Mexico. In a context in which public insecurity issues have increased, it becomes particularly relevant to adopt measures to prevent this factor from gaining greater importance as an obstacle to the economic development of the country. Likewise, legal certainty and the strengthening of the rule of law will allow to achieve timely and correct implementation of the structural reforms and to correct the shortcomings that impede the country from attaining a greater potential growth and a more competitive economy that deliver a faster and more sustainable growth of employment and salaries. In this way, Mexico will be in a better position to face challenges in the future, in view of a complex external and domestic environment, and to benefit from the opportunities that may arise.

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provisions of Article 42, Fraction I of the LFPRH, also known as General Economic Policy Preliminary Guidelines (*Pre-Criterios*). Both documents have been published by the Ministry of Finance.

Annex   **Modification to the Publication Calendar of the Quarterly Report July - September 2017**

Table 1 in this Annex presents a new calendar for the monetary policy announcements and the publication of the minutes of the Board of Governors' Meetings regarding monetary policy decisions, as well as the Quarterly Reports for the remainder of 2017. It should be noted that the dates of all publications remain unchanged, except for the release of the Quarterly Report July – September 2017, which will be advanced by one week. It is relevant to note that the release of the monetary policy decisions will continue to be held on Thursdays at 1pm, as it has already been announced, and two weeks following each announcement, the corresponding Minutes will be released, just like it has been happening before.

Table 1
Calendar for 2017

	Announcements of Monetary Policy Decisions	Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions	Quarterly Reports [1]
September	28		
October		12	
November	9	23	22
December	14	28	

1/ The Quarterly Report that is to be published on November 22 corresponds to the report of the third quarter of 2017.

The calendar considers three previously announced dates for the announcement of the monetary policy decisions in 2017. However, as in previous years, Banco de México reserves the right to announce changes in the monetary policy stance at dates different from those previously scheduled, in the case of extraordinary events that may require the Central Bank's intervention.

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Section III: Quarterly Report July - September 2017

1.   Introduction

Since late 2014, the Mexican economy has experienced a number of different shocks, which strongly affected inflation. In particular, over the last months of 2014 and during 2015, a drop in oil prices, among other factors, caused a significant depreciation of the real exchange rate. Additionally, during 2016 a complex external environment prevailed, related mainly to the U.S. elections that led to higher volatility in domestic financial markets and further depreciation of the currency, generating an environment of uncertainty over the bilateral Mexico – U.S. relation. This resulted in an adjustment of relative prices, which spurred inflation above its 3.0 percent target at the end of 2016. Subsequently, in January 2017, the upward trend of headline inflation was aggravated mainly by the effect of the price liberalization on some energy products, as well as by additional shocks of diverse nature on non-core inflation over the next months. In this juncture, since late 2015 Banco de Mexico has implemented measures so that the adjustments in relative prices derived from this sequence of shocks take place in an orderly manner, preventing second round effects on the price formation process in the economy. During the decision-making process, the Board of Governors has taken into consideration that the monetary policy measures affect the evolution of inflation with a lag, via a number of transmission channels. These channels have been in operation during 2017. The monetary policy actions contributed to anchoring inflation expectations, to moderating credit demand and to a considerable appreciation of the Mexican peso against the U.S. dollar from mid-January and until late September 2017, even though this has recently been partially reversed.

Hence, derived from the adopted monetary policy stance, annual headline inflation attained a maximum of 6.66 percent in August 2017, later lowered to 6.35 percent in September, and marked 6.37 percent in October, this last adjustment fundamentally reflecting the evolution of non-core inflation. Meanwhile, annual core inflation decreased in September and October and marked 4.80 and 4.77 percent, respectively, in the referred periods, after having recorded 5.00 percent in August. The change in the inflation trend has been mainly a result of two factors. First, the partial fading of adjustments in relative prices, derived from the sequence of shocks on inflation, which have temporarily diverted it from its permanent 3.0 percent target since late 2016. Secondly, the effect of increments in the reference interest rate, which this Central Bank began to implement in December 2015 and which, in view of the lag of the said adjustments onto inflation, has started to be recently perceived at lower levels both of headline and core inflation.

After having announced increments in the reference rate, which have accumulated 400 basis points since December 2015, in the period covered in this Report the Board of Governors of Banco de México considered that, despite the increase of some risks, the monetary policy stance adopted based on these actions remained congruent with the convergence of headline inflation to the 3.00 percent target in late 2018. Considering this the Board of Governors decided to maintain the target

for the Overnight Interbank Interest Rate unchanged at 7.00 percent. It is noteworthy, however, that due to the persisting risks, Banco de México will remain watchful to ensure that a prudent monetary policy prevails.

The above occurred in an environment of expanding world economic activity, reflecting a more widespread growth rate both in advanced and emerging economies. This expansion was the result of the rebound in international trade, industrial production and businesses' investment. For the remainder of 2017 and 2018, the world economy is forecast to continue expanding moderately. This scenario is still facing downward risks, including high uncertainty in the geopolitical environment, the possibility of tighter monetary conditions in most major economies and possible protectionist policies in different regions. In the particular case of the U.S., a fiscal reform is under discussion in the U.S. Congress, and there is still uncertainty over when it could be approved, as well as over the characteristics of the possible reform package. Meanwhile, although the monetary policy normalization process is expected to be gradual, there is a possibility of a faster pace of this process than it is currently anticipated. Furthermore, there is still uncertainty over the results of the NAFTA renegotiation.

Despite a lower slack in the use of resources, inflation remained low across the main advanced economies. This was due to the moderate growth of wages, to idiosyncratic factors and, possibly, to such structural factors as the technological change and greater economic integration as a result of globalization.

In this scenario of greater economic recovery, where monetary conditions remain accommodative and there is an expectation of possible fiscal stimuli, financial asset prices kept growing across most advanced economies and in some emerging ones. Nonetheless, in the future new volatility episodes cannot be ruled out, among other facts, due to the greater tightening of global financial conditions as compared to those currently anticipated by the markets.

In a context of the normalization of the U.S. monetary policy, a possible approval of the expansionary fiscal plan in the U.S., and uncertainty relative to the process of the NAFTA renegotiation, the Mexican peso depreciated against the U.S. dollar and its volatility increased as of the end of September. In addition, operating conditions in the foreign exchange market somewhat deteriorated. In consequence, to procure a more orderly functioning in the said market, on October 25 the Foreign Exchange Commission announced the increase in non-deliverable forward (NDF's) auctions that would be settled in Mexican pesos for an amount of USD 4 billion, which would be carried out on a weekly basis consistent with the pre-established calendar. Meanwhile, interest rates increased in a differentiated manner: short-term ones (one year or less) went up slightly, while medium- and long-term ones (two years or more) increased more. In this way, the slope of the yield curve steepened slightly, which would have been more important in the absence of the monetary policy actions implemented by Banco de México. Similarly, spreads between Mexican and U.S. interest rates went up.

In the third quarter of 2017, Mexican economic activity contracted, in contrast with the dynamism observed in the first half of the year. This performance reflected the deceleration of some components of aggregate demand, the transitory effects of the earthquakes that occurred in September and the reduction of crude oil

production that month. Indeed, during the third quarter the weak performance of industrial activity that had been observed since mid-2014, accentuated, while tertiary activities decreased. As regards aggregate demand, exports maintained a growing trajectory, while private consumption kept exhibiting a positive trend, despite a certain loss of dynamism relative to the second half of 2016. In turn, the sluggish investment that had been observed since the second half of 2015 persisted. The new measurement of GDP using the new 2013 base year suggests that the output gap was slightly positive in some quarters until the second quarter of 2017, although it was not statistically different from zero. The contraction of economic activity in the third quarter implied that the estimate of the output gap decreased and is again at negative levels close to zero. For their part, conditions in the labor market have been tightening, so that there seem to be no slack conditions. However, so far, no significant wage pressures, which could impact inflation, have been perceived.

Although the consequences of the earthquakes that occurred in September on economic activity seem to have been moderate and transitory, given that the country's production capacity does not seem to have been significantly affected and reconstruction efforts are anticipated to intensify, these events call for a downward adjustment in the previous growth estimate for 2017. In particular, expected GDP growth for 2017 is revised from an interval of 2.0 to 2.5 percent in the previous Report to one between 1.8 and 2.3 percent in the current one. The growth forecast for 2018 has not been modified with respect to the previous Report, so that the GDP growth is still anticipated to lie between 2.0 and 3.0 percent, while for 2019 the growth rate is estimated to be in the range of 2.2 and 3.2 percent. This forecast considers an increasing contribution of structural reforms to growth, a favorable impact of the consolidation of the recovery of U.S. industrial activity and a strengthening of the macroeconomic framework of Mexico, which would contribute to stimulate private investment. Nonetheless, it is important to stress that the balance of risks to growth has deteriorated, and is biased to the downside, mainly due to the fact that uncertainty over the NAFTA renegotiation has kept investment at low levels and is possibly one of the reasons for the deceleration of consumption.

In view of the complex environment faced by the Mexican economy, it is still especially relevant for the authorities to persevere in maintaining solid macroeconomic fundamentals of the country. In this context, the monetary policy actions that have been implemented to maintain medium- and long-term inflation expectations anchored and to attain the convergence of inflation to its target, and the Federal Government commitment to comply with the fiscal goals for 2017 and 2018 have contributed to strengthen the macroeconomic fundamentals of the country. In particular, the 2018 Economic Package approved by the Mexican Congress reinforces the Federal Government commitment to continue with the fiscal consolidation. It stands out that for the second consecutive year public finances would reach a primary surplus in 2018 and that the public debt-to-GDP ratio would continue the decreasing trend it had started in 2017. It is also imperative to stress the importance of the efficient implementation of the structural reforms for the evolution of the potential GDP.

In this scenario, the downward trend of annual headline inflation is anticipated to continue, and this trajectory is expected to become more pronounced next year, leading to the convergence to the 3.0 percent target by the end of 2018. In 2019,

inflation is expected to fluctuate around the said target. This considers the expectation of an orderly performance of the exchange rate, as well as a considerable reduction in non-core inflation over the following months and during 2018. Annual core inflation is expected to persist above 4.0 percent during the remainder of 2017, although well below the trajectory of annual headline inflation, and it is estimated to attain levels moderately above 3.0 percent in late 2018, and to lie around this level in 2019. Additionally, even though the increment in the minimum wage starting from December 2017 can affect annual headline inflation slightly upwards in 2017, it is not expected to significantly modify its estimated convergence trajectory to Banco de México's target by the end of 2018. As regards this inflation trajectory, the Board of Governors has stated that the balance of risks has deteriorated and exhibits an upward bias in the horizon at which the monetary policy operates.

In the future, the Board of Governors will closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially considering the above described balance of risks, the future changes in the Mexico – U.S. monetary stance, the potential pass-through of exchange rate changes to prices and the evolution of the output gap, as well as the performance of potential wage-related pressures. In any event, in light of different persisting risks, the Board of Governors will remain vigilant to ensure that a prudent monetary policy stance is maintained, which would strengthen the anchoring of medium- and long-term inflation expectations, and its convergence to the target would be attained.

2.   Recent Evolution of Inflation

2.1.   Inflation

As regards annual headline inflation, after exhibiting a growing trend since mid-2016, as a result of a sequence of considerable shocks, which led to changes in relative prices that affected the measured inflation, it attainted a maximum of 6.66 percent in August, lowered in September 2017 and maintained a similar level in October. This mainly derived from two facts. First of all, a partial fading of the effects of the shocks that affected the economy, and, in particular, inflation, such as the accumulated depreciation of the exchange rate since late 2014, higher energy prices and increments in the minimum wage, as well as in the prices of some agricultural goods at the beginning of 2017. Specifically, this fading allowed merchandise prices and some energy prices to moderate their growth rate throughout the year. The second factor that accounts for recent lower inflation levels is the effect of the measures implemented by Banco de México since December 2015 and that, given the lag at which the monetary policy operates, this effect has started to be recently reflected in the change of trend, both of headline and core inflation. The factors described above initially generated a deceleration in the inflation growth rate, and, subsequently, led to a change of the inflation trend starting from August.

Thus, average annual headline inflation shifted from 6.10 percent in the second quarter of 2017 to 6.48 percent in the third one. However, as mentioned above, in August this indicator marked a maximum of 6.66 percent, while in September it went down to 6.35 percent, and reached 6.37 percent in October, which fundamentally reflected the evolution of non-core inflation. Indeed, average annual non-core inflation was 10.31 and 11.51 percent in the same quarters. In particular, it went down from a level of 11.98 percent in August to 11.28 percent in September, rebounded to 11.40 percent in October, mainly as a response to new price increments of LP gas and of some agricultural products. Hence, non-core inflation has slowed down to a lower-than-expected level. In the second fortnight of October, LP gas prices increased again, while the prices of some fruit and vegetables, such as onion, avocado and lemon, lowered their prices less than anticipated. In addition, other products, such as potato, carrot and apple, presented higher-than-estimated price increments. In contrast, average annual core inflation marked 4.78 and 4.91 percent in the referred quarters, attaining a maximum of 5.00 percent in August and decreasing to 4.77 percent in October (Table 4, Chart 104 and Chart 108).

Table 4
Consumer Price index, Main Components and Trimmed Mean Indicators
Annual change in percent

	2016			2017			
	II	III	IV	I	II	III	October
CPI	**2.56**	**2.78**	**3.24**	**4.98**	**6.10**	**6.48**	**6.37**
Core	**2.91**	**3.00**	**3.28**	**4.19**	**4.78**	**4.91**	**4.77**
Merchandise	**3.51**	**3.79**	**3.98**	**5.33**	**6.22**	**6.37**	**5.97**
Food, beverages and tobacco	3.69	3.89	4.26	5.93	6.82	7.29	6.73
Non-food merchandise	3.36	3.71	3.75	4.83	5.73	5.60	5.33
Services	**2.41**	**2.34**	**2.68**	**3.23**	**3.55**	**3.68**	**3.75**
Housing	2.21	2.32	2.40	2.52	2.56	2.61	2.65
Education (tuitions)	4.13	4.17	4.26	4.37	4.39	4.56	4.74
Other services	2.09	1.80	2.50	3.62	4.34	4.53	4.60
Non-core	**1.46**	**2.10**	**3.14**	**7.38**	**10.31**	**11.51**	**11.40**
Agriculture	**4.48**	**3.81**	**4.98**	**-0.20**	**6.39**	**12.07**	**8.37**
Fruit and vegetables	13.30	8.58	8.32	-6.88	9.60	21.80	13.21
Livestock	-0.01	1.26	3.09	4.02	4.54	6.50	5.50
Energy and government approved fares	**-0.45**	**1.01**	**2.00**	**12.28**	**12.90**	**11.14**	**13.36**
Energy	-1.49	-0.03	1.75	16.85	15.72	13.68	16.34
Government approved fares	1.41	2.83	2.48	3.91	7.99	6.82	8.09
Trimmed Mean Indicator [1]							
CPI	2.62	2.86	3.18	4.22	4.69	4.71	4.70
Core	3.04	3.18	3.26	4.00	4.40	4.51	4.49

1/ Prepared by Banco de México with data from INEGI.
Source: Banco de México and INEGI.

Chart 104
Consumer Price Index
Annual change in percent

Source: Banco de México and INEGI.
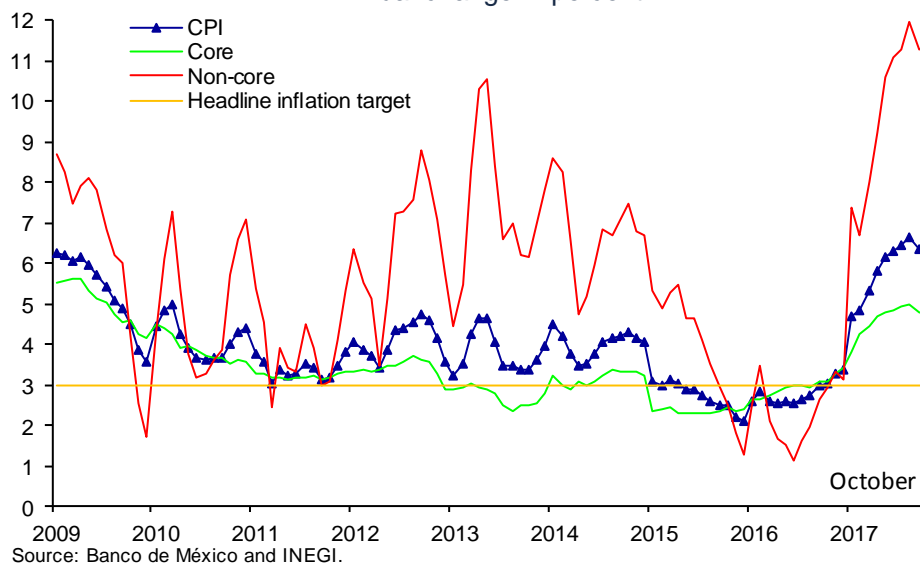
The change in the trajectory of both headline and core inflation is appreciated in more detail when analyzing the following indicators, which present the performance of the trend and the evolution at the margin. In the first place, the proportion of the headline and core CPI baskets is analyzed, which presents monthly (seasonally adjusted and annualized) price changes that are grouped into three categories: i) items with a change below 2 percent; ii) between 2 and 4 percent; and iii) over 4

percent. In the same vein, the percentage of these baskets is presented in two additional categories: the one with monthly price changes smaller or equal to 3 percent; and the one with monthly price changes over 3 percent.

This analysis indicates that the percentage of both headline and core baskets with price changes below 4 percent has been increasing (the blue and green areas, Chart 105). In particular, the share of goods and services of the headline index with price changes below 4 percent was 44 percent in the second quarter of 2017 and 51 percent in the third one, and marked 55 percent in October. On the other hand, the proportion of the basket of the core index shifted from 43 to 53 percent in the referred quarters, and marked 58 percent in October. The share of the basket of the headline index with price changes smaller or equal to 3 percent (the area below the yellow line) was, on average, 37 percent in the second quarter and 41 percent in the third one, and went up to 44 percent in October. For the core index, the respective shares were 38 percent in the second quarter, 43 percent in the third one and 46 percent in October.

Chart 105
Percentage of CPI Basket according to Intervals of Monthly Annualized Increment, s. a.[1/]
Percent

a) CPI

b) Core
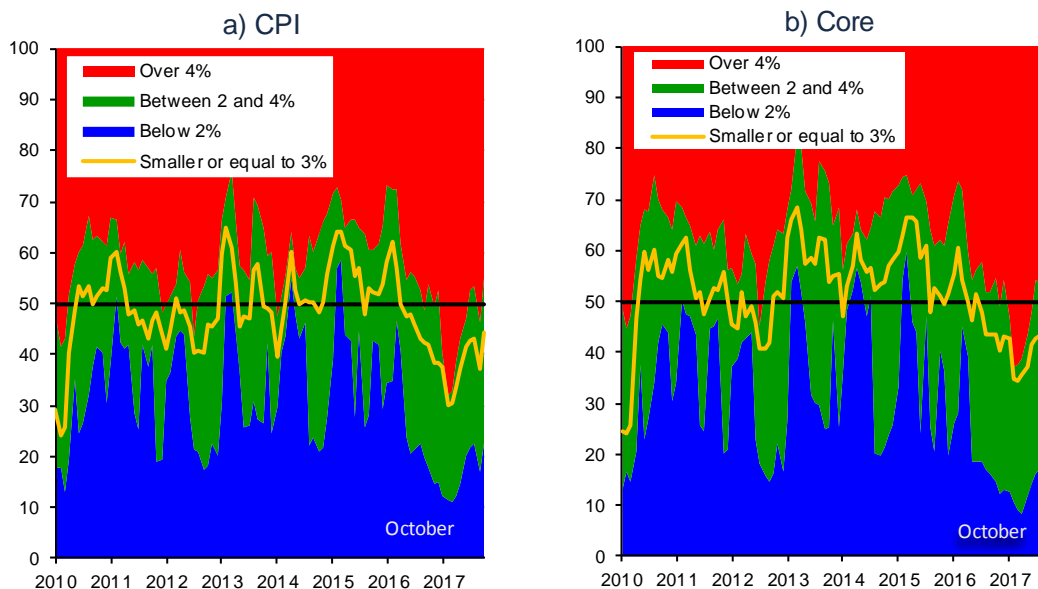
s. a. / Seasonally adjusted data.
1/ 3-month moving average.
Source: Banco de México and INEGI.

The evolution of monthly (seasonally adjusted and annualized) changes of both the headline and core indices has observed a downward trend since the beginning of the year and in recent months it has lied at levels close to 3 percent, although with a slight rebound at the margin. In the case of headline inflation it was attributed to price increments in some energy products and to the end of the period of free-of-charge services following the earthquake of September 19. In the case of core inflation, the rebound reflects a slightly greater growth in the services' prices, principally as a result of the end of the period of free-of-charge mobile and fixed-line services, following the referred earthquake. Similarly, the monthly (seasonally adjusted and annualized) changes of merchandise and services' prices have been decreasing and are also at 3 percent. As regards the moving average of these

indicators, the downward trend it presents in all analyzed cases is clear (Chart 106 and Table 4).

Chart 106
Annualized Seasonally Adjusted Monthly Change and Trend
Percent
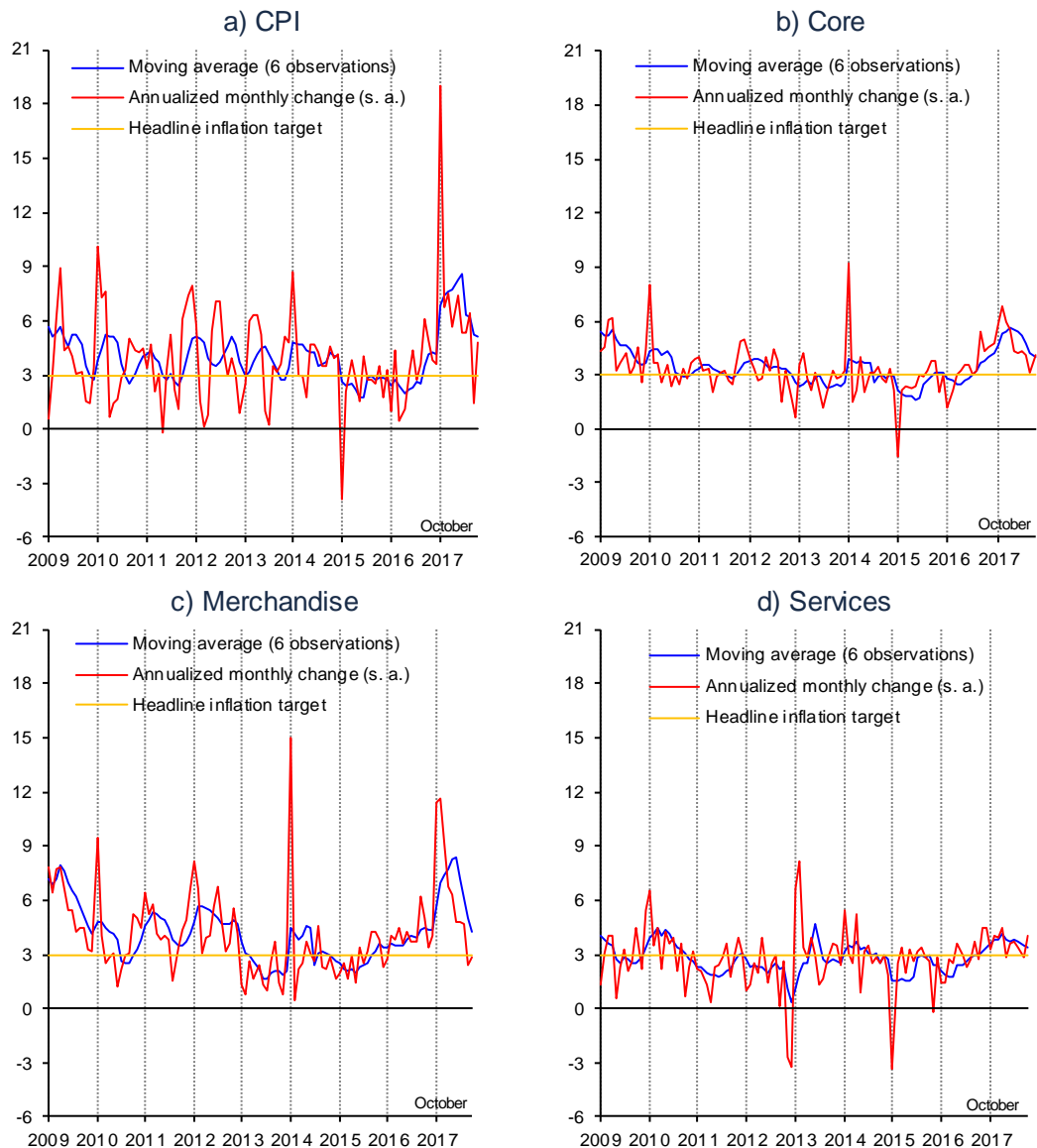
a) CPI

b) Core

c) Merchandise

d) Services

s. a. / Seasonally adjusted data.
Source: Seasonal adjustment prepared by Banco de México with own data and data from INEGI.

In addition, a measurement of the medium-term inflation trend, represented by the Trimmed Mean Indicator, shows that the current headline inflation level is principally explained by the performance of some prices, rather than by a widespread price increase phenomenon and that, if extreme variation were excluded, the inflation level would be substantially lower. Thus, The Trimmed Mean Indicator for annual headline inflation has remained relatively stable in recent months, between the second and the third quarters of 2017 shifting from 4.69 to 4.71 percent, while in October it registered 4.70 percent. These figures are in contrast with the levels of annual headline inflation observed in these dates (6.10, 6.48 and 6.37 percent, respectively). Meanwhile, the corresponding indicator of core inflation lied at 4.40 percent in the second quarter and at 4.51 percent in the third one, registering 4.49 percent in October. If these figures are compared with observed inflations, even though the gaps obtained are lower for non-core inflation, it is inferred that the level of core inflation is not derived from the phenomenon of widespread price increments either (Chart 107 and Table 4).

<div align="center">

Chart 107
Price Indices and Trimmed Mean Indicators [1]
Annual change in percent

</div>

1/ The Trimmed Mean Indicator excludes the contribution of extreme variations in the prices of some generic items from the inflation of a price index. To eliminate the effect of these changes, the following is done: i) monthly seasonally adjusted changes of the generic items of the price index are arranged from the smallest to the largest value; ii) generic items with the biggest and the smallest variation are excluded, considering in each distribution tail up to 10 percent of the price index basket, respectively; and iii) using the remaining generic items, which by construction lie closer to the center of the distribution, the Trimmed Mean Indicator is calculated.
Source: Prepared by Banco de México with own data and data from INEGI.

One of the factors that contributed the most to the recent lower inflation levels has been a change of trend in the core component as of August, when it reached its maximum point. In particular, this outcome is principally explained by lower contributions of the growth rates of merchandise prices to annual headline inflation (Chart 108).
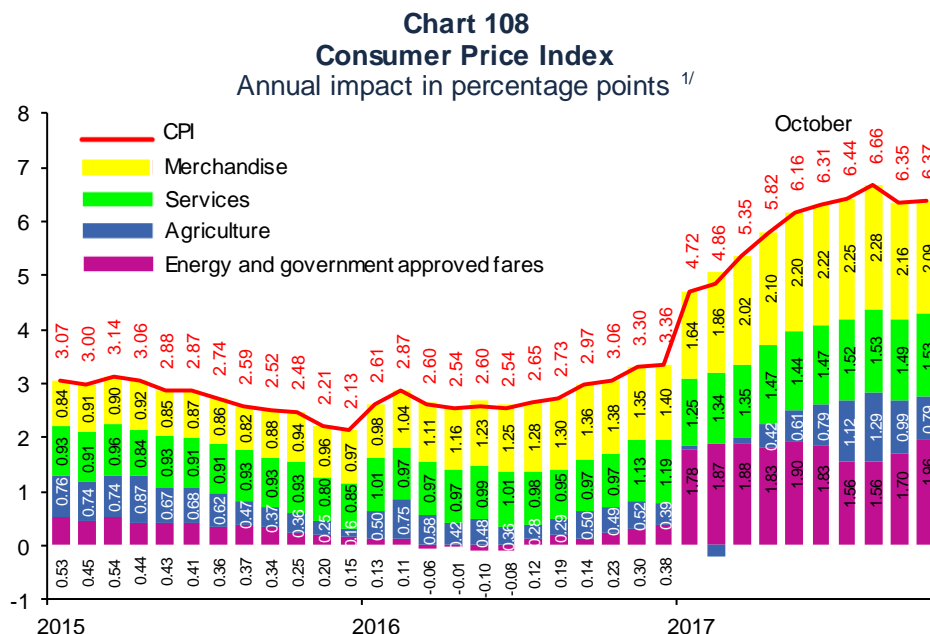
Chart 108
Consumer Price Index
Annual impact in percentage points [1]

1/ In some cases, the sum of respective components can exhibit some discrepancies due to rounding.
Source: Prepared by Banco de México with data from INEGI.

In particular:

v.   In the reference quarter, the subindex of merchandise prices still reflected the effects of the accumulated depreciation of the national currency. Thus, between the second and the third quarters of 2017, its average annual change was 6.22 and 6.37 percent, respectively. However, annual growth rates of this subindex have been moderating gradually and in August they exhibited a change of trend, so that for October its level went down to 5.97 percent. In particular, even though the growth rates of food and non-food merchandise have increased since mid-2016, as of the second quarter of 2017 the annual changes of non-food merchandise prices started to decline, while those of food merchandise prices kept growing. Thus, while the average annual change of food merchandise prices went up from 6.82 to 7.29 percent between the second and the third quarters, those of non-food merchandise went down from 5.73 to 5.60 percent. However, since September food merchandise prices also present reductions in their growth rate. Thus, in October the annual change of food merchandise prices went down to 6.73 percent and that of non-food merchandise declined to 5.33 percent (Chart 109a and Chart 109b).

vi.   The average annual growth rate of the services' price subindex shifted from 3.55 to 3.68 percent between the second and the third quarter of 2017, and registered 3.75 percent in October (Chart 109a). This performance largely derived from the evolution of the services different from education and housing, which increased from 4.34 to 4.53 percent in the referred quarters and observed 4.60 percent in October. This fundamentally was attributed to lower reductions in mobile phone tariffs as compared to last year, as well as higher prices in some food-related services. As a result of the free-of-charge period in some mobile and

fixed-line telephone services, following the earthquake of September 19, the growth rate of the services' prices went down, which reversed in October when the referred free-of-charge period concluded (Chart 110).

Chart 109
Core Price Index
Annual change in percent

a) Merchandise and Services

b) Merchandise
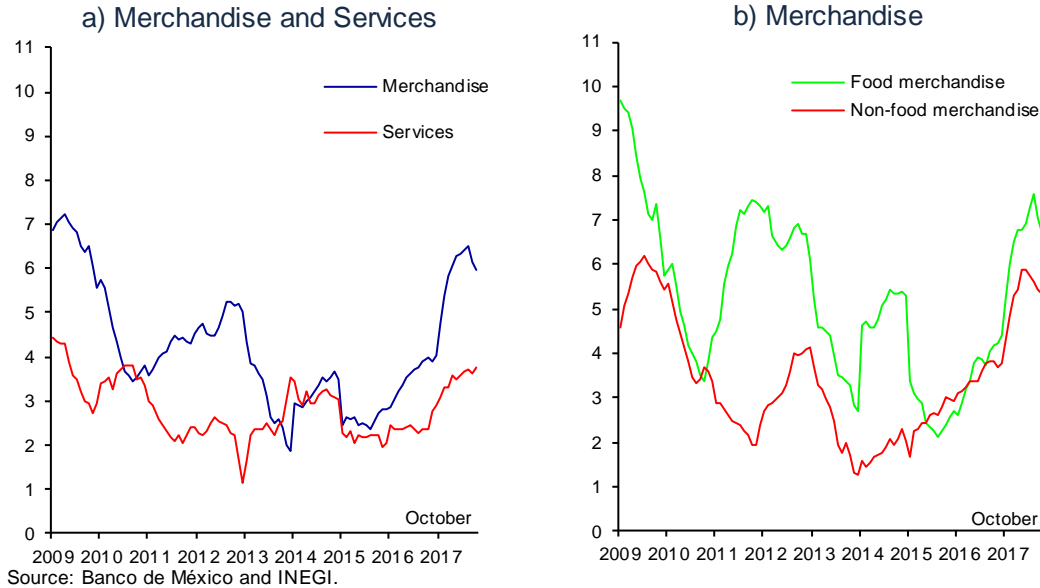
Source: Banco de México and INEGI.

Chart 110
Telephone Services Price Index 2017
Annual quarterly change in percent
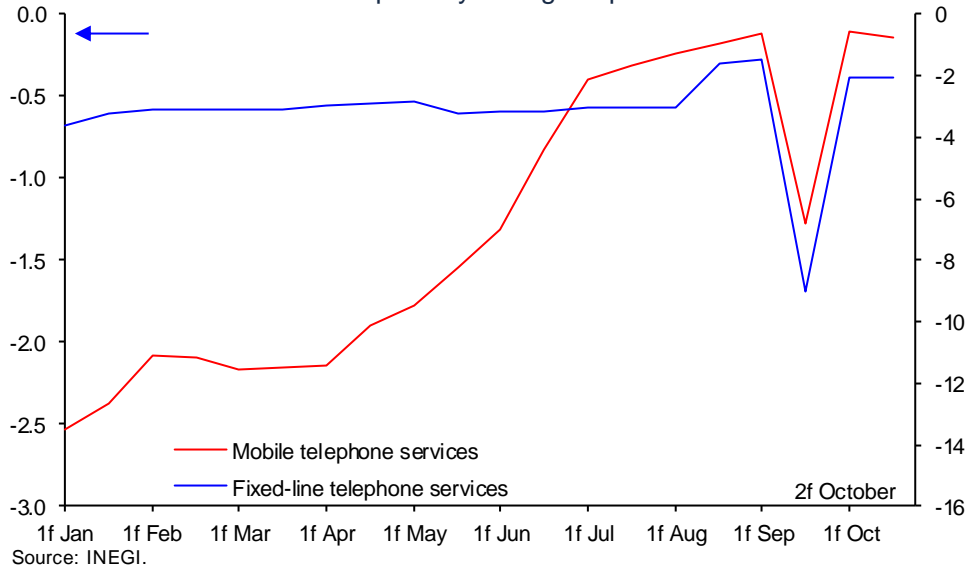
Source: INEGI.

Although annual core inflation seems to be consolidating a downward trend, the non-core component maintains high levels, which has limited the rate of curbing headline inflation. A significant part of this performance is due to price increments in some agricultural products that have been observed since the second quarter,

which, at the margin, have started to revert. In contrast, even though the growth of energy prices has been moderating since the second quarter, as of September some of them have spiked, in particular LP gas prices (Chart 112, Chart 110 and Table 4).

i. The average annual growth rate of the subindex of agricultural products' prices has gone up from 6.39 percent in the second quarter to 12.07 percent in the third one. Among the products, tomato, onion and potato presented the biggest increments, as a result of which the item of fruit and vegetables observed an increase from 9.60 to 21.80 percent in the referred quarters. However, in recent months, the supply conditions of some products have improved, which was the case of tomato, so that in October the annual change of the agricultural products' subindex declined to 8.37 percent, and the item of fruit and vegetables marked 13.21 percent (Chart 111).

Chart 111
Price Index of Selected Fruit and Vegetables
Annual change in percent
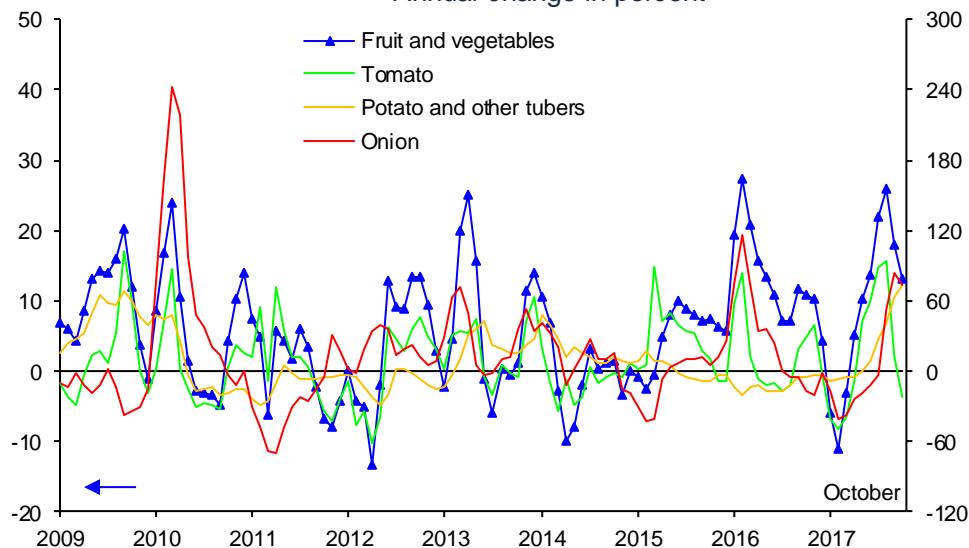
Source: Banco de México and INEGI.

ii. The average annual growth rate of the energy price subindex and government approved fares went down between the second and the third quarters of 2017 from 12.90 to 11.14 percent, which derived from moderate price increments of gasoline and natural gas during the first months of the reference quarter. Nonetheless, since September, gasolines, and, more notably, LP gas (since the second fortnight of October) presented new price increments, as a result of which the annual change of the energy price subindex and government approved fares attained 13.36 percent in October. In particular, the average annual growth rate of the item of energy products declined between the second and the third quarters of 2017 from 15.72 to 13.68 percent, and later attained 16.34 percent in October (Chart 112).

Chart 112
Price Indices of Selected Energy Products
Annual change in percent
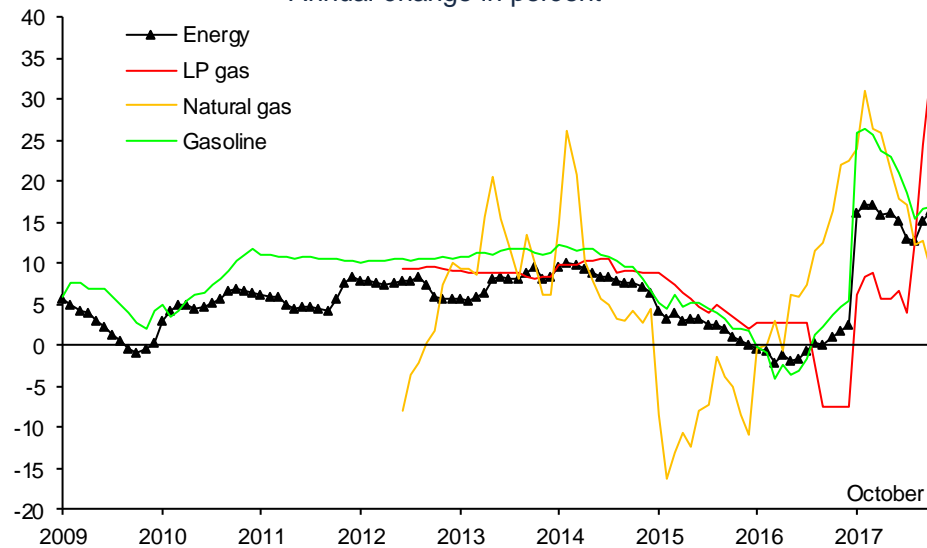
Source: Banco de México and INEGI.

Delving in the above:

- During the reference quarter, the average monthly change of gasoline was 0.44 percent, while in the second quarter it was -0.50 percent. This evolution was mainly a consequence of increments in its international references, as a result of hurricane Harvey impacts on Texas gasoline refineries in mid-August. In October, the monthly change of gasoline prices was 0.84 percent.

  As regards the price liberalization process of this fuel that is currently in process in Mexico, on October 30 the third stage of price liberalization started in the states of Baja California Sur, Sinaloa and Durango, except for the municipality of Gómez Palacio, where it had been carried out at an earlier stage.[30]

- The LP gas price, which was liberalized last January, has spiked recently, which fundamentally reflects price increments of this fuel in international markets, among other factors, as a result of its low inventories' levels relative to previous years. In addition, the still incipient transition to a more competitive market in some regions of the country could be a factor that is maintaining prices at relatively high levels.[31] In this way, its average monthly change between the

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[30] In accordance with the adjustment to the calendar to make gasoline and diesel prices in Mexico more flexible, the fourth and the last stage of this process will take place on November 30 and will encompass all states where the prices of these fuels have not been made flexible yet. That is, it considers the states of Aguascalientes, Ciudad de México, Colima, Chiapas, Estado de México, Guanajuato, Guerrero, Hidalgo, Jalisco, Michoacán, Morelos, Nayarit, Puebla, Querétaro, San Luis Potosí, Oaxaca, Tabasco, Tlaxcala, Veracruz and Zacatecas. Likewise, it considers the states of Campeche, Quintana Roo and Yucatán, where originally the flexibilization of prices was estimated to be conducted on December 30.

[31] See Box 1 of the Quarterly Report January – March 2017, "Recent Evolution of LP Gas Price and Market Considerations".

second and the third quarters of 2017 increased from -0.67 to 1.70 percent, and marked 7.41 percent in October.

- The natural gas price, which is determined in accordance with its international reference, has changed moderately. Between the second and the third quarters, its average monthly change was -1.07 and 0.85 percent, respectively, and lowered to -0.75 percent in October.

- Since the 2 percent reduction in early 2016, low consumption electricity tariffs for domestic sector have remained unchanged. Meanwhile, high consumption electricity tariffs for domestic sector (DAC) have reflected the performance of input costs required to generate electric power. Thus, during the third quarter these tariffs presented monthly changes of -0.2 percent in July, -1.7 percent in August and -0.9 percent in September. In October and November their monthly changes were 0.6 and 1.5 percent, respectively.

- The average annual changes of government approved fares went down from 7.99 to 6.82 percent between the second and the third quarters of 2017. This result was affected by the temporary free-of-charge period (after the earthquake of September 19) in subway services, as well as the city bus and parking in Mexico City, along with some highways at the national level (Chart 113). Thus, in October, when the said free-of-charge period concluded, the annual change of government approved fares went up to 8.09 percent.

Chart 113
Price Indices of Selected Government Approved Fares in 2017
Annual quarterly change in percent

Source: INEGI.
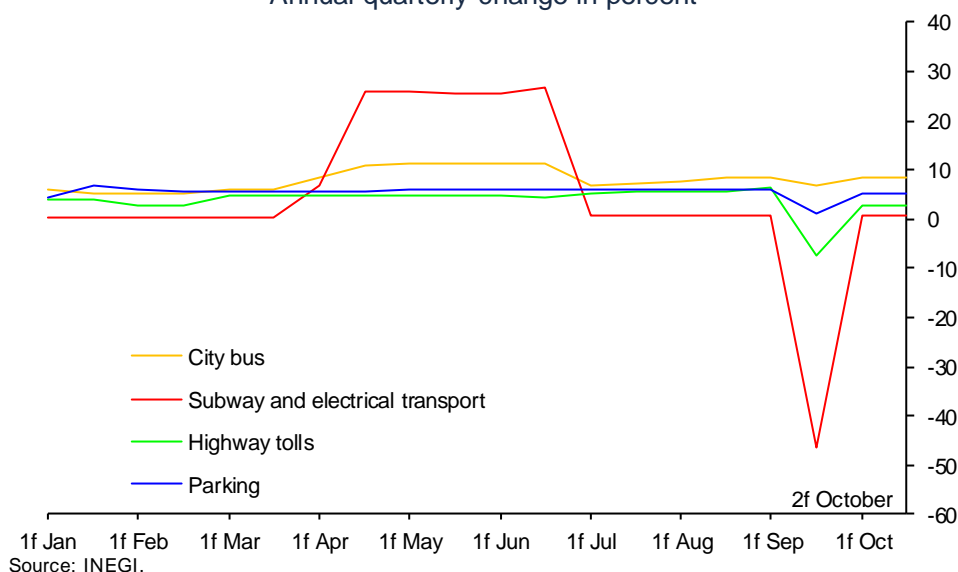
2.2.   Producer Price Index

Between the second and the third quarters of 2017, the Producer Price Index (PPI) of total production, excluding oil, registered a decrease in its average annual change rate from 7.84 to 5.35 percent and later to 5.27 percent in October 2017 (Chart 11). The PPI subindex of exports presented the greatest reductions in its annual change rates (7.04 and 2.25 percent in the second and the third quarters of 2017, respectively, while in October 2017 it lied at 3.94 percent). This reflected the fact that, by including goods quoted in USD, this index' change transferred to the national currency was reduced due to the appreciation tendency exhibited by the national currency over a good part of the analyzed period. Meanwhile, the annual change rate of the subindex of finished goods' prices for domestic consumption presents an incipient downward trend (6.60 and 6.62 percent in the second and the third quarters of 2017, in the same order, while in October 2017 it declined to 6.32 percent). As stated in the previous reports, the PPI subindex of finished goods for domestic consumption is the one with the maximum predictive power on the performance of core prices of merchandise destined to consumers. [32]

Chart 114
Producer Price Index [1/]
Annual change in percent
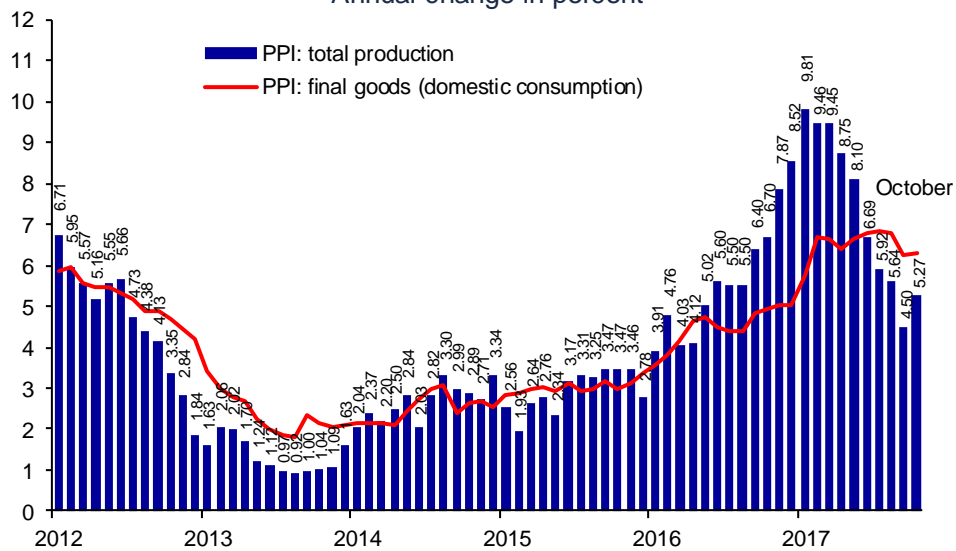
1/ Total Producer Price Index, excluding oil.
Source: Banco de México and INEGI.

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[32] See Box 1 of the Quarterly Report April – June 2016, "Can Inflationary Pressures be Identified when Measured with CPI by means of the Performance of PPI Merchandise Subindices?"

3.   Economic and Financial Environment

3.1.   External Conditions

3.1.1.   World Economic Activity

World economic activity continued expanding during the third quarter of the year, reflecting a more widespread growth rate in both advanced and emerging economies (Chart 115a). This expansion was supported by a rebound in investment, in international trade and industrial production, along with a higher confidence among businesses and households (Chart 115b and Chart 115c). Nevertheless, despite a lower slack in the use of resources, inflation remains below the targets of the main central banks of advanced economies. For the rest of 2017 and for 2018 the world economy is expected to continue expanding moderately. This scenario still faces downward risks, including high uncertainty in the geopolitical environment, possible tighter monetary conditions in most of the major advanced economies and possible protectionist measures introduced across different regions.

Chart 115
World Economic Activity

a) Growth Forecast of World GDP for 2017 and 2018
Annual change in percent

b) Industrial Production
Annual change in percent, s. a.

c) Global Consumer and Businesses' Confidence
Standard deviations with respect to the average 2010 - 2017
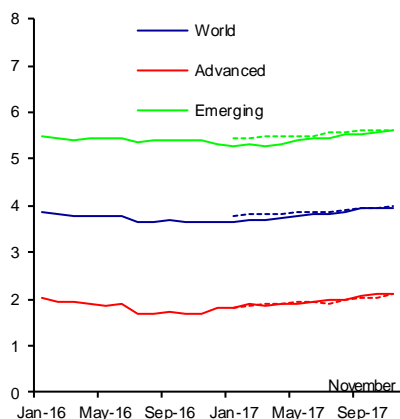
Note: The dotted line refers to the growth forecast for 2018.
Source: Prepared by Banco de México with data from Consensus Forecasts and IMF.

s. a. / Seasonally adjusted data.
Source: CPB Netherlands.
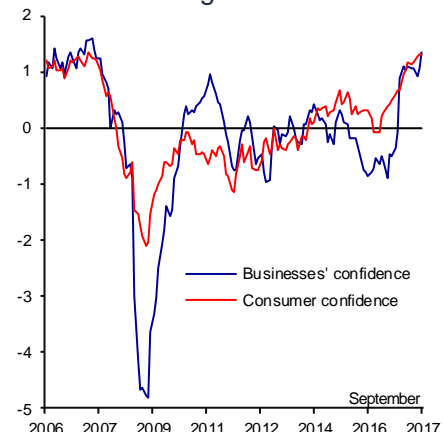
Note: It includes 65 percent of global GDP and refers to the average weighted by the share of each country in global GDP adjusted by the purchasing power parity.
Source: Banco de México with data from Haver Analytics.

The U.S. economy kept registering solid growth during the third quarter, despite significant, although temporary, effects of the hurricanes Harvey, Irma and Maria in some regions by the end of that quarter. Thus, GDP grew at an annualized quarterly rate of 3.0 percent during this period, a rate that is similar to 3.1 percent observed during the second quarter. Although at a more moderate rate than in the second quarter, spending on private consumption kept expanding in view of the labor market recovery and relatively high levels of households' wealth and confidence. Meanwhile, businesses' investment strengthened, reflecting a continuous recovery in the energy sector and in businesses' confidence. In addition, exports increased

given the greater global economic activity and the depreciation of the U.S. dollar until September (Chart 116a and Chart 116b).

Meanwhile, industrial production contracted temporarily in the third quarter, when it registered a 0.3 percent drop in annualized quarterly terms (Chart 116c). This reflected the negative impact of the hurricanes Harvey and Irma, which affected the extractive activities, manufacturing, and gas and electricity production. In the case of manufacturing, its contraction was, in large part, due to the interruption of such activities in the affected regions as production of organic chemicals and oil refining. In this sense, the Federal Reserve estimates that if the impact of hurricanes is excluded, industrial activity would have grown around 1.3 percent in annualized quarterly terms during the referred period. In October, industrial and manufacturing production expanded at a monthly rate of 0.9 and 1.3 percent, respectively. However, if the effects of the hurricanes are excluded, the Federal Reserve estimates that these activities would grow only 0.3 and 0.2 percent, respectively. Moreover, the leading indicators point to a continuous fading of the effects produced by the hurricanes on the industrial activity during the fourth quarter.

Chart 116
U.S. Economic Activity

a) Real GDP and Components Annualized quarterly change in percent and percentage point contributions, s. a.
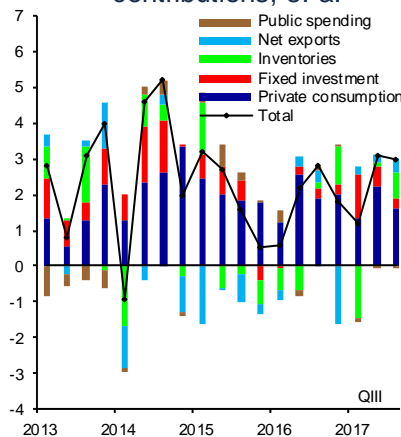
b) Net Wealth of Households and Consumer Confidence, s. a. In percent of disposable personal income and Index 1985=100
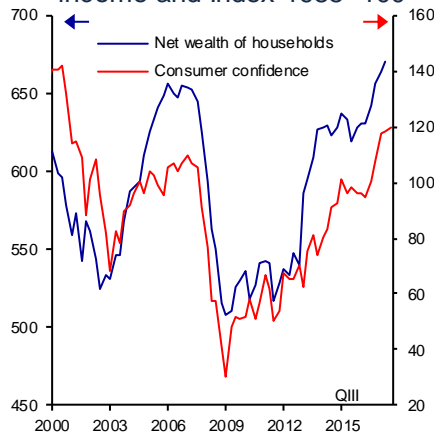
c) Industrial Activity Index Jan 2010=100, s. a.

s. a. / Seasonally adjusted data.
Source: Bureau of Economic Analysis.

s. a. / Seasonally adjusted data.
Source: Federal Reserve and Conference Board.
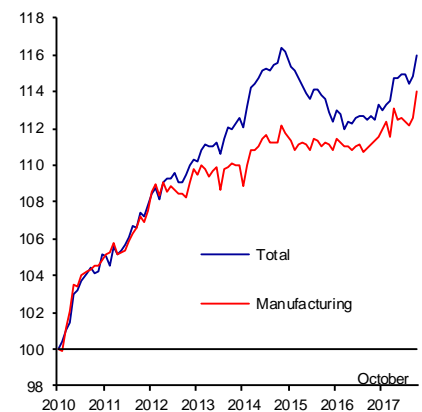
s. a. / Seasonally adjusted data.
Source: Federal Reserve.

This environment of sustained growth in the U.S. continued being reflected in a persistent strengthening of the labor market during the period covered by this Report. Indeed, between July and October on average 156 thousand new jobs were generated on a monthly basis. Even though this figure is slightly below the one observed during the first six months of the year (Chart 117a), it caused the unemployment rate to decline from 4.4 percent in June to 4.1 percent in October, locating below the long-term level estimated by the Federal Reserve. Similarly, such indicators as job openings, recruitment and resignation rates, and broader measurements of the unemployment rate kept reflecting a lower slack in the labor market (Chart 117b). Despite the prevailing improvement in the labor market conditions, wages have continued growing at a moderate rate, among other factors, reflecting low productivity growth, changes in the labor force composition and competitive pressures to maintain low costs (Chart 117c).

Chart 117
U.S. Labor Market

a) Non-farm Payroll
In thousands of jobs, s. a.
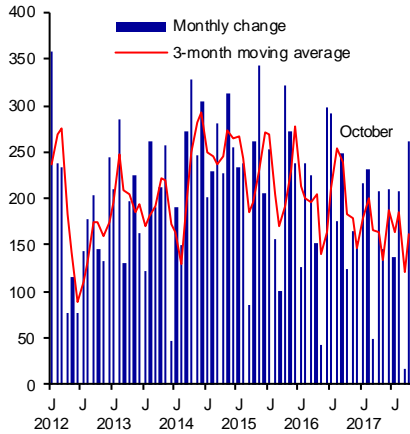
b) U.S.: Slack Measures of the
Labor Market
In percent of labor force, s. a.
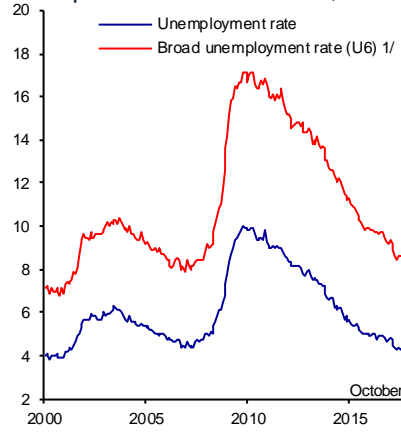
c) Wage Indicators
Annual change in percent, s. a.

s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

s. a. / Seasonally adjusted data.
1/ It also includes part-time workers who wish to
work full time and those who were not considered
as unemployed because they have not looked for
jobs for the last 4 weeks.
Source: Bureau of Labor Statistics.
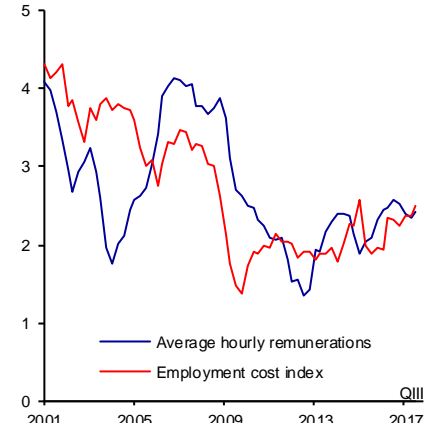
s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

The favorable growth outlook of the U.S. economy keeps facing high uncertainty related to the direction of its economic policies. On the one hand, a fiscal reform is under discussion in the U.S., and there is still uncertainty over when it could be implemented, as well as regarding its specific features. On the other hand, although the monetary policy normalization process is expected to be gradual, there is a risk that it will be faster than currently anticipated. In addition, there is still uncertainty over the results of the NAFTA renegotiation (see Box 5).

In the Euro area, economic activity expanded at an annualized quarterly rate of 2.5 percent during the third quarter, a rate similar to the average observed during the first half of the year. This dynamism kept being supported by the recovery of domestic demand, which has benefitted from accommodative monetary conditions, credit recovery and high confidence levels of both businesses and consumers. In contrast, net exports moderated given the strength of the Euro during most of 2017. In this environment, the unemployment rate declined to 8.9 percent in September, while wage remunerations have continued increasing at a moderate rate (Chart 118).

<div style="border:1px solid">

<div align="center">

Box 5
Analysis of the U.S. – Mexico Manufacturing Trade Balance in Terms of Value Added

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1. Introduction

The fragmentation of production processes across different countries, which has led to the emergence of Global Value Chains (GVC), has increased the importance of intermediate goods and services relative to that of final goods in aggregate trade flows. This has raised the complexity of the links among industries both within a single country and in international trade. Across most economies, a large quantity of imports are incorporated as inputs in the production of goods and services, which are subsequently re-exported. As a result, a country's gross value of exports systematically overestimates the value added (VA) actually contributed by the country in the production process.

The North American Free Trade Agreement (NAFTA) offers a clear example in this respect. The geographic proximity among its members, cost differentials and trade openness have led to the emergence of important shared production networks across different sectors of the three countries. This has contributed to higher levels of competitiveness and welfare in the region (Caliendo and Parro, 2015). However, the production links among these countries traditionally have been analyzed in terms of the size and composition of gross bilateral trade flows, which, as mentioned above, may be biased. As the size of intermediate trade flows within the block, as well as the importance of production agreements and the ease with which goods can cross borders in these countries can significantly distort the economic data contained in gross flows.

This leads to question whether a country's trade policy should be aimed at the reduction of the gross bilateral trade deficit, as this balance does not consider the complex production arrangements and the high import content in exports within NAFTA. Neither does it reflect the VA that a country actually generates through its insertion in international trade. In addition, the measurement of sources of VA contained in trade flows allows estimating the effect of these processes on the economic activity and job creation.

To overcome this constraint, it is necessary to use the sources of information that quantify the links of the flows of production, consumption and revenue across different sectors or industries, as well as within and among countries. This box seeks to quantify the bilateral manufacturing trade balance between Mexico and the

U.S., from a VA perspective, using the World Input-Output Database (WIOD)[1] for the period of 2002-2014.

2. Decomposition of Exports and Manufacturing Trade Balance in Terms of VA

Koopman et al. (2014) propose an accounting and analytical framework to decompose gross exports in order to track the sources of VA embedded in them, considering all productive links among industries and countries. Wang et al. (2013) extends this framework to decompose exports at the sectoral and bilateral level. This box uses the latter approach. In a synthesized way, the intuition behind this method is based on defining the exports of the country s to the trade partner r as:

$$E^{sr} = c^{sr} + A^{sr} x^r \quad (1)$$

Where E^{sr} is a vector of exports of the country s, which includes those destined to final consumption (c^{sr}) and those used as intermediate inputs by the country r ($A^{sr} x^r$). Here, A^{sr} refers to the sub-block of the matrix of technical requirements to produce one unit of output in the WIOD, which corresponds to industries of country s (rows), used as inputs by industries of country r (columns). In turn, x^r refers to the production vector of the country r.

Likewise, the following vectors of VA are defined:

$$V^s B^{ss} = \begin{bmatrix} \sum_i^N v_i^s b_{i1}^{ss} \\ \sum_i^N v_i^s b_{i2}^{ss} \\ \vdots \\ \sum_i^N v_i^s b_{iN}^{ss} \end{bmatrix} \quad V^r B^{rs} = \begin{bmatrix} \sum_i^N v_i^r b_{i1}^{rs} \\ \sum_i^N v_i^r b_{i2}^{rs} \\ \vdots \\ \sum_i^N v_i^r b_{iN}^{rs} \end{bmatrix}$$

$$V^t B^{ts} = \begin{bmatrix} \sum_i^N v_i^t b_{i1}^{ts} \\ \sum_i^N v_i^t b_{i2}^{ts} \\ \vdots \\ \sum_i^N v_i^t b_{iN}^{ts} \end{bmatrix} \quad V^s L^{ss} = \begin{bmatrix} \sum_i^N v_i^s l_{i1}^{ss} \\ \sum_i^N v_i^s l_{i2}^{ss} \\ \vdots \\ \sum_i^N v_i^s l_{iN}^{ss} \end{bmatrix}$$

In which the term v_i^n represents the VA to output ratio of sector i in the country n. In turn, the term b_{i1}^{sr} refers to the total input requirements that sector i in country s produces for sector 1 in country r. These terms refer to the elements in the Leontief matrix.[2] Finally, l_{it}^{ss} represents the element

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[1] For a more detailed description of the WIOD, see Timmer et al. (2015).

[2] For a further description of the derivation of the Leontief matrix in the context of the WIOD, see Box 2 of the Quarterly Report October – December 2016, Banco de México.

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i,t within the Leontief matrix of a country defined as $L^{ss} = (I - A^{ss})^{-1}$.

Based on Wang, et. al. (2013), we define the following measures of VA content in country's *s* exports to trade partner *r*:

1) **DVA**: Domestic VA content in exports of country *s* to country *r*.

$$DVA = (V^s B^{ss}) \circ c^{sr} + V^s B^{ss} \circ (A^{sr} X^r) \qquad (3)$$

2) **FVA**: Foreign VA content in exports of country *s* to country *r*. This includes both VA from the direct trade partner (*r*) and from third countries.

$$FVA = \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ c^{sr} + \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ A^{sr} L^{rr} c^{rr} + \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ A^{sr} L^{rr} E^{r*} \quad (4)$$

Where ∘ is the element-by-element multiplication operator or Hadamard product, and E_{r*} are total exports of country *r*.

Thus, exports from *s* to *r* are a sum of domestic and foreign VA:

$$E^{sr} = DVA + FVA \qquad (5)$$

Having defined these terms, we proceed to analyze the manufacturing trade balance between the U.S. and Mexico in terms of VA.[3]

1) Mexican manufacturing exports to the U.S. ($X_{US,MX}$) are disaggregated as

$$X_{US,MX} = DVA_{MX} + FVA_{US}^{MX} + \sum_{i \neq US}^{N} FVA_i^{MX} \qquad (6)$$

Where:

DVA_{MX}: Is Mexican VA in Mexican exports to the U.S.

FVA_{US}^{MX}: Is U.S. VA in Mexican exports to the U.S.

FVA_i^{MX}: Is VA of country *i* in Mexican exports to the U.S.

N: Is the number of countries in the WIOD.

2) U.S. manufacturing exports to Mexico ($X_{MX,US}$) are disaggregated as:

$$X_{MX,US} = DVA_{US} + FVA_{MX}^{US} + \sum_{i \neq MX}^{N} FVA_i^{US}$$

Where:

DVA_{US}: Is U.S. VA in U.S. exports to Mexico.

FVA_{MX}^{US}: Is Mexican VA in U.S. exports to Mexico.

FVA_i^{US}: Is VA of country i in U.S. exports to Mexico.

Thus, if the U.S. – Mexico gross bilateral manufacturing trade balance (*B*) is defined as:

$$B = X_{MX,US} - X_{US,MX} \qquad (8)$$

The terms can be regrouped based on the previous decomposition, so that the gross trade balance can be expressed as follows:

$$B = (DVA_{US} - DVA_{MX}) + (FVA_{MX}^{US} - FVA_{US}^{MX}) + \left(\sum_{i \neq MX}^{N} FVA_i^{US} - \sum_{i \neq US}^{N} FVA_i^{MX}\right) \quad (9)$$

VA Balance (I)   (II)   (III)

Chart 1 illustrates this equation for 2014. The left column shows the decomposition of the U.S. manufacturing exports to Mexico. These totaled USD 216.4 billion in 2014, of which USD 180 billion correspond to U.S. content; USD 3.2 billion to Mexican content, and USD 33.2 billion to third countries' content. Meanwhile, Mexican manufacturing exports to the U.S. totaled USD 246.7 billion, of which USD 148 billion correspond to Mexican content; USD 42.7 billion to U.S. content, and USD 56 billion, to third countries' content. That is, once the effect of the countries' participation in shared production chains is taken into account, which allows to identify the content of the domestic VA, it can be observed that the trade relation among the NAFTA member states entails an important source of economic activity and job creation. In addition, although the manufacturing trade balance in gross terms represents a deficit amounting to USD 30.3 billion for the U.S., the manufacturing trade balance in terms of VA yields a surplus for that country, which totals USD 32 billion. That is, although the U.S. has a gross deficit with Mexico in manufacturing trade, once the particular contribution of the former is considered for the

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[3] Gross trade flows contained in the WIOD differ official statistics, reportedeither by the U.S. Department of Commerce or by Banco de México. Gross trade figures presented in this box are aligned with the official data from the U.S. Department of Commerce, by estimating the percentage of VA that corresponds to each trade partner within each sector's exports with the information from the WIOD.

generation of VA through its trade with Mexico, it turns out that the VA generated by the U.S. and incorporated in the bilateral trade is even greater than that of Mexico, and therefore it has a surplus in terms of VA.[4]

Chart 1
Decomposition of Exports and of Gross Bilateral Manufacturing Trade Balance between the U.S. and Mexico (2014)
USD billion
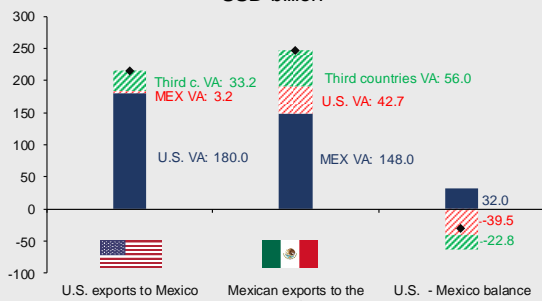
Note: Diamonds refer to exports and to gross manufacturing trade balance.
Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

Chart 2 shows that, although the gross manufacturing trade deficit for the U.S. has been considerable since 2002, the surplus in terms of the VA for the U.S. has consistently increased across time. Equation (9) shows that the balance in VA terms differs from the gross trade balance due to the presence of two terms:

- **Balance of the returned VA from the direct trade partner** (Term II). It refers to the content of the direct trade partner (U.S. or Mexico) in the exports of both countries. Thus, the gross balance overestimates the U.S. deficit, as the US VA content in Mexican exports is significantly higher than the Mexican content in U.S. exports. Chart 2 shows that this term has increased its relevance across time.

- **Balance of the foreign VA unrelated to the bilateral relation** (Term III). This term measures the intensity of third countries' VA and lowers the gross trade balance of the U.S. insofar as the foreign VA from other countries contained in Mexican exports is higher than the content in the U.S. exports. The importance of this term has slightly increased throughout the period.

Chart 2
Decomposition of Gross Manufacturing Trade Balance between the U.S. and Mexico
USD billion

Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

Table 1 extends the previous methodology to decompose total gross trade balance of goods, including the agricultural and mining sectors, while breaking down the manufacturing balance among some of the main productive sectors. A similar dynamics can be observed at the sectoral and aggregate level, in the sense that U.S. gross trade deficits with Mexico indeed entail a U.S. surplus in terms of VA, or decrease dramatically if the imported component of both countries' exports is considered.

Table 1
Trade Balance by Sector between the U.S. and Mexico (2014)
USD billion

	Gross trade balance	VA balance
Total goods	-54.07	9.80
Agriculture	-3.00	-2.48
Mining	-20.82	-19.74
Manufacturing	-30.25	32.02
Electronics	-11.04	17.84
Transport equipment	-59.46	-32.97
Chemical	19.12	17.20
Machinery	4.02	5.64
Electrical equipment	-8.54	-0.15
Basic metals	1.01	0.67
Other manufactures	24.64	23.79

Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

Similarly, it should be noted that the components of local content in exports not only include VA generated in the same exporting sector, but also the contribution from different sectors of the local economy to the production of exports of a sector in particular. In this sense, a sector's exports represent a direct exports' vehicle for the sector itself, but also an indirect exports' vehicle for the VA of other sectors. Table 2 presents the share of local VA contained in bilateral manufacturing exports of Mexico and the U.S. that was exported indirectly (that is, the VA of a sector contained in the exports of another sector). It

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[4] Similar results to the estimates in this box are obtained by using the OECD of "Trade in value added" (TiVA), in the sense that the U.S.

gross trade deficit with Mexico entails a surplus in terms of value added.

can be observed that in most sectors the U.S. exports to a greater degree serve as vehicles of indirect exports, relative to Mexican exports.[5]

Table 2
Domestic VA Exported Indirectly through a Sector Different from that where it was Generated (2014)
In percent of total domestic VA

Sector	In U.S. exports	In Mexican exports
Foods	64.00	45.32
Basic metals	63.54	51.03
Textiles and apparel	58.76	34.07
Transport equipment	58.60	42.39
Timber	57.56	46.05
Paper	57.09	47.11
Machinery	50.61	42.67
Non-metal minerals	48.91	38.56
Electrical equipment	45.64	49.04
Chemicals	35.69	50.80
Electronics	19.37	40.82

Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

Finally, Table 3 presents a comparative analysis of the U.S. trade manufacturing balance with its main trade partners. A clear difference can be seen in the nature of the U.S. trade relation with the NAFTA member states and countries that are not part of the agreement. Thus, in most cases, the U.S. exhibits significant trade deficits outside of NAFTA both in gross terms and in VA. On the contrary, the balances in the VA with other NAFTA member states represent a significant surplus for the U.S., once the high content of the imported VA in the exports among its members is contained, derived from the complex productive links within the block.

Table 3
Manufacturing Trade Balance between the U.S. and Selected Countries (2014)
USD billion

	Gross trade balance	Value added balance
Canada	53.4	83.0
Mexico	-30.2	32.0
NAFTA	**23.1**	**115.0**
Germany	-73.8	-47.3
China	-368.1	-300.1
South Korea	-30.7	-12.7
India	-23.6	-15.9
Japan	-75.2	-52.9
U.K.	-1.5	5.7

Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

3. Final Remarks

The complex nature and the importance of Global Value Chains blurs the economic information contained in gross trade figures due to the high content of imported VA in these flows.

The manufacturing trade balance between the U.S. and Mexico is a clear example of that. Even though in gross terms it represents a considerable deficit for the U.S., once the imported content in both countries' exports is controlled for, the trade relationship between them yields a significant surplus for the U.S. In this context, the trade relation between the U.S. and the NAFTA members is in a stark contrast with its relation with other countries, in the sense that the gross trade deficits it maintains with the latter indeed represent deficits in terms of VA. This reflects the importance of the productive relations and links within the block, which has allowed a mutually beneficial relation among its members.

References

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Koopman, R., Wang, Z., & Wei, S. J. (2014). Tracing value-added and double counting in gross exports. *The American Economic Review*, 104(2), 459-494.

Timmer, M. P., Dietzenbacher, E., Los, B., Stehrer, R., & Vries, G. J. (2015). An illustrated user guide to the world input–output database: the case of global automotive production. *Review of International Economics*, 23(3), 575-605.

Wang, Z., Wei, S. J., & Zhu, K. (2013). Quantifying international production sharing at the bilateral and sector levels. National Bureau of Economic Research, WP No. w19677.

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[5] Cases of U.S. electrical equipment, electronics and chemicals' exports are in contrast to the above, as they observed a very low percentage of the VA stemming from other sectors.

Chart 118
Euro Zone Indicators

a) Real GDP
Index 1Q-2008=100, s. a.

b) Bank Loans to Non-financial
Private Sector
Annual change in percent, s. a.

c) Unemployment Rate
In percent of economically active
population, s. a.

s. a. / Seasonally adjusted data.
Source: Eurostat.
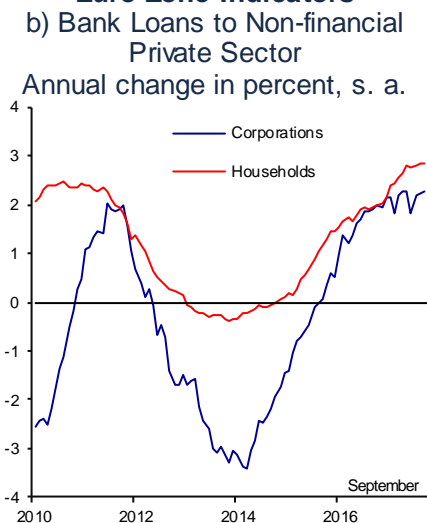
s. a. / Seasonally adjusted data.
Source: ECB.
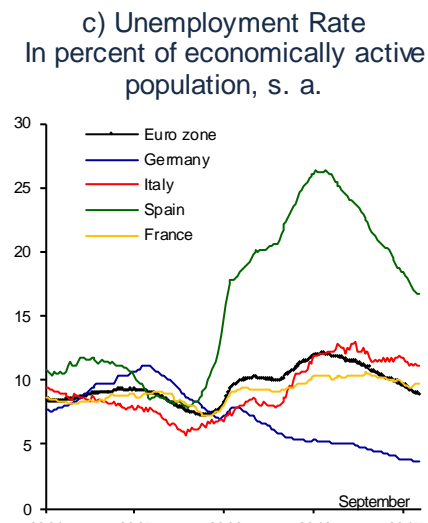
s. a. / Seasonally adjusted data.
Source: Haver Analytics.

In Japan, economic activity expanded at a rate of 1.4 percent in annualized quarterly terms during the third quarter of the year, after growing 2.6 percent in the second one (Chart 119a). On the one hand, this growth was supported by the recovery of net exports, the inventories' accumulation and the expansion of investment in equipment. In contrast, private consumption, public investment and government spending contracted relative to the previous quarter, due to negative weather conditions and the fading of the fiscal impulse. In this environment, the unemployment rate persisted at 2.8 percent.

In the U.K., in the third quarter economic activity registered an annualized quarterly growth rate of 1.6 percent, which compares to 1.2 percent in the second one (Chart 119b). On the one hand, net exports rebounded, backed by global expansion and the previous depreciation of the pound sterling. On the other hand, private investment continued growing moderately, despite having weakened given the uncertainty related to the negotiations of the U.K. withdrawal from the European Union. In contrast, private consumption remained weak, as a result of a lower consumer confidence and the weakening of the real income, the latter derived from a moderate growth of wages and from the inflation increase. In this juncture, the unemployment rate kept decreasing and marked 4.3 percent in September, which is its lowest level for over four decades.

Chart 119
Economic Activity in Japan and the U.K.

a) Japan: Real GDP and Components
Annualized quarterly change in percent and
share in percentage points, s. a.
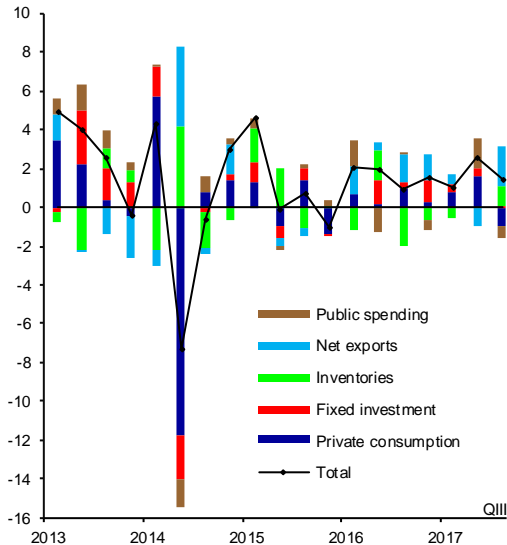
b) U.K.: Real GDP
Annualized quarterly change in percent, s. a.

s. a. / Seasonally adjusted data.
Source: Cabinet Office.
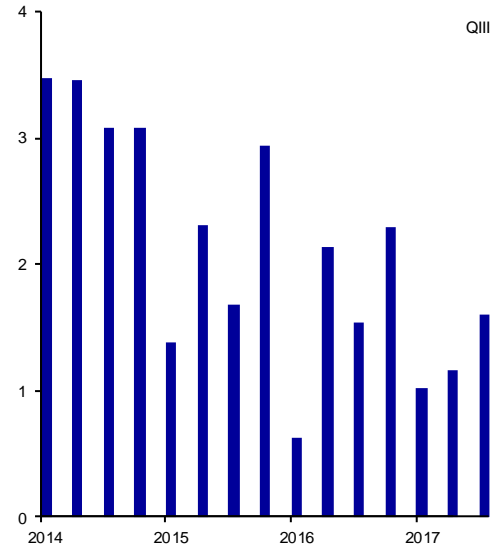
s. a. / Seasonally adjusted data.
Source: Office for National Statistics.

Productive activity in most emerging economies has continued to recover during the third quarter. Domestic spending has gone up, supported by the improved consumer and business confidence and by less restrictive credit conditions. In addition, industrial production in these economies continued expanding due to greater external demand and the growth of domestic demand (Chart 120a and Chart 120b).

In the particular case of China, economic activity kept expanding at a relatively high rate of 6.8 percent in annual terms, during the third quarter. This figure is similar to the 6.9 percent reported in the previous two quarters (Chart 120c). Despite the policies recently implemented by the Chinese government to promote financial stability, risks remain high due to the fast credit growth and high vulnerability of the corporate sector.

Chart 120
Economic Indicators of Emerging Economies

a) Emerging Economies: Indicators of Economic Activity
Diffusion index (50=neutral) and the annual change in percent, 3-month moving average, s. a.

b) Emerging Economies: Exports
Annual change of the 3-month moving average in percent

c) China: Gross Domestic Product
Annual change in percent

s. a. / Seasonally adjusted data.
Note: Industrial production and retail sales expressed in volumes.
Source: CPB Netherlands, Markit, Haver Analytics and IMF.

Note: Nominal figures.
Source: Haver Analytics.
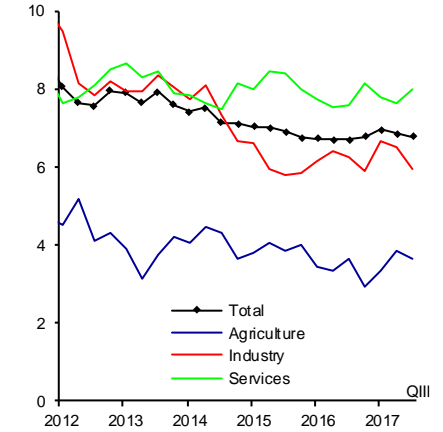
Source: Haver Analytics.

3.1.2.   Commodity Prices

International commodity prices generally recovered during the period covered by this Report. The rebound in crude oil prices was principally due to the favorable conditions of demand, the compliance with the goals in production cuts agreed upon among different countries, and the impact of geopolitical tensions in the Middle East on the said prices (Chart 121a). Likewise, industrial metal prices presented high growth in recent months in light of the favorable outlook for global manufacturing activity and investment in infrastructure in China (Chart 121b). In contrast, grain prices declined as a result of the signs of higher global supply, following a period of high volatility (Chart 121c).

Chart 121
International Commodity Prices [1/]

| a) Crude Oil USD/barrel | b) Metals Index 01/01/2014=100 | c) Corn and Wheat USD/bushel |
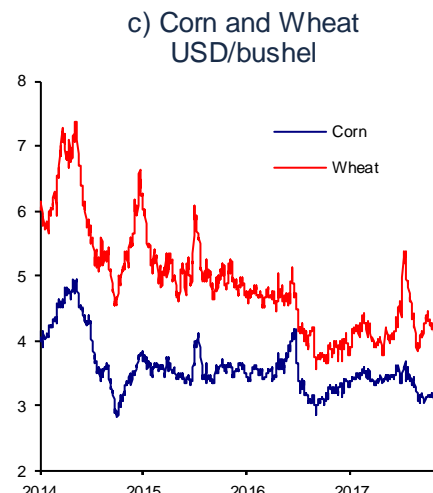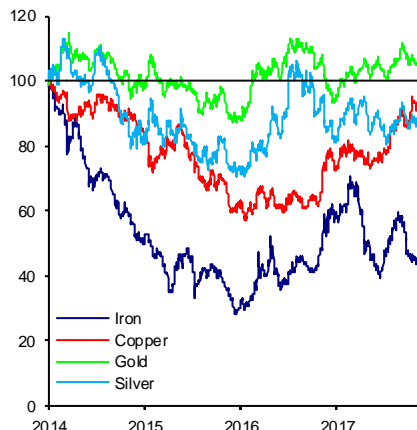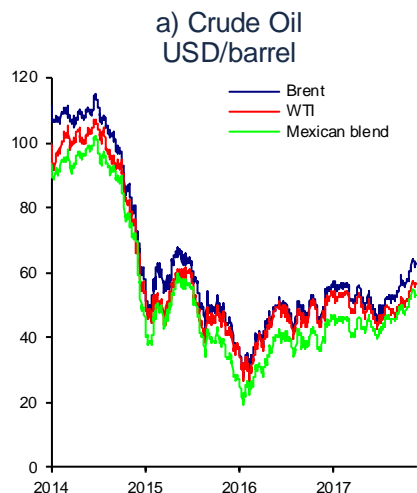
1/ Spot Market
Source: Bloomberg.

3.1.3.   Inflation Trends Abroad

Headline inflation increased slightly in most advanced economies over the reported period, as a consequence of higher energy and food prices, although it still lies below the target of their central banks. Additionally, core inflation remained low, reflecting the weak growth of wages, idiosyncratic factors and, possibly, such structural aspects as technological progress and greater economic integration caused by globalization (Chart 122a). In addition, the inflation expectations derived from surveys among analysts and those implicit in market instruments also remained low.

In the U.S., inflation has persisted below 2 percent. Indeed, the consumption deflator increased from an annual rate of 1.4 percent in June to 1.6 percent in September, mainly in response to the rebound in gasoline prices, as a consequence of the hurricanes. Meanwhile, the core inflation indicator went down from 1.5 to 1.3 percent over the said period, due to idiosyncratic factors, such as lower prices of telephone services, lodging services and goods related to healthcare.

In the Euro zone, headline inflation shifted from an annual rate of 1.3 percent in June to 1.4 percent in October, mainly backed by an increase in the prices of unprocessed foods. Meanwhile, core inflation went down from 1.1 percent in June to 0.9 percent in October, mainly due to lower prices of some goods and services, which is expected to partially reverse over the next months.

In the U.K., the headline inflation rate shifted from 2.6 percent in June to 3 percent in October, which is its highest level since April 2012. Likewise, the core component went up from 2.4 percent in June to 2.7 percent in October. Higher inflation was principally due to the increment in energy prices, higher inflation pressures derived from lower slack and the persisting effect of the depreciation of the pound sterling, which had been observed last year.

In Japan, headline inflation increased from 0.4 percent in June to 0.7 percent in September. Meanwhile, the core indicator, which excludes fresh foods and energy, shifted from 0 to 0.2 percent over the said period. This is attributed to higher stability

in the components of services and the underlying assets. However, inflation expectations have remained low.

In most emerging economies, inflation pressures remained moderate, mainly due to the still prevailing significant level of slack across most regions. In particular, inflation has observed the lowest level for the last decade in such countries as Brazil and Russia, while it remained below the central banks' targets in such countries as Thailand, China and Chile. Still, in other emerging economies inflation increased due to idiosyncratic factors, with the cases of Turkey (due to the impact on prices by the weakening of its currency) and Argentina (in view of higher government approved fares) being especially notable (Chart 122b).

Chart 122
Annual Headline Inflation in Advanced and Emerging Economies, and Reference Interest Rates

a) Advanced Economies: Headline Inflation
In percent

b) Emerging Economies: Headline Inflation
In percent

c) Reference Rate and Implicit Trajectories in OIS Curves [1]
In percent
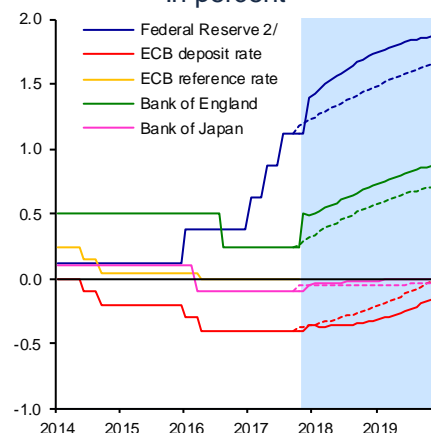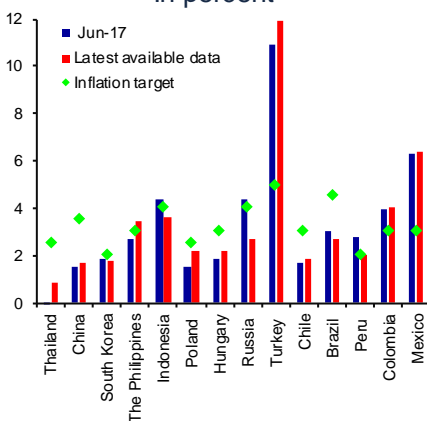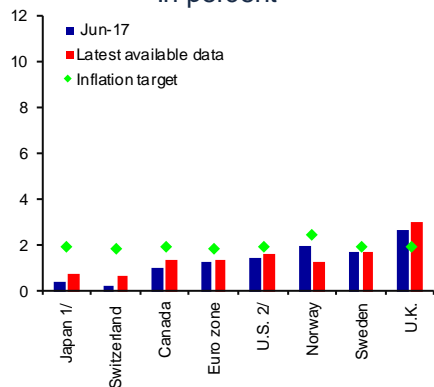
1/ It excludes fresh foods.
2/ It refers to consumption deflator. Seasonally adjusted data.
Source: Haver Analytics.

Source: Haver Analytics.

1/ OIS: fixed interest rate swap in which the fixed interest rate is the overnight interest rate. The dotted lines refer to the implicit trajectory as of June 30, 2017, and continuous lines, as of November 21, 2017.
2/ Average of the target range of the federal funds' rate.
Source: Prepared by Banco de México with data from Bloomberg.

3.1.4.   International Monetary Policy, and Financial Markets

In this environment in which inflation and its expectations remain persistently low, the central banks of the main advanced economies maintained accommodative monetary policy stances, even though some of these continued or began with their gradual normalization process. In the future, these policies are expected to remain lax. The debt instruments of advanced economies kept reflecting the expectation of gradual increments in reference interest rates (Chart 122c).

Even though in its meeting of November, the U.S. Federal Reserve maintained the target range of federal funds' rate unchanged, for the third consecutive occasion, leaving it between 1 and 1.25 percent, the estimation that it will increase its rate in December has strengthened. In its last press release, the growth was described as solid for the first time since early 2015. The Federal Reserve also stated that core inflation remains low, even though it is still anticipated to gradually converge to its 2 percent target. In view of this, the said institution added that the most adequate

stance will remain that of a gradual monetary policy adjustment and reiterated that it will continue closely monitoring the inflation evolution. In addition, as announced in its meeting of September, the Federal Reserve began its program of reducing its balance sheet in October.

In turn, in October, the European Central Bank (ECB) maintained the level of its reference interest rates and announced that starting from January 2018 it will lower the monthly amount of its asset purchase program from EUR 60 to 30 billion, extending it until September 2018. In addition, it was stressed that the said program could be extended even further, if the expected inflation trajectory is not congruent with the achievement of the target. On the other hand, the ECB emphasized that, once the asset purchase program is over, it will continue reinvesting its maturities for an extended time period. In addition, it reiterated that the reference rates will remain at current levels after the asset purchasing program is concluded.

In its meeting of November, the Bank of England raised its reference rate by 25 basis points for the first time since July 2007 and maintained unchanged its asset purchasing program. This adjustment was made in response to the increase of inflation above its target, in a context in which it considers that the prevailing slack in the labor market is limited. However, in its press release, this Institution emphasized the negative impact on its economy generated by the U.K. withdrawal from the European Union, stressing that this event has accentuated the negative trends that had been observed in investment and labor supply, decreasing the rate at which the economy can grow without generating inflation. Furthermore, the Monetary Policy Committee noted that any further increment in its reference rate will be gradual and limited.

In October, the Bank of Japan maintained unchanged its reference rate, the characteristics of its asset purchasing program and the guide to manage its yield curve. This took place in a meeting in which its inflation outlook was revised downwards for 2017 and 2018, and where it reiterated its expectation to attain its 2 percent inflation target in 2019. This central bank stressed that, although risks to economic activity have been balanced, risks to inflation remain biased downwards. In this context, some of the Central Bank members noted that it is too early to consider the monetary stimuli withdrawal.

The Bank of Canada maintained its 1 percent reference rate unchanged in its meeting of October, after having raised it by 25 basis points in each one of the previous two meetings. In its most recent press release, this Institute presented a less restrictive tone, and indicated that there is still slack in the labor market, which would allow a greater economic growth without generating inflation pressures in the short term. In addition, it expects that the recent strengthening of the Canadian dollar will slightly postpone the convergence of inflation to its 2 percent target, which is expected to take place in the second half of 2018.

In turn, in some emerging economies, such as Brazil, Chile, Colombia, India, Indonesia, Peru and Russia, the monetary stances continued further relaxing, in line with low inflation pressures. However, in some particular cases, the central banks raised the monetary policy interest rate in response to idiosyncratic factors, as was the case in Argentina and the Czech Republic.

During the period covered by this Report, financial markets have benefitted from a scenario of a greater economic recovery, from a stronger expectation that a fiscal package will be approved in the U.S., and the outlook that monetary conditions will

remain accommodative (Chart 123 and Chart 124). In this context, in advanced and some emerging economies financial asset prices kept increasing. In particular, stock market indices observed new historic maximum levels in some advanced economies. On the other hand, after having depreciated against the main currencies for the greater part of the year, the U.S. dollar has appreciated as of September, in part reflecting the expected progress in its monetary policy normalization. In turn, in some emerging economies there were still capital withdrawals. This occurred in an environment in which the search for yields and low volatility prevailed.

However, in the future there is still a possibility of more negative scenarios, in particular in view of the persisting uncertainty over the monetary normalization process of advanced economies, geopolitical tensions across different regions, along with risks to the global trade integration. Moreover, there is still concern over some of the elements that could be contained in the final draft of the U.S. fiscal reform. In this context, new volatility episodes and adjustments in valuations of financial assets (in case some of the said scenarios happen to occur) cannot be ruled out.

Chart 123
Financial Indicators in Selected Emerging Economies

a) Monthly Flows of Funds to Emerging Economies [1/] In USD billion
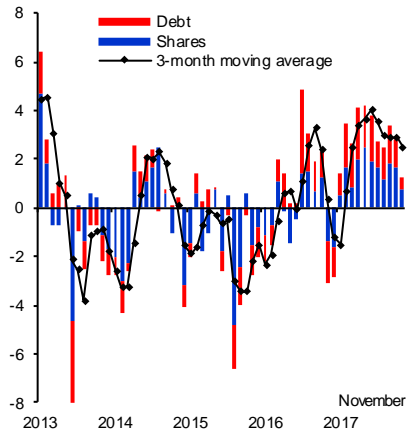
Legend: Debt, Shares, 3-month moving average

1/ The sample covers the funds used for the sale and purchase of emerging countries' shares and bonds, registered in advanced economies. The flows exclude the portfolio performance and exchange rate adjustments.
Source: EPFR.

b) Exchange Rate
Index 01/01/2015=100

Legend: Brazilian real, Czech koruna, Chilean peso, Colombian peso, Korean won, Mexican peso, Perivuan sol, Polish zloty, Russian ruble, Turkish lira

Depreciation against the U.S. dollar
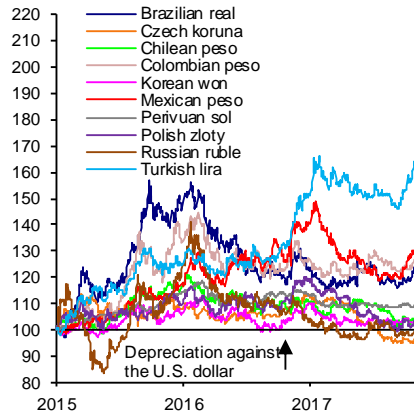
Source: Bloomberg.

c) Stock Markets
Index 01/01/2015=100

Legend: Brazil, Chile, China, Colombia, India, Mexico, Russia
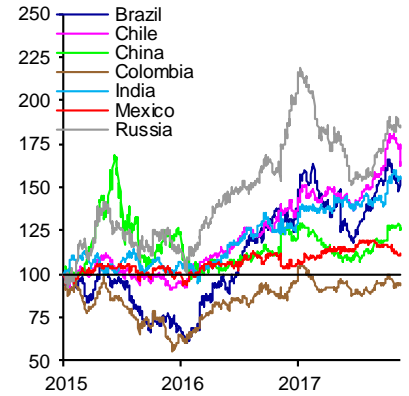
Source: Bloomberg.

Chart 124
Financial Indicators in Selected Advanced Economies
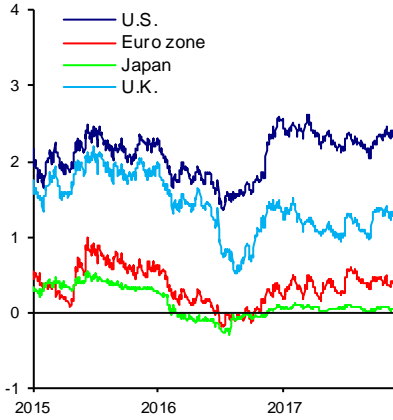
a) 10-Year Bond Yield
In percent

b) Exchange Rate
Index 01/01/2015=100
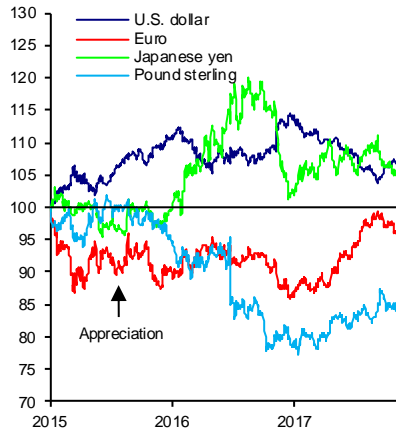
c) Stock Markets
Index 01/01/2015=100
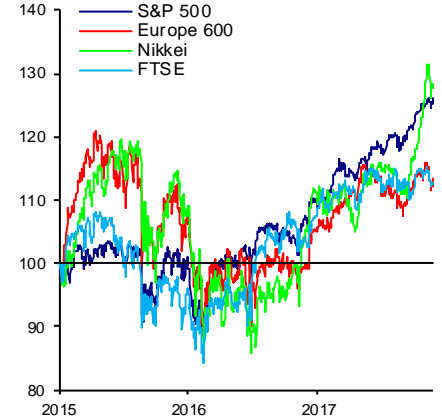
Source: Bloomberg.

3.2.   Evolution of the Mexican Economy

3.2.1.   Economic Activity

In the third quarter of 2017, the Mexican economy registered a contraction that reflected both a more pronounced slowdown in some components of aggregate demand and the adverse, although temporary, effects generated by the earthquakes, along with the strong reduction in crude oil production that had been observed in September.[33] In particular, although external demand maintained a positive trend, a certain deceleration can be appreciated in private consumption, in addition to the prevailing weakness of investment that had been registered since mid-2015.

Regarding external demand, in the period July – September 2017, manufacturing exports kept expanding, after a negative trend registered during 2015 and in early 2016 (Chart 125a). The observed increase during the quarter being reported derived from higher automotive exports, especially those destined to countries other than the U.S., while non-automotive exports remained at levels similar to those observed in the previous quarter. The latter largely reflected the stagnation in shipments to countries different from the U.S., although those destined to the U.S. also displayed some deceleration (Chart 125b and Chart 125c). In turn, oil exports went up in the third quarter of the year, although they persist at particularly low levels. The increment in these exports during the quarter was due to both a higher average price of the Mexican crude oil blend for exports and a greater volume of exported crude oil (Chart 22d). Indeed, despite the notable plunge in crude oil production in the reported period, the level of crude oil exports has increased.

Chart 125
Mexican Exports
Index 2013=100, s. a.

a) Total Manufacturing Exports   b) Non-automotive Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

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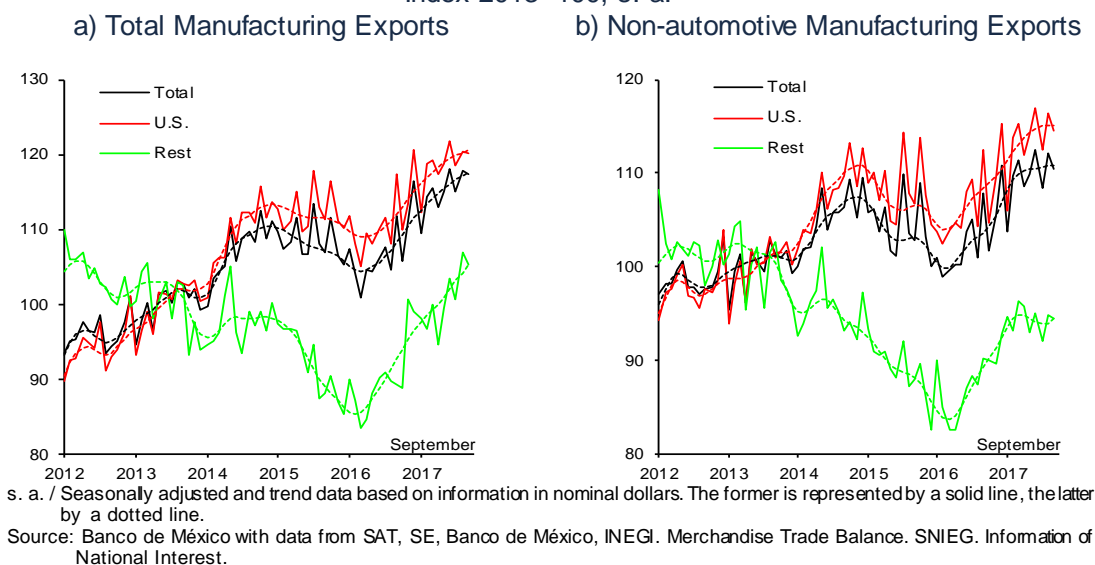
[33]On October 31, 2017, INEGI released the new data of the System of National Accounts of Mexico (SCNM), derived from the change of the base year from 2008 to 2013. It is noteworthy that based on GDP information from the period of 1993 to 2016, the average annual growth rate was modified from 2.59 percent (with the 2008 base year) to 2.46 percent (with the 2013 base year). However, the new data indicate that the GDP growth rate in the most recent years was greater than previously published. In particular, GDP growth rates were adjusted from 2.27, 2.65 and 2.29 percent in 2014, 2015 and 2016, respectively, to 2.85, 3.27 and 2.91 percent, in the same order.

c) Automotive Manufacturing Exports
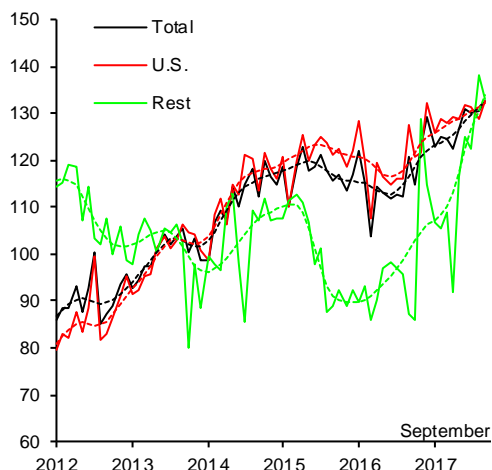
s. a. /Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

d) Oil Exports and Crude Oil Export Platform
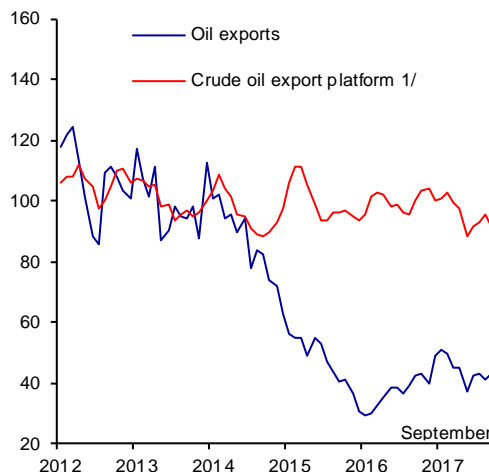
s. a. /Seasonally adjusted series based on data in nominal dollars.
1/ 3-month moving average of daily barrels of the seasonally adjusted series.
Source: Banco de México with data from PMI Comercio Internacional, S.A. de C.V; and SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

In accordance with its monthly indicator, in the period of July – August 2017, private consumption maintained a positive trend, despite a certain deceleration relative to the second half of 2016 (Chart 126a). Indeed, a slowdown in consumption of goods can be appreciated during the first half of 2017, while in more recent months there was an apparent recovery. In contrast, the consumption of services continued to show a growing trajectory.

i.   Despite a certain deceleration in some consumption determinants so far this year, they are still contributing to maintain private consumption at relatively high levels. In particular, as a result of the increment in the salaried employed population, the real wage bill remains at levels above those observed in 2008, despite the effect of inflation on real earnings (Chart 127a). Similarly, income from remittances remains at particularly high levels, while consumer confidence has recovered the levels reported in early 2016, although it still persists below those registered in 2015 (Chart 127b and Chart 127c).

ii.   Nonetheless, after the dynamism exhibited in 2016, timely indicators, although of a smaller coverage, such as the revenues of retail commercial establishments and sales of light vehicles, have exhibited a negative trend so far this year (Chart 126b). In addition, credit for consumption has decelerated recently (see Section 3.2.3).

iii.   Finally, it is also possible that the slowdown in consumption is related, to some extent, to the uncertainty over the NAFTA renegotiation.

Chart 126
Consumption Indicators
Index 2013=100, s. a.

a) Total Private Consumption, Consumption of
National Goods and Services

s. a. / Seasonally adjusted and trend data. The former is represented by
a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

b) Domestic Retail Sales of Light Vehicles
and Revenues of Retail Businesses
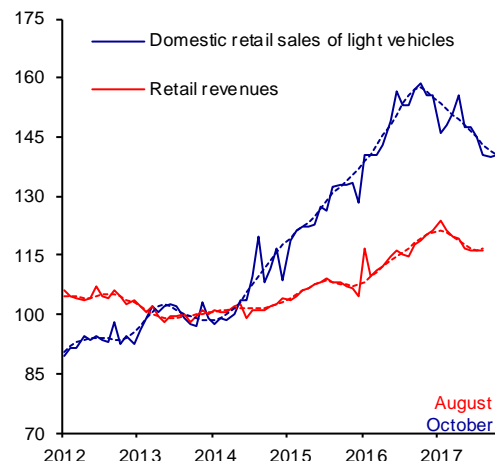
s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from the
Mexican Automotive Industry Association (AMIA) and
the Monthly Survey of Commercial Establishments
(EMEC), INEGI.

Chart 127
Determinants of Consumption
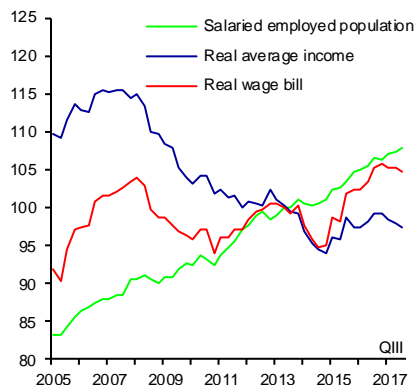
a) Total Real Wage Bill
Index 2013=100, s. a.

s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data
from the National Employment Survey
(ENOE), INEGI.

b) Workers' Remittances
Billion, constant USD and MXN,
s. a.

s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the latter
by a dotted line.
1/ Prices as of the second fortnight of December
2010.
Source: Banco de México and INEGI.

c) Consumer Confidence
Index January 2003=100, s. a.
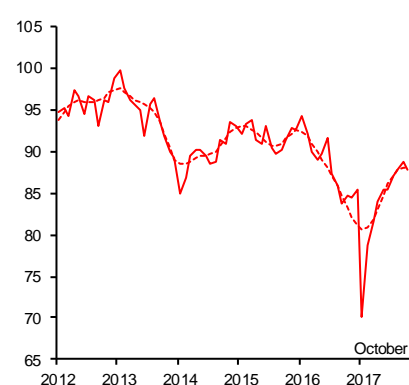
s. a. / Seasonally adjusted and trend data. The
former is represented by a solid line, the latter
by a dotted line.
Source: National Consumer Confidence Survey
(ENCO), INEGI and Banco de México.

Meanwhile, at the beginning of the third quarter of 2017, weakness of investment, which had been observed since the second half of 2015, persisted (Chart 128a). In particular, the growing trend of investment in machinery and equipment has been offset by the declining trend observed in investment in construction. The expansion of investment in machinery and equipment has reflected the growth of both the

national and imported components (Chart 128b). Within investment in construction, the performance of the residential component remained weak, while the non-residential one maintained the decreasing trajectory, which had been observed since early 2015 (Chart 128c). In turn, the latter reflected the negative trend of spending on public investment, as well as a deceleration of private investment since mid-2016 (Chart 128d). It is worth noting that since then the increasingly protectionist rhetoric in the U.S. has generated an environment of uncertainty regarding the future of the U.S. trade policy in general and the bilateral Mexico – U.S. relationship, in particular. In this context, different businesses could be delaying their decisions to invest in the country or decreasing the amounts invested. Thus, the evolution of foreign direct investment in Mexico seems to be at lower levels compared to the ones that would be observed in the absence of this uncertainty (see Box 6).

Chart 128
Investment Indicators

a) Investment and its Components
Index 2013=100, s. a.

b) Investment in National and Imported Machinery and Equipment
Index 2013=100, s. a.
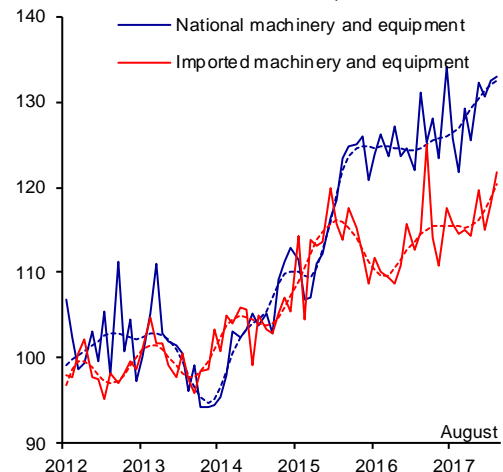
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

c) Investment in Residential and Non-residential Construction Index 2013=100, s. a.

Non-residential
Residential

August
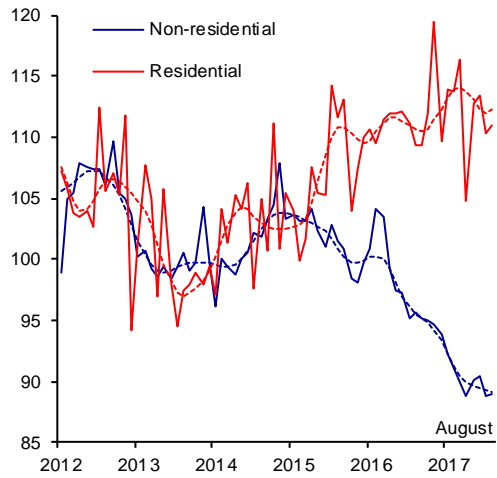
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

d) Real Value of Production in Construction by Contracting Institutional Sector Index January 2012=100, s. a.

Total
Public
Private
Private housing
Private excluding housing

August

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from ENEC, INEGI. Seasonally adjusted by Banco de México, except for the total.

**Box 6
Estimation of the Impact of Uncertainty over the Trade Policy on
Foreign Direct Investment in Mexico**

1. Introduction

Since mid-2016, during the electoral process in the U.S., and subsequently with the inauguration of the new administration, a protectionist rhetoric has prevailed in the U.S., creating an environment of uncertainty regarding the future of the U.S. trade policy, and, in particular, regarding the bilateral Mexico – U.S. relationship. Specifically, a perception persists that there is a latent risk that in the future the U.S. authorities may implement policy measures that may hinder international trade, at the expense of the efficiency gains that have been generated by value chains, both global and regional. In the case of Mexico, the uncertainty regarding U.S. trade policy has been reflected in its possible withdrawal from the North American Free Trade Agreement (NAFTA) or in a substantial adjustment in the trade conditions implied by this agreement. As a result of this possibility, as long as there is no certainty over the future of NAFTA, some firms have opted to delay or to reduce their investments in Mexico. In particular, given that foreign direct investment (FDI) is closely related to Mexico's integration in the North American shared-production chains and the preferential access of Mexican exports to the U.S., this type of investment is likely to be especially susceptible to being affected by the environment of greater uncertainty.[1]

In this context, this box analyzes the impact of uncertainty over U.S. trade policy and the future of NAFTA on FDI flows to Mexico. In particular, a Trade Policy Uncertainty Index was created to obtain a measure of the degree of this uncertainty, which was then included as an explanatory variable in an econometric model of FDI performance. The results suggest that the greater uncertainty has indeed negatively affected the FDI received by Mexico during the last quarters.

2. Trade Policy Uncertainty Index (TPU)

Although it is a fact that uncertainty can affect decisions of economic agents in general and of investors in particular, the empirical analysis of this impact has been difficult in view of a lack of measures that quantify it. Recently, Baker and coauthors (2016) have proposed to measure uncertainty regarding the economic environment using indices of the number of times certain words appear in news articles.[2] In the same spirit, this Box used the data available in Google Trends on the intensity of Internet searches related to different terms associated with international trade and NAFTA – for example, "NAFTA renegotiation" or "free trade"- to obtain an index that reflects the degree of uncertainty regarding the NAFTA-related trade policy. This index captures the uncertainty not only regarding the customs regime that may prevail, but also that related to the possible implementation of non-tariff barriers to trade in the region, or the possibility that the conditions of certainty for investment are affected. Chart 1 shows the Trade Policy Uncertainty Index (TPU) that is obtained when considering the searches at the national level. It can be appreciated that this index clearly captures that as of the third quarter of 2016 an environment of higher uncertainty has prevailed and it can even be observed that recently the uncertainty has aggravated, possibly due to the difficulties that have emerged in the process of the NAFTA renegotiation.[3]

It is natural to assume that the rise in uncertainty varies across states. In particular, it is likely that trade-related uncertainty has increased more in states that are more integrated in global markets, and, in particular, with the U.S. The methodology to estimate the trade policy uncertainty allows the construction of an index for each state of Mexico. Chart 2 shows that indeed an increment in uncertainty measured by the TPU index has been greater in the states more oriented to international trade.

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[1] The analysis in this Box is related to that presented in Box 2 of the Quarterly Report January – March 2017 ("Analysis of the Recent Performance of Private Investment"), in which evidence of a negative impact of the loss of businesses' confidence since the beginning of 2016 on the gross formation of fixed capital in Mexico was presented. In this case, the proposed measure of uncertainty seeks to capture in particular the concern about trade policies, rather than a negative sentiment with respect to a more general state of the economy.

[2] See Baker, S.R., Bloom, N. and S.J. Davis (2016). Measuring Economic Policy Uncertainty. *The Quarterly Journal of Economics*

131(4): 1593-1636. For an application to a trade policy, see Handley, Kyle and Nuno Limao. (2017). "*Trade under T.R.U.M.P. Policies*", in *Economics and Policy in the Age of Trump*. Chad P. Bowen, editor. CEPR Press.

[3] An increase in the TPU index is assumed to have a negative connotation, given that, under the current conditions, during the analyzed period it is appropriate to assume that internet searches of the terms included in the elaboration of the index fundamentally reflect a greater concern over the future of the NAFTA.

Chart 1
Trade Policy Uncertainty Index (TPU)
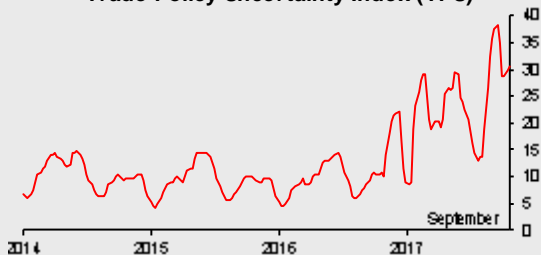
Note: The TPU index is constructed based on the standardized results of the Google Trends for the searches of the following terms: "NAFTA", "*TLCAN*", "NAFTA Trump", "*TLCAN Trump México*", "*Renegociación NAFTA*", "*tarifa*", "*libre comercio*", "*¿Qué es NAFTA?*". The TPU index shown corresponds to the index at the national level.
Source: Prepared by Banco de México with data from Google Trends.

Chart 2
Change in the TPU Index and Share of Manufacturing Exports
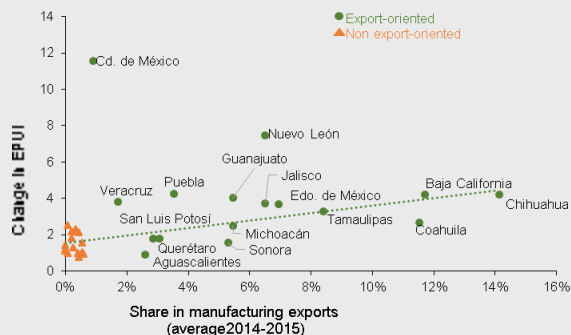
Note: The change in the TPU index plotted in the vertical axis refers to the difference of its average from 2016-III to 2017-I and its average from 2015-III to 2016-II. Export-oriented states are those that have a share in national manufacturing exports above the median. The trend line excludes Mexico City.
Source: Prepared by Banco de México with data from INEGI and Google Trends.

3. Uncertainty over the Trade Policy and Foreign Direct Investment

When it is costly to reverse investment decisions, investors may find it optimal to postpone their spending on investment until more information on the economic environment is available. Thus, the higher the uncertainty, the greater the value of waiting before committing recourses to an investment project (see, for

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[4] It should be noted that from a theoretical point of view, the relationship between uncertainty and macroeconomic variables, including those related to investment, is ambiguous. That is, this relationship could be positive or negative, depending on the specific conditions of the decision problem. For example, under certain conditions, greater uncertainty could increase the marginal return of capital, fostering greater investment. For a deeper discussion of the relationship between investment and uncertainty, see, for example,

example, Dixit and Pindyck; 1994).[4] In this sense, the environment of uncertainty that has prevailed since the second half of 2016 could be already negatively affecting the flows of FDI to the country.

In order to identify the impact of uncertainty over trade policy on FDI, an econometric model was estimated, exploiting the change of the TPU indices over time and across states. This model includes fixed state effects to control for state characteristics that do not vary in the analyzed period and fixed time-effects to control for shocks that are common to all states, and which could affect FDI flows, as well as indicator variables by quarter to control for seasonality effects in FDI inflows. In addition, it is necessary to control for variables that can change across time in a differentiated manner across states and that could affect the appeal of each state as a destination for the FDI. Therefore, the model included an indicator of public insecurity. Thus, the following equation was estimated for a sample with a quarterly frequency that covers the period between the first quarter of 2014 and the first one of 2017.

$$\frac{FDI_{s,t}}{GDP_t} = \beta \cdot TPU_{s,t} + \gamma \cdot X_{s,t} + \mu_s + \mu_q + \mu_t + \varepsilon_{s,t}$$

Where:

FDI = Foreign direct investment of the state s;

GDP = National gross domestic product in current dollars;

TPU = Trade Policy Uncertainty Index;

X = Control for public insecurity;

μ_s = Fixed state-effects;

μ_t = Fixed time-effects;

μ_q = Indicator variables by quarter; and

ε_{st} = Error term.

The first column of Table 1 presents the results that are obtained using the sample with all states. It stands out that the coefficient associated with the TPU index is negative and statistically significant; hence the model supports the hypothesis that there is an inverse relation between FDI and uncertainty. Given that the effect could depend on the states' exposure to international trade, the model was estimated for two different samples: one including export-oriented states, and the other one consisting of the rest of the states.[5] It can be appreciated in columns 2 and 3 of Table 1 that the negative effect of a greater uncertainty is indeed greater in export-oriented states.

Abel, A.B. (1983). *Optimal Investment Under Uncertainty. American Economic Review* 73(1): 228 –33, Caballero, R. (1991). *On the sign of investment-uncertainty relationship. American Economic Review* 81: 279–288. Dixit, A. and R. Pindyck (1994). *Investment Under Uncertainty*. Princeton, NJ: Princeton University Press.

[5] The sample of export-oriented states includes the states, whose share in national manufacturing exports in 2015 is above the median.

Table 1
Estimation Results

Depend. variable: FDI as % of GDP	(1) Complete sample	(2) Export-oriented states	(3) Non-export oriented states
EPUI	-0.0009*	-0.002*	-0.0004*
	(0.0005)	(0.0008)	(0.0002)
Fixed state effects	Yes	Yes	Yes
Fixedd time effects	Yes	Yes	Yes
Fixed seasonal effects	Yes	Yes	Yes
Control for homicide rate	Yes	Yes	Yes
Observations	416	195	221
Adjusted R^2	0.721	0.752	0.688

Note: The model was estimated based on quarterly figures between 2014-I and 2017-I. Standard errors are grouped at the state level and reported in parenthesis. Statistical significance codes: * $p<0.10$, ** $p<0.05$, *** $p<0.01$.

4. Counterfactual Exercise

To estimate the possible negative effect of uncertainty on FDI, the relevant comparison is the one between the actual inflows and those that would have been observed in the absence of greater uncertainty. Thus, although the FDI inflows observed in the first semester of 2017 were above those reported for the same period of the previous year (Chart 4), in the absence of the greater uncertainty these could have been even larger. Hence, a counterfactual scenario is built, in which it is assumed that from the third quarter of 2016 and until the third quarter of 2017 the state TPU indices remained at the average level that was observed between the first quarter of 2014 and the second one of 2016. Although the counterfactual assumption refers to each state's TPU index, as an illustration, Chart 5 shows this premise for the national TPU index. The counterfactual level of the FDI is calculated using the estimations corresponding to the complete sample (column 1 of Table 1).

The result of this exercise suggests that higher uncertainty has discouraged FDI flows to Mexico. In particular, it is estimated that the uncertainty observed during the second half of 2016 and until the third quarter of 2017 lowered FDI flows to the country by approximately USD 4.4 billion with respect to what would have been observed in the absence of the higher uncertainty. This figure is equivalent to approximately 13 percent of the FDI registered in Mexico in 2015. Furthermore, the FDI that is estimated to have been discouraged has been greater precisely in the states that are more export-oriented.

Chart 4
Foreign Direct Investment in Mexico
USD billion
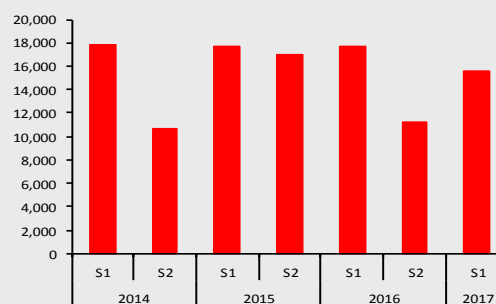
Source: Prepared by Banco de México with data from the Ministry of Economy.

Chart 5
Counterfactual and Observed TPU Indices
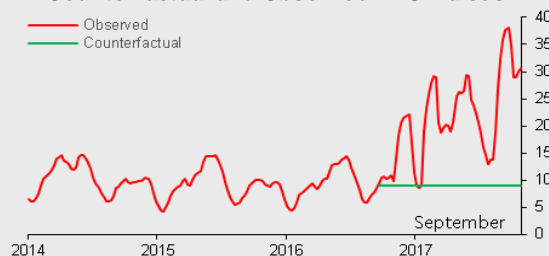
Note: The TPU index is constructed based on the results of the Google Trends for the searches of the following terms: "NAFTA", "TLCAN", "NAFTA Trump", "*TLCAN Trump México*", "*Renegociación NAFTA*", "*tarifa*", "*libre comercio*", "*¿Qué es NAFTA?*". The EPUI at the national level is shown.
Source: Prepared by Banco de México with data from Google Trends.

5. Final Remarks

The uncertainty that has prevailed since the second half of 2016 regarding U.S. trade policy in general and the NAFTA renegotiation in particular has contributed to the weakness of investment in Mexico, even considering that so far no formal changes have been made to NAFTA. This environment makes it imperative that Mexico adopts policies that make its economy a more attractive destination for investment, regardless of its trade relationship with the U.S. Therefore, the economic policy actions should continue to strengthen the macroeconomic framework of Mexico and to push the proper implementation of the structural reforms. Similarly, it becomes even more pressing to enhance the rule of law, as, in a context of uncertainty over the returns on investment, public insecurity problems may become a more relevant factor for investors' spending decisions. It should be kept in mind, that as long as Mexico manages to increase its investment, both domestic and foreign, capital accumulation will allow the country to attain a greater potential growth rate.

Regarding the evolution of economic activity from the production side, in line with the flash estimate released by INEGI, GDP declined at a seasonally adjusted quarterly rate of 0.2 percent during the third quarter of 2017 (a 1.6 percent increment at an original annual rate and 1.7 percent at a seasonally adjusted annual rate), after having expanded at rates of around 0.6 percent over the previous quarters (Chart 129). It is estimated that the impact generated by the earthquakes diminished the seasonally adjusted quarterly growth rate of the third quarter by about 0.2 percentage points, while the unanticipated temporary contraction in crude oil production in September diminished it by around 0.1 percentage points.

Chart 129
Gross Domestic Product

a) Quarterly Change
Percent, s. a.

b) Annual Change
Percent
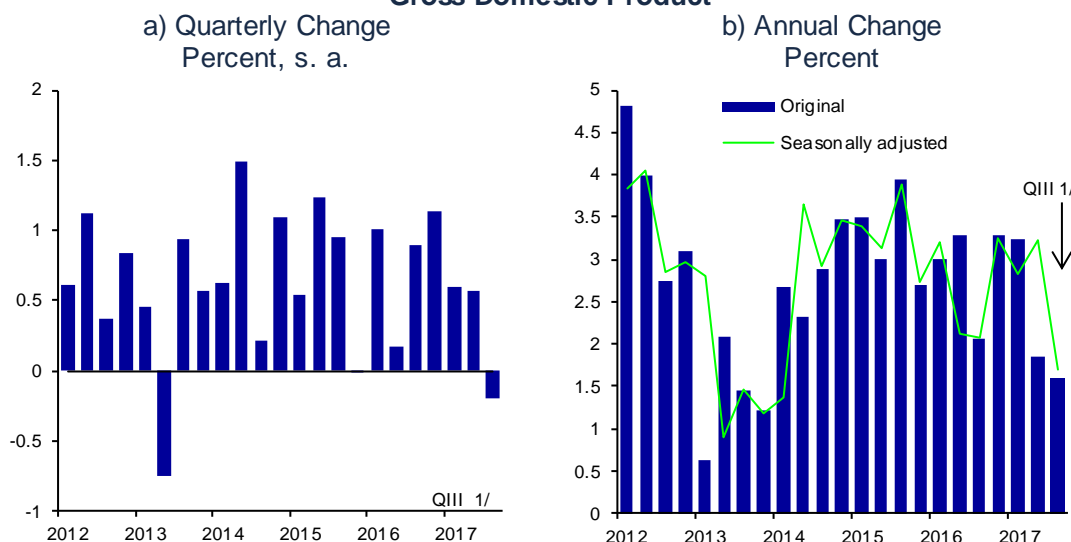
s. a. / Seasonally adjusted data.
1/ The figure corresponding to the third quarter of 2017 refers to the timely estimation of quarterly GDP released by INEGI.
Source: Mexico's National Accounts System, INEGI.

In the July – September quarter, the weak performance, which had been presented by industrial activity since mid-2014, persisted, while, according to the flash estimate reported by INEGI for the quarter as a whole, tertiary activities contracted (Chart 130a). In particular:

i.   Within the industrial activity, it stands out that mining maintained a negative trend in the third quarter, that was aggravated in September due to the fall in crude oil production, which represents around 64 percent of the value added of the mining sector. Nonetheless, it should be noted that this production recovered in early October (Chart 131a and Chart 131b). Meanwhile, mining-related services seem to have stopped declining, although they remain low.

Chart 130
Production Indicators
Index 2013=100, s. a.

a) Economic Activity Indicators

s. a. / Seasonally adjusted and trend data. The former is
    represented by a solid line, the latter by a dotted line.
1/ Figures as of August 2017.
2/ Figures as of September 2017 of the Monthly Industrial Activity
    Indicator.
Source: Mexico's National Accounts System (SCNM), INEGI.

b) Industrial Activity

s. a. / Seasonally adjusted and trend data. The former is
    represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National
    Accounts System (SCNM), INEGI.

    ii.   Similarly, in the period July – September the construction industry remained weak (Chart 130b). Specifically, spending on construction projects remains stagnant, which can be in part associated to the negative effect of the uncertainty over the future Mexico – U.S. trade relationship on investment, as well as the reduction in public investment. Likewise, the indicator of spending on civil engineering construction persists at low levels, contrary to what was observed for the specialized construction works component.

    iii.   In contrast, in the reported period, manufacturing activity kept presenting a positive trend (Chart 130b). In particular, in line with the dynamism of automotive exports, the subsector of transport equipment maintains a growing trajectory, while the aggregate consisting of rest of the manufacturing activities somewhat recovered with respect to the negative trend it had registered at the beginning of the year (Chart 132).

Chart 131
Oil Production Platform and Mining Sector

a) Crude Oil Production Platform
Thousands of barrels per day, s. a.

b) Mining Sector Components
Index 2013=100, s. a.
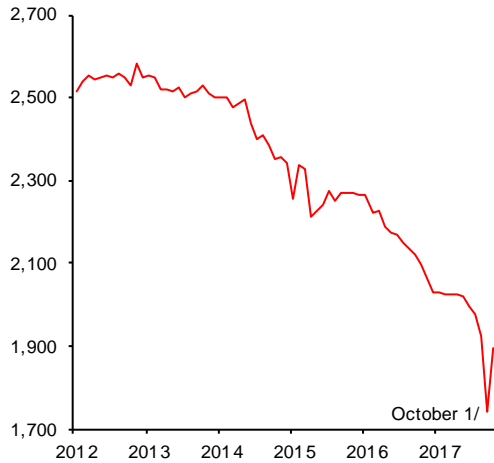
s. a. / Seasonally adjusted data.
1/ Data as of October 29, 2017.
Source: Seasonal adjustment by Banco de México with data from
PEMEX Institutional Database.
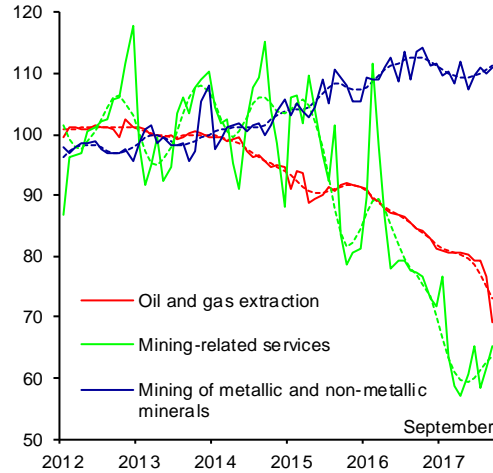
s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National
Accounts System (SCNM), INEGI.

Chart 132
Manufacturing Sector
Index 2013=100, s. a.

a) Transport Equipment Manufacturing
Subsector
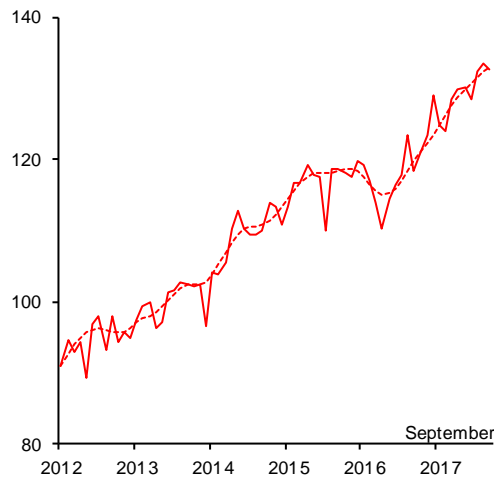
b) Manufacturing Subsector Excluding
Transport Equipment
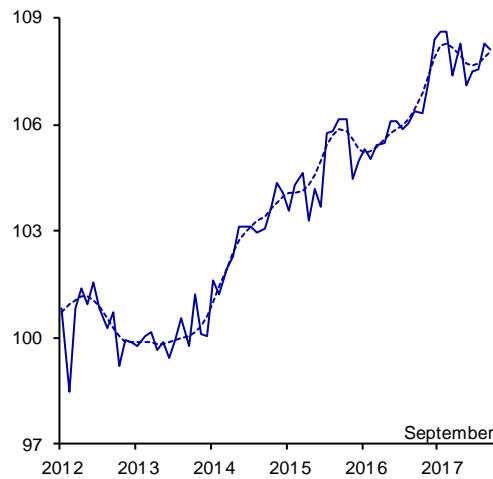
s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National
Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Prepared and seasonally adjusted by Banco de México
with data from the Monthly Industrial Activity Indicator,
Mexico's National Accounts System (SCNM), INEGI.

iv.   Growth of the services component in July – August 2017 reflected mainly the expansion in the components of transport and mass media information, and financial and real estate services, given that commerce displays a certain deceleration. However, this evolution is estimated to be offset by the negative effects of the earthquakes that occurred in September. Indeed, the estimate that the earthquakes subtracted 0.2 percentage points from the growth of the third quarter with figures adjusted for seasonality is mainly based on the negative effects that these are expected to have had on tertiary activities that month, as it is expected that in September a contraction in education, temporary lodging services, recreational services and certain real estate-related activities will be observed (Chart 133).

v.   The quarterly seasonally adjusted expansion of the primary activities in the third quarter of 2017 derived, to a large extent, from a larger sown area in the spring – summer cycle, as well as from higher production of beans, orange, avocado, and forage corn.

Chart 133
IGAE of the Services Sector
Index 2013=100, s. a.
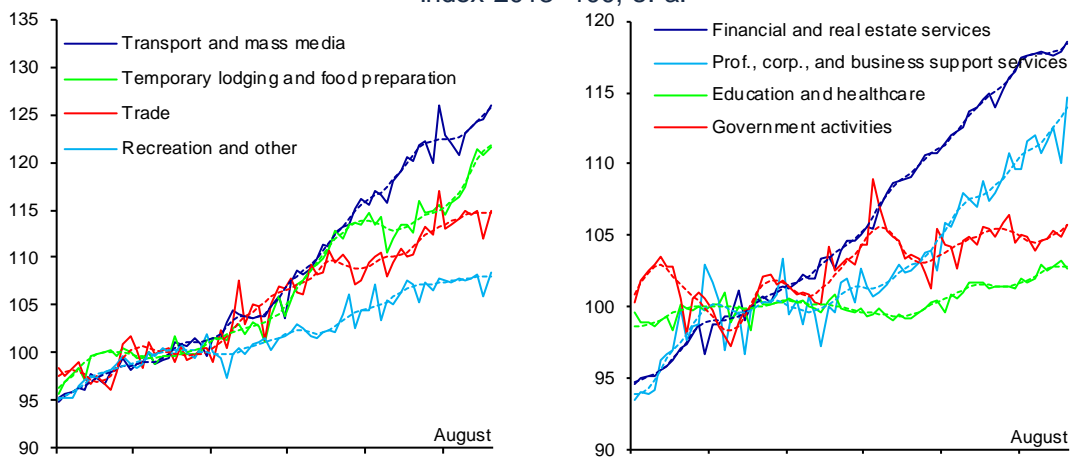
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

The deficit of the current account in the third quarter of 2017 is expected to have been smaller than that in the same quarter of the previous year (Chart 134b and Chart 134c). Indeed, the annual increase in the crude oil trade deficit is anticipated to have been offset by smaller deficits in the non-oil trade balance and in the primary income balance, as well as by larger surpluses in the remittances and travelling accounts. In particular, in the period July – September 2017, the total trade balance increased in its annual comparison, and shifted from USD 5.2 billion in the third quarter of 2016 to USD 6.1 billion in the same quarter of 2017 (Chart 134a). This increment largely reflected the fact that the deficit in the oil trade balance in the reported quarter presented an annual increase, and so the negative balance has continued expanding since the last quarter of 2014. In contrast, the deficit in the non-oil trade balance was smaller than that of the third quarter of 2016, in a context in which the strengthening of the global economic activity has caused Mexico's

manufacturing exports to keep recovering, especially automotive exports, and in which the real exchange rate marked high levels.

Chart 134
Trade Balance and Current Account

a) Trade Balance USD millions	b) Current Account USD millions	c) Current Account Share of GDP

Source: SAT, SE, Banco de México, INEGI.
Merchandise Trade Balance. SNIEG.
Information of National Interest.

e/ Estimated by Banco de México.
Source: Banco de México.

e/ Estimated by Banco de México.
Source: Banco de México and INEGI.
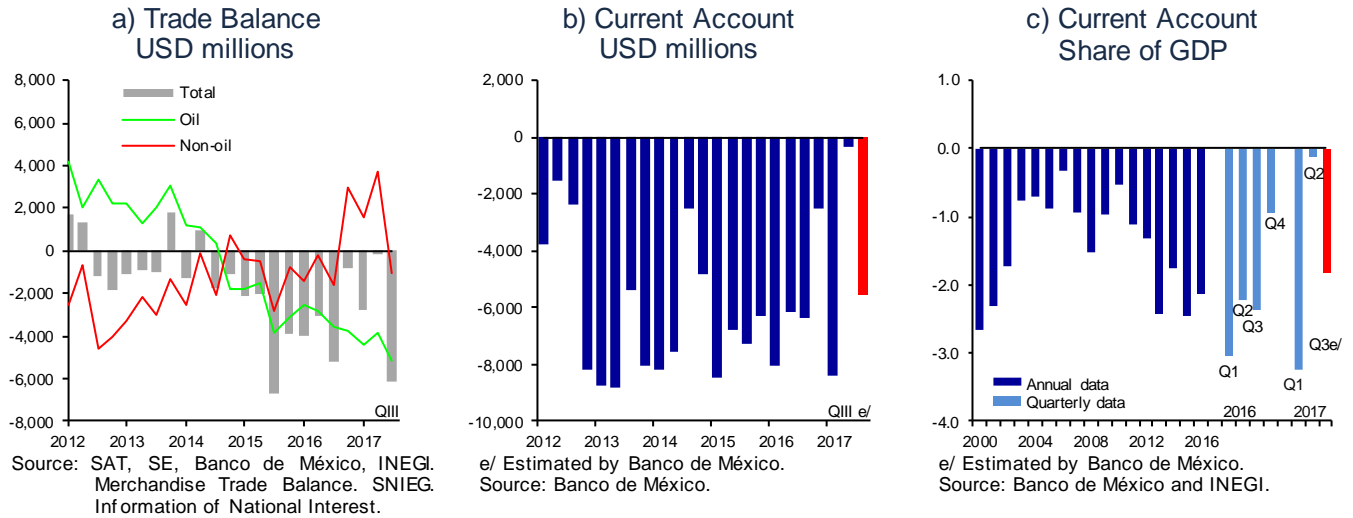
3.2.2.   Labor Market

Labor market conditions have been tightening and it seems that there is no slack in it (Chart 135). Indeed, in the third quarter of 2017 the national unemployment rate lied at particularly low levels, and continues to show a decreasing trend. Similarly, the urban unemployment rate also remained at low levels, although it would seem to have stopped decreasing, while the labor participation rate presented a certain downward trend so far this year.[34] Meanwhile, the employed population kept growing, while the number of IMSS-affiliated jobs continued exhibiting high dynamism, even better than that suggested by the performance of economic activity, in part due to the greater formalization effort. In this context, the rate of labor informality persisted around the lowest levels for the last twelve years.[35]

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[34] In the third quarter of 2017, the national participation rate registered 59.2 percent in seasonally adjusted terms, which has been the lowest level since the first quarter of 2011. It should be noted that in recent quarters this decrease has been attributed to the greater growth rate of the working age population with respect to the growth of the Economically Active Population.

[35] Currently, both the unemployment rates and the labor informality rates are measured based on the results of the National Employment Survey (ENOE), which began to be conducted in 2005.

Chart 135
Labor Market Indicators

a) National and Urban Unemployment Rates
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
    represented by a solid line, the latter by a dotted line.
Source: National Employment Survey (ENOE), INEGI.

b) National Labor Participation Rate [1]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
    represented by a solid line, the latter by a dotted line.
1/ Percentage of Economically Active Population (EAP) with
    respect to the population of 15 years and older.
Source: National Employment Survey (ENOE), INEGI.

c) IMSS-insured Workers, Total IGAE and
Working Population
Index 2013=100, s. a.

s. a. / Seasonally adjusted data.
1/ Permanent and temporary jobs in urban areas. Seasonal
    adjustment by Banco de México.
Source: Prepared by Banco de México with data from IMSS and
    INEGI (SCNM and ENOE).

d) Informal Sector Employment [1]
and Labor Informality [2]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
    represented by a solid line, the latter by a dotted line.
1/ It refers to individuals working in non-agricultural economic
    units, operating with no accounting records and with
    households' resources.
2/ It includes workers who, besides being employed in the
    informal sector, work without social security protection, and
    whose services are used by registered economic units, and
    workers self-employed in subsistence agriculture.
Source: National Employment Survey (ENOE), INEGI.

In the reported period, the main wage indicators presented nominal growth rates
similar to those registered in the previous quarter (Chart 136). In particular, the
annual change rate of the average wage of salaried workers in the economy was

4.1 percent in the period of July – September 2017. In turn, the daily wage associated to IMSS-affiliated workers presented an annual increase of 4.9 percent, while the growth rate of contractual wages negotiated by firms under federal jurisdiction was, on average, 4.5 percent. It should be noted that the National Minimum Wage Commission (CONASAMI) announced an increase to the minimum wage 5 Mexican pesos corresponding to the Independent Recovery Amount (MIR), in addition to a 3.9 percent revision. This adjustment will be in force as of December 1, 2017.

Chart 136
Wage Indicators
Annual change in percent

a) Average Wage of Salaried Workers according to National Employment Survey [1]

b) Daily Wage of IMSS-insured Workers [2]

c) Nominal Contractual Wage [3]
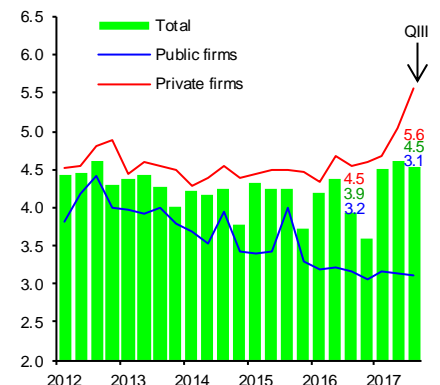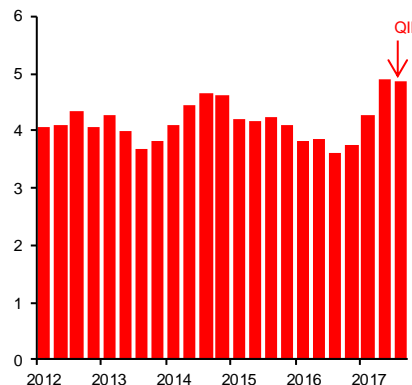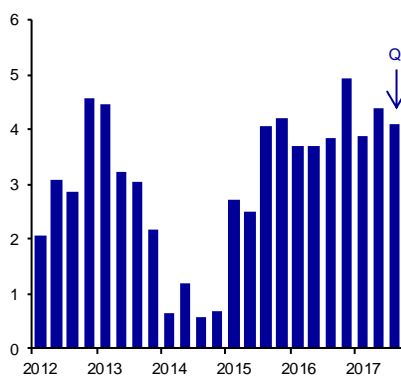
1/ To calculate average nominal wages, the bottom 1 percent and the top 1 percent in the wage distribution were excluded. Individuals with zero reported income or those who did not report it are excluded.
2/ During the third quarter of 2017, on average 19.3 million workers were registered at IMSS.
3/ The contractual wage increase is an average weighted by the number of involved workers. The number of workers in firms under federal jurisdiction that report their wage increases each year to the Secretary of Labor and Social Welfare (STPS) is approximately 2.3 million.
Source: Calculated by Banco de México with data from IMSS, STPS and INEGI (ENOE).

3.2.3. Financial Saving and Financing in Mexico [36]

In the third quarter of 2017, the sources of financial resources continued growing at low rates in real annual terms, as compared to the previous years. This occurred despite a slight rebound relative to the second quarter. In particular, its real annual change in the reference quarter was 1.1 percent, which compares to 0.6 percent in the previous one. This reflected an incipient recovery of the domestic sources, while the external ones kept declining (Chart 137a). The low growth of the sources of financial resources was offset by a lower dynamism of the uses of the said resources (Chart 137b). In this respect, the contraction of financing to the public sector is noteworthy, which derives from the Federal Government fiscal consolidation strategy. On the other hand, financing to the private sector kept expanding at relatively low rates, albeit with a certain heterogeneity among its components.

As regards domestic sources of financial resources of the economy –measured as the monetary aggregate M4 held by residents–, they grew at a real annual rate of 2.8 percent in the third quarter of 2017. This figure is relatively low when compared

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[36] En esta sección, a menos de que se indique lo contrario, las tasas de crecimiento se expresan en términos reales anuales y se calculan con base en los saldos ajustados por efectos de variaciones en el tipo de cambio y precios de los activos.

to the average observed over the last 5 years (5.5 percent), which principally reflects the impact of higher inflation on growth in real terms of the balance of financial assets. However, this growth was greater than the 1.9 percent registered in the second quarter, which was brought about by the higher dynamism in its voluntary component (Chart 138a and Chart 138b). Meanwhile, the external sources contracted by 1.5 percent in real annual terms during the reference quarter, which is compared to a reduction of 1.4 percent in the second quarter of 2017 (Chart 137a). This largely reflects the relatively weak growth in the monetary aggregate M4 held by non-residents, which mainly derives from lower holdings of Cetes by non-residents, while the holdings of medium- and long-term assets have increased (Chart 138c). In addition, the low dynamism of external sources also reflects the reduced activity that has been recently presented by the Mexican issuers in the external debt markets (Chart 139a). Despite the above, in the reference quarter some debt placements of a considerable magnitude by Mexican issuers were issued abroad, resources, which, in part, have been used to pay off other liabilities with a shorter maturity, thus improving the debt profile.

Regarding the use of financial resources of the economy, in the third quarter of 2017 the growth rate of financial resources to the public sector declined, as compared to the second quarter, as it shifted from -2.3 to -3.1 percent in real annual terms. This is attributed to the fiscal consolidation effort undertaken by the Federal Government, the greater tax revenue and the lower public expenditure with respect to the program. It should be noted that, as indicated in previous reports, the growth rate in real annual terms of financing to the public sector would decelerate, even excluding the effect of Banco de México's operational surplus in 2016 and 2017. On the other hand, the stock of international reserves kept contracting in real annual terms.[37]

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[37] The real annual change of the international reserve in Mexican pesos is obtained with the method of revalued cash flows. It consists in multiplying the absolute annual change in USD by the average exchange rate of the period; adding to this amount the initial balance of international reserves in Mexican pesos, to obtain the final adjusted balance of international reserves in Mexican pesos; deflating both balances in Mexican pesos with the CPI, and, finally, calculating the annual change. Thus, in terms of U.S. dollars, between the third quarter of 2016 and the same quarter of 2017, international reserves diminished by USD 2.8 billion. This figure expressed in Mexican pesos (using the average exchange rate in the period) equals an annual decrease of MXN 26 billion, which, complemented by the balance of MXN 3,425 billion of international reserves as of the third quarter of 2016, implies a real annual change of -7.4 percent. As a reference, the annual nominal change of international reserves in U.S. dollars was -1.6 percent.

Chart 137
Total Funding of the Mexican Economy (Sources and Uses)
Real annual change in percent [1]

a) Sources

b) Uses

p/ Preliminary data.
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variation.
2/ It includes the monetary aggregate M4 held by residents.
3/ It includes the monetary aggregate M4 held by non-residents, foreign financing for the federal government, public institutions and enterprises, commercial banks' foreign liabilities and external financing to the non-financial private sector.
4/ It is made up by currencies and gold reserves of Banco de México, free of any security rights and the availability of which is not subject to any type of restriction; the position in favor of Mexico with the IMF derived from contributions to the said entity; currency obtained from financing to realize foreign exchange regulation of the IMF and other entities of international financial cooperation or groups of central banks, of central banks and other foreign legal entities that act as financial authorities. Currencies pending to be received for sales transactions against the national currency are not considered, and Banco de México's liabilities in currency and gold are deducted, except for those that are for a term longer than 6 months at the moment of reserves' estimation, and those corresponding to financing obtained to carry out the above mentioned foreign exchange regulation. See Article 19 of Banco de México's Law.
5/ It refers to the total portfolio of financial intermediaries, of the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), and of the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste), the issuance of domestic debt and external financing. It includes restructuring programs.
6/ It includes financing to the federal public sector, as well as financing to states and municipalities.
Source: Banco de México.

Chart 138
Monetary Aggregate M4 $^{1/}$

a) Total Real annual change in percent	b) Held by Residents Real annual change in percent	c) Held by Non-residents Contribution to the real annual change in percent
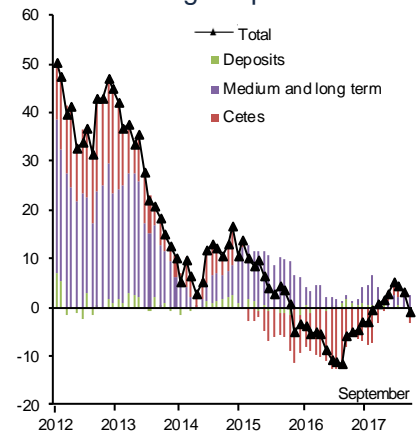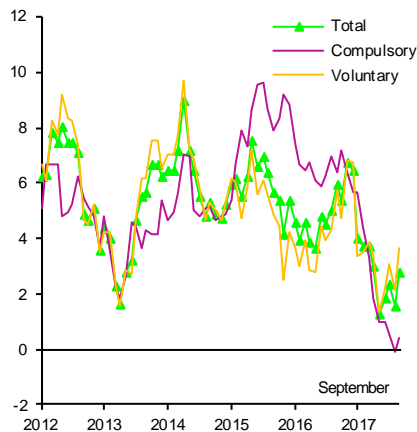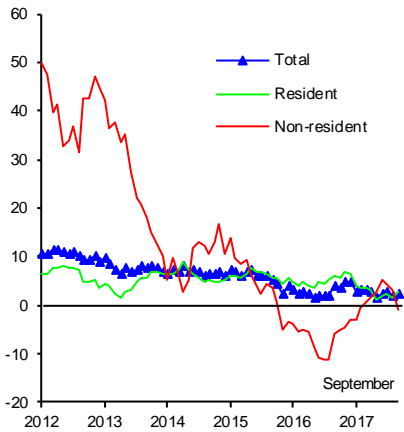
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset variations.
Source: Banco de México.

Total financing to non-financial private sector kept growing at a relatively low rate, albeit higher than in the previous quarter. In particular, between the second and the third quarters of 2017, its real annual change shifted from 1.3 to 2.3 percent (Chart 139a). To this larger rate of expansion, at the margin, contributed mainly the above mentioned issuances of external debt, which represented the largest gross placement since the third quarter of 2014. Despite that, external financing continued contracting in real annual terms for the fifth consecutive quarter. In turn, domestic financing kept decelerating, despite considerable differences across its components. In particular:

Chart 139
Financing to Non-financial Private Sector
Real annual change in percent
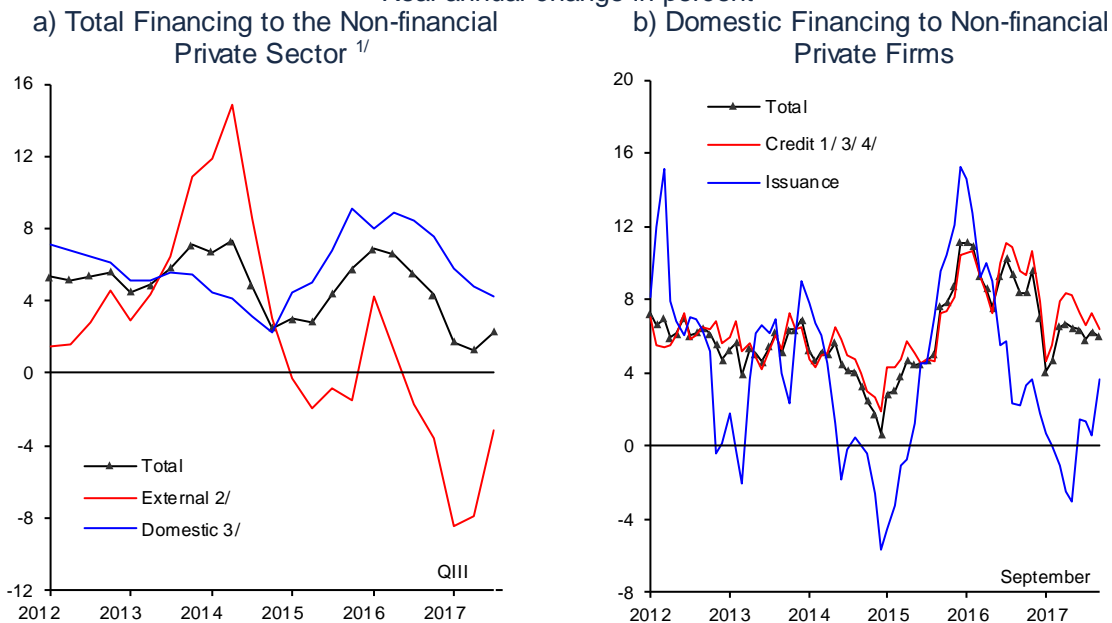
a) Total Financing to the Non-financial
Private Sector [1]

b) Domestic Financing to Non-financial
Private Firms

1/ Real annual changes are calculated based on balances adjusted due to exchange rate variations.
2/ Data of foreign financing for the third quarter of 2017 are preliminary.
3/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
4/ It refers to the performing and non-performing portfolios, and includes credit from commercial and development banks, as well as other non-bank financial intermediaries.
Source: Banco de México.

i.   Domestic financing to private firms kept expanding with dynamism. In the reference quarter its growth rate was 6.0 percent, a figure that is similar to 6.3 percent registered in the previous quarter (Chart 139b). Within it, above all an important recovery of the domestic debt market was notable, as the net placement of medium-term securities in the quarter has turned out to be the highest on record (Chart 140a). Meanwhile, commercial banks' credit to firms kept growing at relatively high rates, which contrasts with the low dynamism in the development banks' credit (Chart 140b). In this context, financing costs to firms kept increasing –reflecting the recent increments in Banco de México's target of the overnight interbank interest rate-, while the corresponding delinquency rates remained at low and stable levels (Chart 140).

Chart 140
Domestic Financing to Non-financial Private Firms

a) Net Placement of Medium-term Securities [1/]
MXN billion
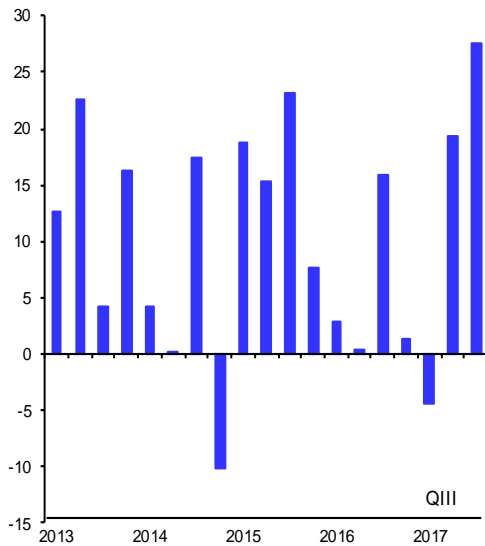
b) Performing Credit [2/]
Real annual change in percent
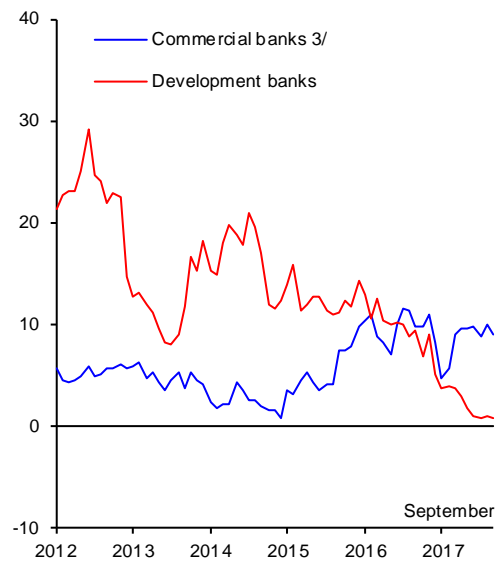
1/ Placements excluding amortizations (maturities and prepayments) in the quarter.
2/ Real annual changes are calculated based on stock adjusted due to exchange rate variations.
3/ It includes Sofomes ER subsidiaries of bank institutions and financial groups. Data are adjusted so as not to be affected by the transfer
of bridge loans.
Source: Banco de México.

Chart 141
Annual Interest Rates and Delinquency Rates of Non-financial Private Firms

a) Interest Rates of Private
Securities
Quarterly average in percent

b) Interest Rates of New Credits [3/]
Quarterly average in percent

c) Delinquency Rates
Percent

1/ Average weighted yield to maturity of issuances in circulation, with a term over 1 year, at the end of the month.
2/ Average weighted rate of private debt placements, at a term of up to 1 year, expressed in a 28-day curve. It only includes stock exchange certificates.
3/ It refers to the interest rate of new bank credits to non-financial private firms, weighted by the associated stock of the performing credit and for all credit terms
requested.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio
plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

ii.   The growth rate of credit to households continued to moderate in all its
segments. In the reported period, this portfolio expanded at a real annual

rate of 2.8 percent, below the growth of 3.5 percent in the second quarter of 2017 (Chart 142a). In the housing credit market, in particular, relatively low growth rates persisted –both in the National Housing Fund's portfolio and in the commercial bank's portfolio–, even though the decelerating trend, which had been observed since mid-2016, seems to have been interrupted (Chart 142b).[38] This occurred in a context of interest rates higher than those observed last year, and delinquency rates that have not exhibited significant changes at the margin (Chart 142c).

Chart 142
Credit to Households

a) Total Credit [1/]	b) Performing Housing Credit	c) Annual Interest Rate of New
Real annual change in percent	Real annual change in percent	Credits and Delinquency Rate of the Housing Credit
		In percent

1/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
2/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
3/ Figures are adjusted in order to avoid distortions by the transfer and the reclassification of direct credit portfolio, by the transfer from the UDIS trust portfolio to the commercial banks' balance sheet and by the reclassification of direct credit portfolio to ADES program.
4/ The interest rate of new housing credits from commercial banks, weighted by the stock associated to the performing credit. It includes credit for acquisition of new and used housing.
5/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
6/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

As regards commercial banks' consumer credit, its growth rates have observed a widespread moderation across its different segments, with the exception of credit for Acquisition of Consumer Durables, mainly constituted by auto loans, which continues growing at a relatively high rate (Chart 40a). Just like in other segments of domestic financing to the private sector, the annual interest rates of consumer credit were higher than those observed in 2016. However, in contrast to other segments of credit to the private sector, the quality of consumer credit has somewhat deteriorated, which can be perceived in higher adjusted delinquency rates due to write-offs (Chart 143b and Chart 143c).

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[38] Commercial banks' housing credit includes that for acquisition of new and used housing, remodeling, payment of mortgage liabilities, credit for liquidity, acquisition of land and construction of own housing.

Chart 143
Commercial Bank Consumer Credit
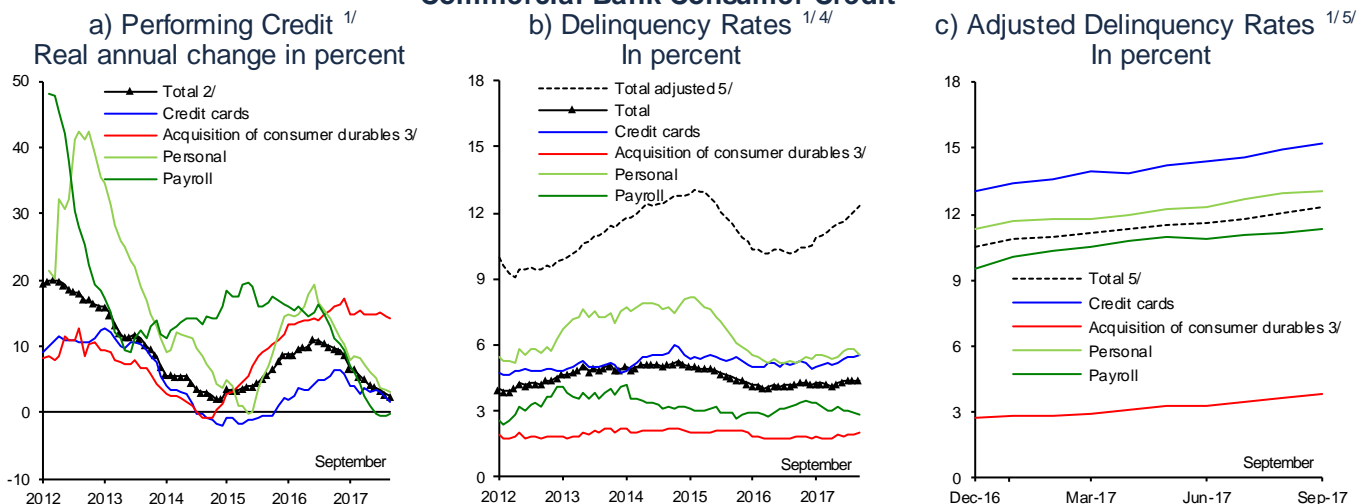
a) Performing Credit [1/]
Real annual change in percent

b) Delinquency Rates [1/ 4/]
In percent

c) Adjusted Delinquency Rates [1/ 5/]
In percent

1/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
2/ It includes credit for payable leasing operations and other consumer credits.
3/ It includes auto loans and credit for acquisition of other movable properties.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

In sum, although in 2017 the sources of financial resources kept expanding at relatively low rates in real terms, as compared to previous years, the decline in the use of financial resources by the public sector has contributed to channel resources to the private sector, although the growth rate of financing for consumption has decreased. In this context, it is relevant to conduct a prospective exercise of the sources and uses of the economy's financial resources, that would show how financing to the private sector may evolve by the end of 2017 and in 2018 (Table 5). In particular:

i. For the end of 2017, the annual flow of the sources of financial resources of the economy is estimated to attain 7.1 percent of GDP. This figure is lower than the average annual flow registered over the last five years (8.2 percent of GDP), and it reflects the expected persisting weakness of the external sources. As regards the use of financial resources, the annual flow of financing to the public sector (including both PSBR and financing to states and municipalities) is estimated to reach 1.4 percent of GDP by the end of 2017, which is significantly lower than in 2016 and on average over the last five years, of 2.9 and 4.1 percent, respectively. Thus, despite the lower sources of financial resources of the economy, the lower absorption of resources by the public sector is forecast to allow the annual flow of financing to the private sector to mark 3.6 percent of GDP in 2017, which is higher than the figure observed in 2016.

ii. For 2018, the sources of financial resources are anticipated to remain relatively low. In particular, the annual flow of GDP is estimated to be 7.3 percent. This would derive from an evolution of domestic sources similar to that observed over the previous two years –in congruence with the expected evolution of economic activity-, while the external sources would continue registering relatively low flows in view of risks of persisting episodes of high

volatility in domestic and international financial markets. As regards the use of financial resource, based on the outlook of the Ministry of Finance (SHCP) presented in General Criteria of Economic Policy 2018 and confirmed in the Economic Package approved for that year, financing to the public sector is anticipated to increase slightly from 1.4 to 2.5 percent of GDP. Considering all the above, the annual flow of financing to the private sector could reach 3.5 percent of GDP, a figure similar to that estimated for 2017.

Thus, given the possibility that by the end of 2017 and in 2018 tight financing conditions and limited external sources of financial resources persist, it is fundamental to maintain the fiscal consolidation efforts undertaken by the Federal Government, which have been recently endorsed by the Economic Package approved for 2018. This would help not only to strengthen the macroeconomic framework of the country, in particular given the described uncertainty environment, but also it would procure the continuous allocation of resources to the private sector and the mitigation of upward pressures on interest rates, even in an environment of tighter financial conditions.

Table 5
Total Funding of the Mexican Economy (Sources and Uses)
Percentage of GDP

	2012	2013	2014	2015	2016	2017e/	2018 e/
Total sources	10.0	8.6	10.3	5.1	6.9	7.1	7.3
Domestic sources	4.4	4.7	5.8	3.9	5.6	5.3	5.5
External sources	5.6	3.8	4.5	1.2	1.3	1.8	1.8
Non-resident M4	4.5	1.3	2.3	-0.2	-0.6	0.5	0.5
Securities and foreign credit [1]	1.1	2.5	2.2	1.4	1.9	1.4	1.3
Total uses	10.0	8.6	10.3	5.1	6.9	7.1	7.3
International reserves [2]	1.8	1.0	1.3	-1.5	0.0	-0.3	-0.1
Public sector financing [3]	4.2	4.1	4.8	4.2	2.9	1.4	2.5
Federal public	3.8	3.7	4.6	4.1	2.8	1.4	2.5
States and municipalities	0.5	0.4	0.2	0.2	0.1	0.0	0.0
Private sector financing	3.1	3.9	2.5	2.9	2.8	3.6	3.5
Households	1.4	1.1	1.1	1.3	1.5	1.3	1.4
Businesses	1.7	2.9	1.5	1.6	1.3	2.3	2.0
Other [4]	0.9	-0.5	1.7	-0.6	1.1	2.3	1.5

Note: Figures may not add up due to rounding. Figures expressed in percent of the nominal average annual GDP. The information on (revalued) flows is stripped form the effect of the exchange rate fluctuation.
e/ Estimated data, expressed in percent of nominal average annual GDP estimated by Banco de México.
1/ It includes the external debt of the federal government, public entities and firms, and external PIDIREGAS, external liabilities from commercial banks and financing to the non-financial private sector.
2/ As defined by Banco de México's Law.
3/ From 2010 to 2016, Public Sector Borrowing Requirements (PSBR) correspond to the data released by the Ministry of Finance (SHCP). The data of 2017 and 2018 correspond to those published in the GCEP of the respective years and considers the impact of the use of Banco de México's operational surplus in 2017.
4/ It includes capital accounts, and results and other assets and liabilities of commercial and development banks, non-bank financial intermediaries, of the National Housing Fund (Infonavit) and Banco de México –including the securities issued by this Central Institute for the purposes of monetary regulation, especially those related to neutralizing the monetary impact by the operational surplus–. Similarly, it includes non-monetary liabilities from the Institute for the Protection of Bank Savings (IPAB), as well as the effect of the change in the valuation of public debt instruments, among other concepts.
Source: Banco de México.

4.   Monetary Policy and Inflation Determinants

Banco de México has acted in a timely and preemptive manner, implementing the conducive measures so that the adjustments in the relative prices, which derived from the different shocks that the Mexican economy has faced since mid-2014, take place in an orderly manner, preventing the second round effects on the price formation process in the economy, and thus maintaining medium- and long-term inflation expectations anchored. Thus, from December 2015 to June 2017, the Central Institute increased its Overnight Interbank Interest Rate by 400 basis points, from 3 to 7 percent (Chart 144a). During the decision-making process, the Board of Governors of this Central Bank has considered that monetary policy measures affect the inflation performance with a certain lag, through different transmission channels, which have been fully operational during this year. In this sense, in part as a result of the monetary policy actions, after a significant depreciation during 2016 and in early 2017, in view of a number of volatility episodes across the financial markets, the exchange rate appreciated considerably by the middle of this quarter. This was accompanied by the anchoring of inflation expectations and the lower growth of financing, factors that indicate that both the channel of inflation expectations and the channel of credit have been in operation.

In accordance with the above, since its decision of June Banco de México's Board of Governors has emphasized that considering the transitory nature of the shocks that had affected inflation, the currently available information, the time horizon in which the monetary policy transmission channels fully operate, as well as the outlook for the economy, the level achieved by the reference rate is congruent with the efficient process of inflation convergence to its 3.0 percent target (see Box 7). In this respect, it is considered that the balance of risks relative to the inflation trajectory expected by this Central Institute has deteriorated and presents an upward bias. Meanwhile, as previously expected, headline and core inflation seem to have already attained their maximum levels in annual terms and have presented a change of trend. In line with this performance, at the end of 2017 inflation expectations have recently stopped increasing, while those corresponding to the end of 2018 remained stable around 3.8 percent, a level that is considerably lower than in 2017, which is congruent with a temporary inflation increment. Meanwhile, medium- and long-term inflation expectations have remained anchored at 3.5 percent.

As regards the period covered by this Report, in the meetings of August, September and November 2017, the Board of Governors decided to maintain its Overnight Interbank Interest Rate unchanged at 7 percent. However, in view of the persisting risks, it will be vigilant to ensure that a prudent monetary stance is maintained, so that the anchoring of medium- and long-term inflation expectations prevails, and its convergence to its target is achieved.

Box 7
Impact of Monetary Policy Adjustments on Inflation from 2015 to Date

1. Introduction

The Political Constitution of the United Mexican States establishes procuring the stability of the purchasing power of the national currency as its primary objective. To accomplish this goal, in 2001 the Central Institute adopted the Inflation Targeting Regime, as a framework for its monetary policy conduct. In the framework of this regime –characterized by setting a quantitative inflation target and by laying the emphasis on a better transparency and communication with the public, among other elements-, the Central Bank thoroughly evaluates the economic juncture, analyzing all sources of inflation pressures, in order to take the necessary actions so the future inflation trajectory is congruent with the set target. To do so, it considers that its actions affect the price formation process of the economy through different channels, known, as a total, as the monetary policy transmission mechanism. It should be stressed that the functioning of these channels implies that the monetary policy actions generally affect the observed inflation with a certain lag.[1]

In this context, and in an environment in which the monetary policy actions are effective and credible, it could be expected that, in view of the negative shocks that affect the relative prices, shorter-term inflation expectations would increase as a consequence of the immediate impact of the said shocks on the measured inflation, while medium- and long-term ones would remain stable, reflecting the temporary nature of this inflation increment and its eventual convergence to its target. In this sense, since December 2015 so far Banco de México has adjusted its monetary stance and increased its Overnight Interbank Interest Rate by 400 basis points, from 3 to 7 percent, so that the adjustments in the relative prices derived from the shocks that had affected the national economy since mid-2014 would be orderly, thus preventing second-round effects on the price formation process of the economy. Indeed, as a result of these actions, medium- and long-term inflation expectations have persisted stable and, in congruence with that, inflation is expected to have recently attained its maximum level and to have started its downward trend, which is estimated to continue by the end of the year and to become more pronounced during the next one, leading to the convergence of inflation to its 3 percent target by the end of 2018.

So as to illustrate the possible negative effects generated by the passive monetary policy over the last years, this box presents two counterfactual macroeconomic scenarios, where it lays out what the inflation evolution would have been from 2016 to date, as well as its forecast trajectory, in the presence of a series of shocks that affected the Mexican economy, but in the absence of a prudent and active monetary policy. In accordance with the results, if the said adjustments had not been carried out, inflation could have presented deviations from its target, that would have been greater than those that were registered *de facto*, and the convergence of inflation to its target would have been delayed considerably, which would have jeopardized the anchoring of inflation expectations.

2. Counterfactual Exercises in view of Recent Shocks

Over the last years, the Mexican economy faced a number of shocks that affected inflation. According to the order in which they were arising, they can be grouped into two periods:

First period of shocks (from 2014Q3 to 2016Q3). In the second half of 2014 and during 2015, a considerable decrease in crude oil prices was observed, which remained at low levels during 2016. This implied an important deterioration in the terms of trade in the country and a vulnerability for public finances. This shock, along with the expectations of the U.S. monetary policy normalization process –in an environment of the divergence in the monetary policy stance expectation in the main advanced economies-, and a number of events that marked the evolution of the U.S. electoral process, led to different volatility episodes in international financial markets, which, in turn, generated a considerable depreciation of the national currency and an increase in its volatility. As a result, in 2015 an important adjustment in the relative prices of the Mexican economy has started, the effect of which, albeit offset during that year both by the fading of the effects of the 2014 fiscal adjustments on prices and by lower telecom services' and some energy products' prices, started to translate in a gradual upward trajectory of core inflation in 2016.

Second period of shocks (from 2016Q4 to 2017Q3). At the end of 2016 and in early 2017, in view of the uncertainty over the impact of the economic policy undertaken by the incoming U.S. administration in its trade, and migratory relation with Mexico, an additional considerable depreciation of the national currency was registered, and its volatility increased. In addition, during the same period of time, considerable supply shocks were observed,

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[1] For a description of the channels of the monetary policy transmission mechanism in Mexico and the recent changes in the relative importance of each of them, see Box "Recent Changes in the

Transmission Mechanism of Monetary Policy in Mexico" in the Quarterly Report January – March 2016.

among which the following should be listed: in January, the rise in the minimum wage and an increase in energy prices, as a result of the liberalization process, above all the one corresponding to gasolines and LP gas. Subsequently, the abovedescribed shocks were accompanied by the rebound in some agricultural products' prices and government approved fares, in particular, in public transport fares. As a result, in light of a significant impact of some of these shocks on certain segments of inflation and the indirect effects of higher energy prices on some segments of core inflation, headline inflation observed an important deterioration, maintained an upward trend for 14 consecutive months and marked 6.66 percent last August.

The goal of the exercises presented below is to estimate the effects of the monetary policy decisions adopted by the Board of Governors from December 2015 and until the third quarter of 2017, in view of the negative shocks specified above. To do so, we use a small-scale macroeconomic model for a small and open economy –as is the case of Mexico-, through which it is possible to characterize the functioning of the economy in a framework of a general equilibrium, in which it is possible to study the interaction among the main macroeconomic variables in response to different types of shocks and to capture the effects of the monetary policy decisions on them.[2] In particular, two counterfactual exercises are carried out so their effects of inflation are compared with the observed inflation trajectory and with the current Banco de México forecast scenario for such variable:

a) Counterfactual Exercise 1. It assumes that the monetary authority does not respond to any of the shocks that affected the economy since the mid-2014. Thus, the monetary policy rate remains unchanged at 3.00 percent from the last quarter of 2015 to date (Chart 1).

b) Counterfactual Exercise 2. It assumes that the monetary authority responds to the shocks that affected the Mexican economy until 2016Q3, that is, it responds to the first episode of the described shocks, but not to the subsequent shocks. Thus, the reference rate remains at 4.75 percent as of 2016Q4 (Chart 1).

Chart 1
Nominal Short-term Interest Rate
Percent
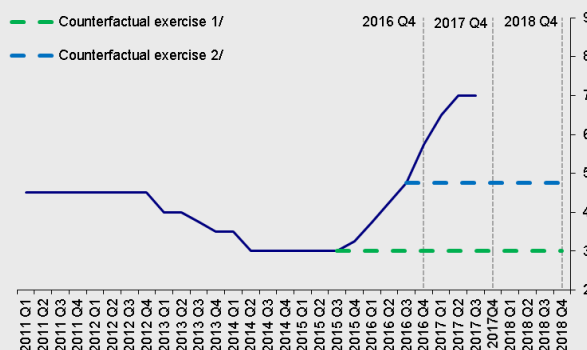
The effects of assuming a passive monetary policy in line with the above described counterfactual exercises can be appreciated in Chart 2. If the reference rate had been maintained at 3 percent from the end of 2015 to date (Counterfactual Exercise 1), headline inflation would have presented a more pronounced upward trend starting from 2016 and during 2017. In particular, for 2016Q4 this variable would have lied 100 basis points above the registered level, while for 2017Q3 it would have been 280 basis points above the latter. Moreover, inflation still would not have attained its maximum point, as in this case it would have done some in 2017Q4, attaining levels of 9.4 percent and it would have been expected that during 2018 it would register a downward trend that would be far slower than currently estimated, and would mark 6.4 percent in 2018Q4 (that is, around 340 basis points above the current outlook).

Meanwhile, if the Counterfactual Exercise 2 had occurred, headline inflation would have remained at levels similar to those observed in early 2017, and would later continue with a more pronounced upward trend in 2017Q3, and would be 130 basis points above the observed inflation during that period, that is, around 7.8 percent in annual terms. Just like in the Counterfactual Exercise 1, inflation would have attained its maximum level in 2017Q4. The expected downward trend in inflation during 2018 would have been more pronounced, the reason why it would be expected to lie at 4.3 percent in 2018Q4 (that is, around 122 basis points above the level that is currently estimated).

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[2]   The used model is similar in structure to that described in Box "Recent Changes in the Transmission Mechanism of Monetary Policy in Mexico" in the Quarterly Report January – March 2016. In particular, it contains the following equations: i) an IS Curve that models the evolution of the output gap; ii) a Phillips Curve that describes the dynamics of core inflation; iii) an equation that specifies the dynamics of the real exchange rate based on the interest rate parity; iv) a monetary policy rule; and v) equations that determine the evolution of non-core inflation and of the main U.S. macroeconomic variables (the output gap, inflation and the interest rate), which are modeled exogenously as an autoregressive process of order 1 and an autoregressive vector of order 2, respectively. For a detailed explanation of the functioning of this mechanism of the monetary policy transmission in Mexico and of the reaction of the main macroeconomic variables to different shocks, as well as the response of the reference rate required to stabilize the economy in view of the shocks, see the Monetary Program 2013.

Chart 2
Headline Inflation
Percent
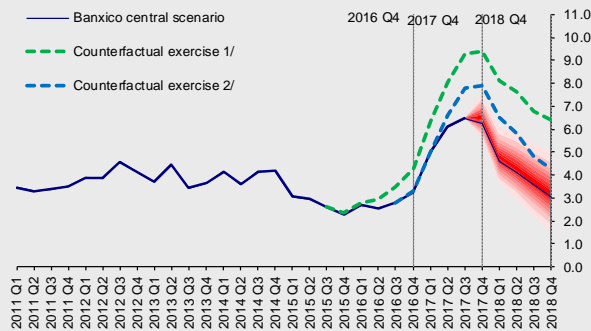
The increment of inflation to levels above those that had been previously registered, and the outlook that it would have continued growing during 2017Q4 to subsequently present a downward trend during 2018 estimated in the Counterfactual Exercises derive from a number of factors. In the absence of the timely increments in the reference rate by the monetary authority, the real rate prevailing in the economy would have been lower than the observed one, implying an even greater monetary stimulus than the one that prevailed in the economy during 2015. This would have brought about a further considerable depreciation of the exchange rate, which, on the one hand, along with a lower real interest rate, would have implied a greater stimulus to aggregate demand, and, on the other hand, higher costs of certain production inputs. Both factors would have led to greater inflation pressures, which would have raised inflation to levels above those which were entailed by the mentioned shocks.

3. Conclusion

The results of the counterfactual exercises presented in this box suggest that, derived from the timely adjustment in the monetary policy stance that has been implemented by Banco de México since the end of 2015 and up to date, the inflation increment was lower than it would have been in the absence of the said adjustments and that, therefore, a faster convergence to its target is stipulated at the end of 2018. Thus, it is possible to argue that monetary policy actions have contributed to the anchoring of inflation expectations and prevented the contamination of the price formation process of the economy.

However, it is important to stress that the interpretation of the results presented hereby should be taken with caution, as the type of the models from which they derive assumes that economic agents make decisions based on rational expectations. This implies, in the case of counterfactual exercises, that although monetary policy actions that have been registered deviate from the stance that would be congruent with the inflation convergence to its target, this deviation is perceived as transitory, and it is anticipated that, eventually, the monetary authority will act in such a way that would ensure the inflation convergence. Therefore, they do not consider either the risk related to the loss of credibility of the central bank, or the situations in which there is not an anchoring of inflation expectations, in the cases when it does not act in a timely manner. Thus, the results should be considered as conservative, as they present a lower limit of the trajectory that would be exhibited by inflation in each case.

It should be noted that the adjustments in the reference rate implemented by this Central Institute since late 2015 were carried out starting from a historic minimum of 3 percent. In this sense, interest rates have increased and have reached a real ex ante level above 3 percent, which is above the middle point, but within the estimated range for its long-term neutral level (Chart 144b).[39]

Chart 144
Target for the Overnight Interbank Interest Rate, Headline Inflation and Real Ex ante Rate
Annual percent

a) Target for the Overnight Interbank Interest Rate and Headline Inflation [1/]

b) Real Ex ante Short-term Rate and Estimated Ranges for Real Neutral Short-term Rate in the Short and Long Terms [1/]
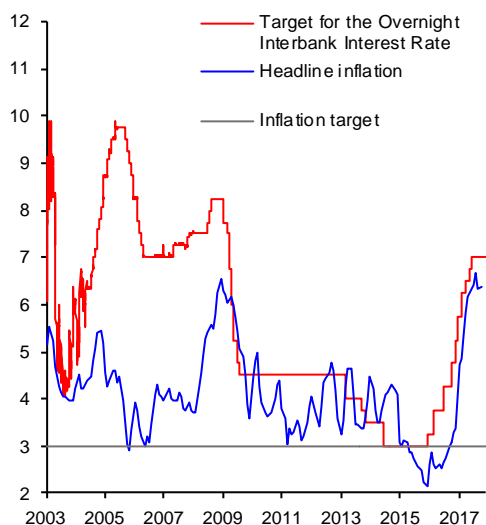
1/ The Overnight Interbank Interest Rate is shown until January 20, 2008. The latest inflation figure corresponds to October.
Source: Banco de México.
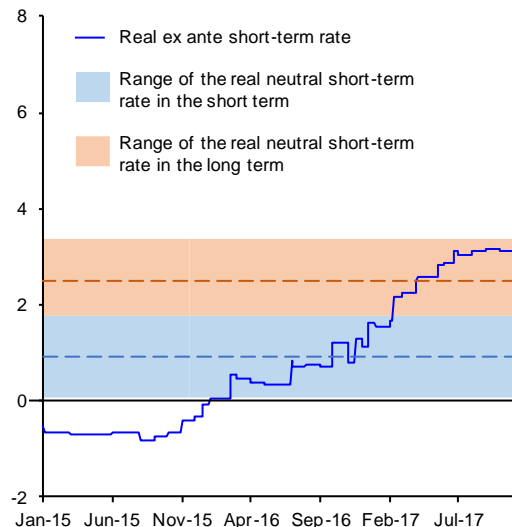
1/ Real ex ante short-term rate is calculated as the difference between the Overnight Interbank Interest rate and the median of inflation expectations for the next 12 months, derived from Banco de México's Survey. The dotted lines correspond to mid-points of the respective ranges.
Source: Banco de México.

Among the elements considered to justify the monetary policy decisions made in the reference period, the following stood out:

i.   Headline inflation lies considerably above Banco de México's upper limit, in view of the magnitude and simultaneity of the different shocks that have affected it. However, it seems to have already achieved its maximum level and to have begun its downward trend. Despite some prevailing risks in this respect, inflation is expected to continue its downward trend at the end of this year, and the said trend is anticipated to become more pronounced in 2018, leading to its convergence to the 3.0 percent target by the end of 2018.

ii.   Inflation expectations continue reflecting a temporary inflation increase. Although the median of inflation expectations based on surveys conducted by Banco de México for the end of 2017 has been adjusted upwards during the year, recently no changes have been observed. In addition, the one corresponding to the end of 2018 has persisted at 3.8 percent, while that for

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[39] For a description of the estimation of the short-term neutral interest rate, see Box "Considerations on the Evolution of the Neutral Interest Rate in Mexico", in the Quarterly Report, July - September 2016.

longer terms remains stable around 3.5 percent. It is estimated that so far the sequence of shocks that affected inflation has not generated second round effects on the price-setting process, reflecting the monetary policy actions implemented so far.

iii.   Based on the new information of the economic activity as a result of the change of the base year to 2013 in the SCNM, the estimate of the output gap suggests that it has been slightly positive for some quarters until the second one of the current year, although it has not been statistically different from zero. The contraction in economic activity in the third quarter implied that the output gap estimation decreased and is again at negative levels close to zero (Chart 145). Meanwhile, labor market conditions have been tightening, so that no slack seems to be present in that market. However, so far no significant wage-related pressures, which could affect the inflation process are perceived. In particular, the gap between the observed unemployment rate and the one estimated to be congruent with an environment of low and stable inflation is negative and significantly different from zero, although the extended measure of this gap, which includes informal salaried workers is not significantly different from zero (Chart 146a and Chart 146b). In this context, the absence of significant pressures on real average earnings and the performance of labor productivity during the reference period caused unit labor costs in the economy as a whole to diminish. Meanwhile, those corresponding to the manufacturing sector have stabilized, although at higher levels than the ones registered in 2014 (Chart 147a and Chart 147b).

iv.   The monetary policy normalization process of the U.S. Federal Reserve is still expected to remain gradual, in a context in which the Open Market Federal Committee started the reduction of its balance sheet in October.

Chart 145
Output Gap Estimate [1]
Percentage of potential output, s. a.
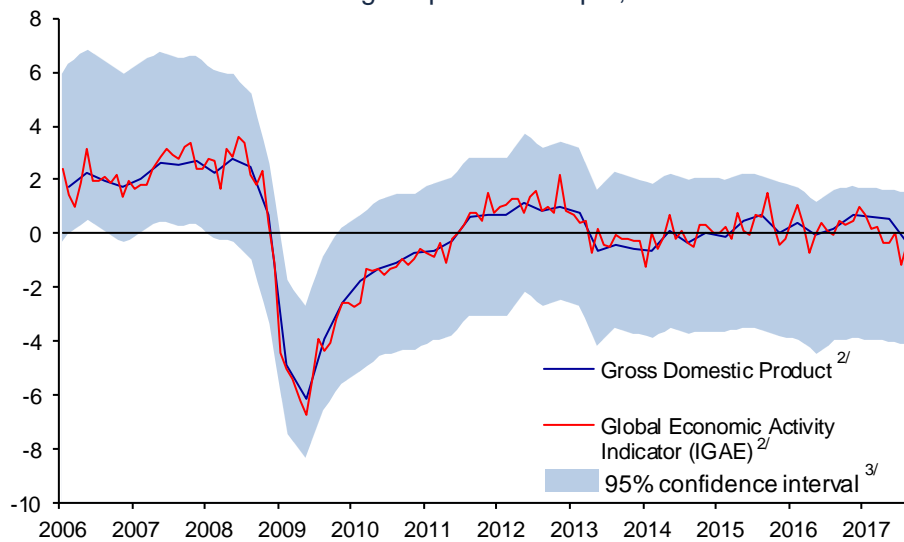
Gross Domestic Product [2]

Global Economic Activity
Indicator (IGAE) [2]

95% confidence interval [3]

s. a. / Estimated with seasonally adjusted data.
1/ Estimated using the Hodrick-Prescott (HP) filter with tail correction; see Banco de México Inflation Report, April-
   June 2009, p.69.
2/ GDP figures as of the third quarter of 2017 correspond to the timely estimate published by INEGI; IGAE figures
   of September 2017 correspond to the data implicit for that month, which is congruent with the data of timely GDP.
3/ Confidence interval of the output gap calculated with an unobserved components' method.
Source: Estimated by Banco de México with data from INEGI.

Chart 146
Estimate of the Unemployment Gap
Percent, s. a.

a) Unemployment Rate [1]

b) Unemployment Rate and Informal Wage
Workers [1]
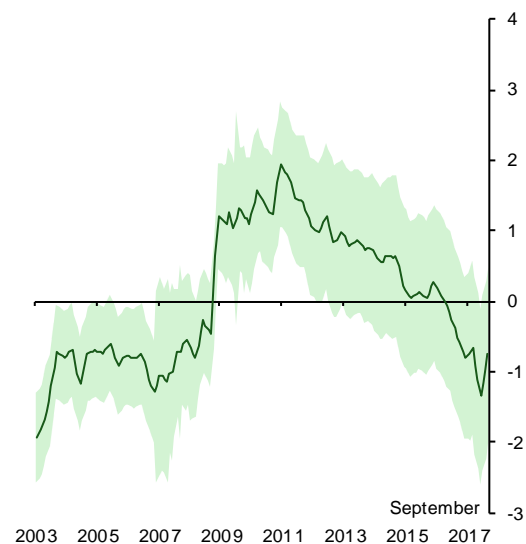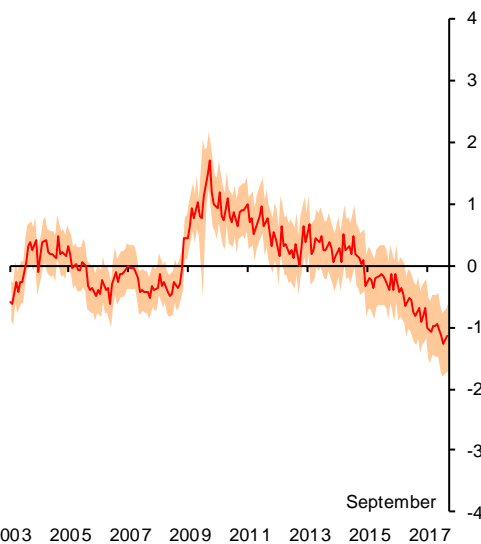
s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval
   corresponds to two average standard deviations among all
   estimates.
Source: Banco de México.

s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval
   corresponds to two average standard deviations among all
   estimates.
Source: Banco de México.

Chart 147
Productivity and Unit Labor Cost
Index 2008=100, s. a.
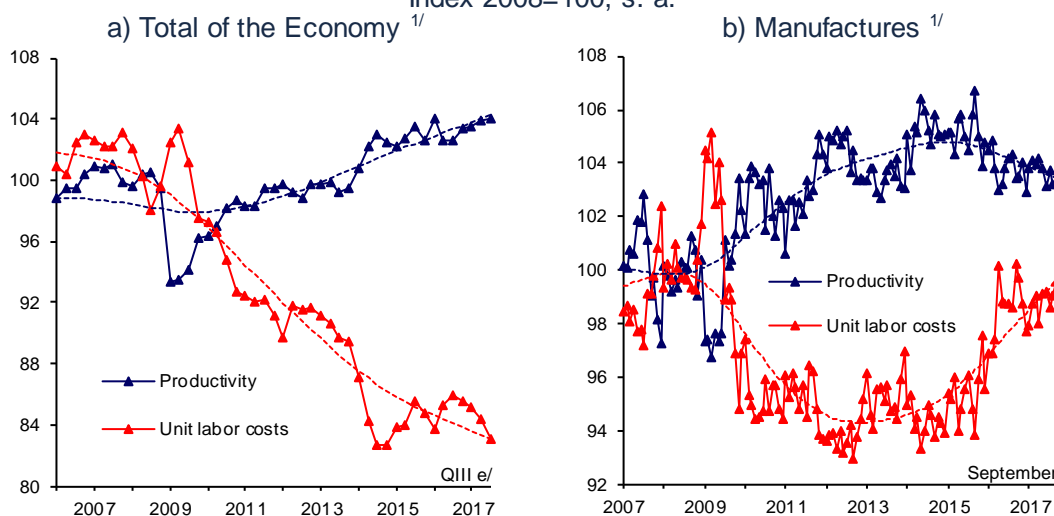
a) Total of the Economy [1/]   b) Manufactures [1/]

s. a. / Seasonally adjusted and trend series. The former is
    represented with a solid line, the latter, with a dotted line.
e/ The figure of the third quarter of 2017 is Banco de México's
    estimate based on the timely GDP data published by INEGI.
1/ Labor productivity based on hours worked. 2013 base series of
    the Mexico's System of National Accounts.
Source: Prepared by Banco de México with data from INEGI.

s. a. / Seasonally adjusted and trend series. The former is
    represented with a solid line, the latter, with a dotted line.
1/ Labor productivity based on hours worked.
Source: Prepared by Banco de México with seasonally adjusted
    data from the Monthly Manufacturing Business Survey
    and the Monthly Indicator of Industrial Activity of the
    Mexico's System of National Accounts. 2013 base
    series, INEGI.

Delving in the performance of inflation expectations based on Banco de México's survey among private sector specialists, it is notable that their medians for shorter terms have stabilized, reason why they are still congruent with a transitory inflation rise. In particular, it stands out that between June and October 2017:

i.   The median of headline inflation expectations for the end of 2017 increased from 6.00 to 6.24 percent between June and October, although it is noteworthy that between August and October it remained unchanged (Chart 148a).[40] In turn, the median of the core component was adjusted downwards from 4.90 to 4.74 percent, while the implicit expectation for the non-core component was revised upwards from 9.75 to 11.36 percent between June and October.

ii.   The median of expectations for the end of 2018 remained around 3.80 percent between the referred surveys.[41] In turn, the core component has increased slightly from 3.63 to 3.67 percent over the same period, while the implicit expectation for the non-core component has been adjusted downwards from 4.37 to 4.27 percent (Chart 148b).

iii.   Longer-term expectations remained anchored around 3.5 percent (Chart 148c). [42]

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[40] The median for headline inflation expectations for the end of 2017, based on the Citibanamex survey, went up from 5.9 to 6.34 percent between the surveys of June 20, 2017 and November 21, 2017.

[41] The median of headline inflation expectation for the end of 2018, based on the Citibanamex survey, remained stable at 3.8 percent between the surveys of June 20, 2017 and November 21, 2017.

[42] Regarding the median of long-term inflation expectations, based on the Citibanamex survey (for the next 3-8 years), it maintained at 3.5 percent between the surveys of June 20, 2017 and November 21, 2017.

Chart 148
Inflation Expectations
Percent

a) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2017
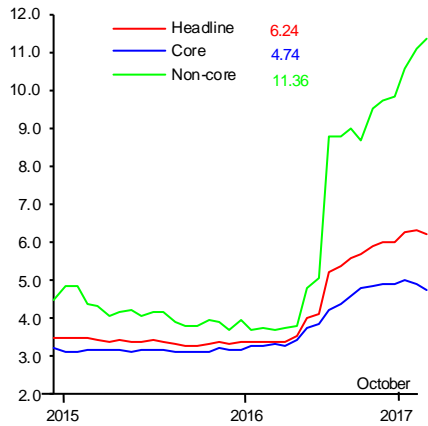
b) Medians of Headline, Core and Non-core Inflation Expectations as of End of 2018

c) Medians of Headline Inflation Expectations for Different Terms
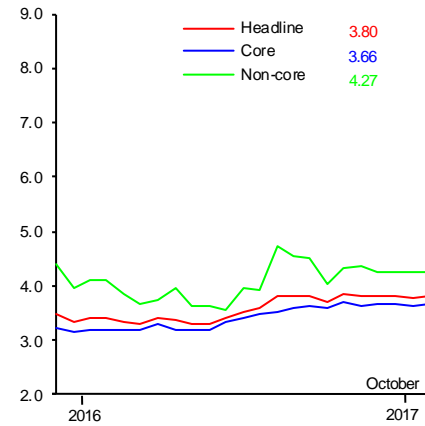
Source: Banco de México's Survey.

Source: Banco de México's Survey.
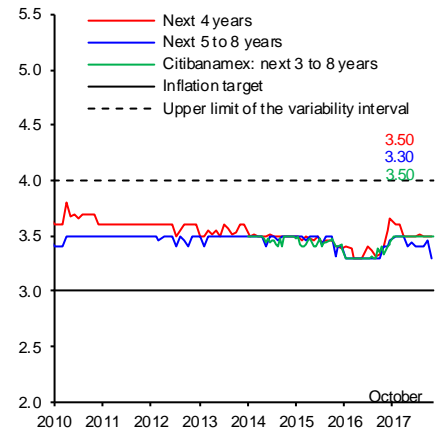
Source: Banco de México's Survey and Citibanamex Survey.

As regards the break-even inflation (the difference between long-term nominal and real interest rates), despite a moderation throughout most of the reference period, it increased from 3.65 to 3.70 percent between June and October (Chart 149a). As regards its components, it stands out that, on the one hand, long-term inflation expectations implicit in market instruments (taken from government instruments with maturities of 10 years) somewhat increased from 3.41 percent in June to 3.48 percent in October. This principally derived from an upward adjustment in shorter-term inflation expectations, as it is shown by the average of the first 1-5 years, at 3.75 percent. This is in contrast with the average of the next 6-10 years, which lies at 3.21 percent (Chart 149b). Meanwhile, the estimate of the 10-year inflation risk premium declined from 24 to 21 basis points between June and October 2017 (Chart 149c).[43]

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[43] For a description of the estimation of long-term inflation expectations, see Box "Decomposition of the Break-even Inflation" in the Quarterly Report October – December 2013.

Chart 149
Inflation Expectations
Percent

a) Break-even Inflation and Inflation Risk Implicit in Bonds

Source: Estimated by Banco de México with data from Valmer and Bloomberg.

b) Annual Inflation Expectations Implicit in Market Instruments [1]

1/ The inflation expectation is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

c) 10-year Inflation Risk Premium [1]

1/ The inflation risk premium is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

The Mexican peso has performed favorably over the bigger part of the quarter, in line with the stability perceived in international financial markets. However, as of the end of September, the national currency was affected by a number of factors which increased its volatility, depreciated the Mexican peso against the U.S. dollar, and caused the operating conditions in its market to deteriorate slightly. Among the said factors, the following can be listed: i) the process of the U.S. monetary policy normalization; ii) the potential approval of an expansionary fiscal policy in the U.S.; and iii) especially, the uncertainty related to the progress in the NAFTA renegotiation. Thus, the price of the national currency, which oscillated between MXN/USD 17.50 and 18.00 over the greater part of the quarter, subsequently reached an intraday level of MXN/USD 19.37 and in mid-November lied around MXN/USD 18.82 (Chart 150a and Chart 150b). Meanwhile, the expected price of the national currency for the end of 2017 and 2018, based on the surveys, decreased during the reported period and was later adjusted upwards in October (Chart 150a).

In light of an episode of higher volatility over the last weeks, on October 25 the Foreign Exchange Commission announced an increment of USD 4 billion in non-deliverable forwards in the national currency. At the same time, the aforementioned Commission ratified its commitment to continue evaluating the operating conditions in the foreign exchange market and did not rule out the possibility of taking further actions, if necessary, to procure a more orderly functioning in the said market. Similarly, it reiterated that the anchoring of the national currency will continue to be mainly procured by preserving solid economic fundamentals.

Chart 150
Exchange Rate and Implied Volatility
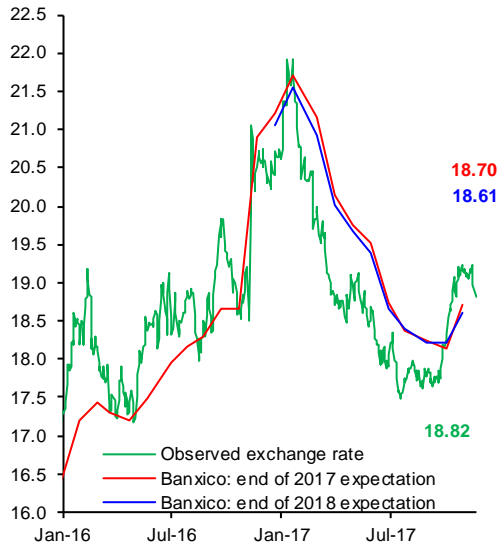
a) Nominal Exchange Rate [1/]
MXN/USD

b) Implied Volatility in FX Options [1/]
Percent
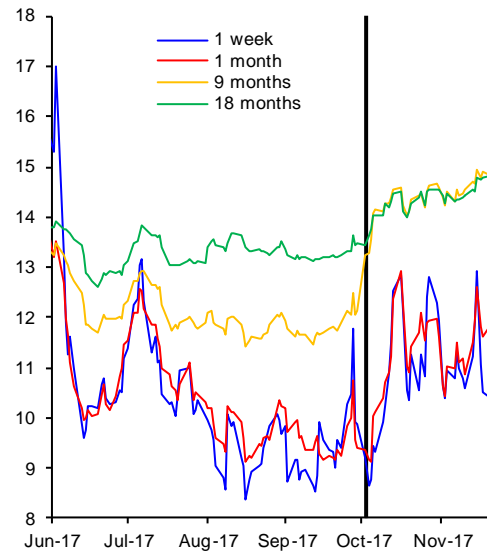
Interest rates for all terms increased. In particular, short-term ones rose moderately, while longer-term ones, especially 2 year and over, registered more considerable increments. In this sense, between the end of June and mid-November 2017, the 3-month interest rate went up by 5 basis points, from 7.05 to 7.1 percent, the 2-year interest rate increased by 50 basis points, from 6.6 to 7.1 percent, and the 10-year interest rate went up by 60 basis points, from 6.7 to 7.3 percent (Chart 151a and Chart 151b). Derived from the above, the slope of the yield curve (measured as the difference between 10-year and 3-month rates) steepened somewhat, by around 55 basis points, in the same time horizon, which would have been even higher in the absence of the monetary policy actions that have been implemented by Banco de México (Chart 151c).

Chart 151
Interest Rates in Mexico
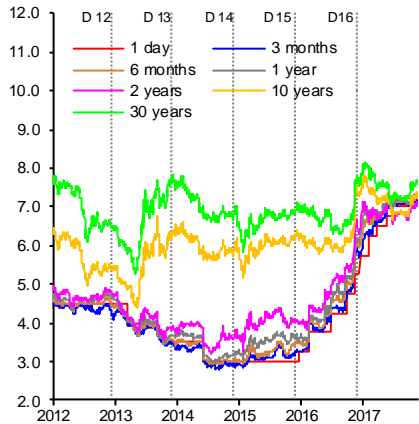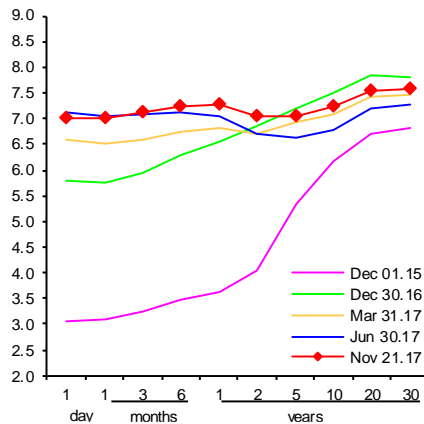
a) Government Bond Interest Rates
Percent

b) Yield Curve
Percent

c) Slope of the Yield Curve
Basis points
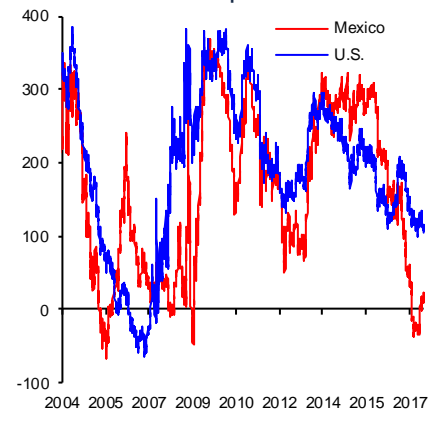
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

Consistent with the above performance, and given that short-term interest rates in the U.S. grew more than the domestic ones, the respective spreads between Mexico and the U.S. declined. In turn, medium- and long-term interest rate spreads expanded in view of the increase of a lower magnitude in the rates for the said horizons in the U.S. with respect to Mexico. In particular, from the end of June to mid-November 2017, the spread of 3-month rates declined by 10 basis points, from 600 to 590 basis points, while 2-year and 10-year spreads went up by 10 and 40 basis points, from 530 to 540 basis points and from 450 to 490 basis points, respectively (Chart 152a and Chart 152b).

Chart 152
Spreads between Mexican and U.S. Interest Rates

a) Spreads between Mexican and U.S.
Interest Rates [1]
Percent
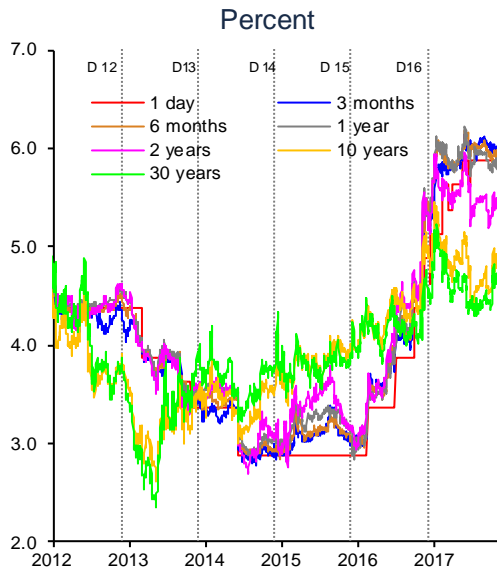
b) Curve of Spreads between Mexican
and U.S. Interest Rates
Percentage points
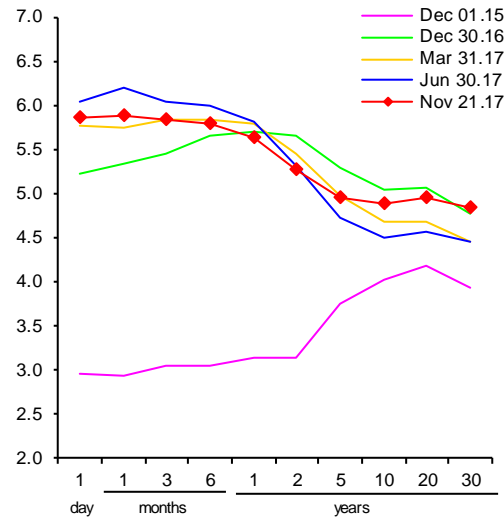
1/ For the U.S. target rate, an average interval considered by the Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

As regards the performance of domestic interest rates, it should be noted that there were few adjustments during the quarter. However, at the end of the reference period they went up, in part, due to the increments in U.S. interest rates, as well as due to a possible decompression of different risk premia, principally exchange rate, derived from the factors that affected the evolution of the national currency. In addition, this increment in the interest rates also reflects the expectations implied in the market instruments and the ones that are based on the surveys, that the period of relatively tight monetary policy could extend. In this respect, it should be noted that stable long-term interest rates, despite the uncertainty related to the bilateral Mexico – U.S. relation, derived, among other factors, from a prudent monetary policy stance and the commitment to attain the inflation target, which resulted in well-anchored medium- and long-term inflation expectations.

In the above described context, government securities held by non-residents remained relatively stable between the end of June and early November 2017. As regards its composition, it is notable that the holdings of short-term instruments diminished, which was offset by the increment in the holdings of medium- and long-term instruments (Chart 153). On the other hand, the market instruments that measure the sovereign credit risk observed certain volatility and remained practically unchanged during the reference period. This is in contrast to those in other emerging countries that declined in the same time span.

Chart 153
Residents' Holdings of Government Securities Abroad and the Exchange Rate [1]
MXN billion and MXN/USD
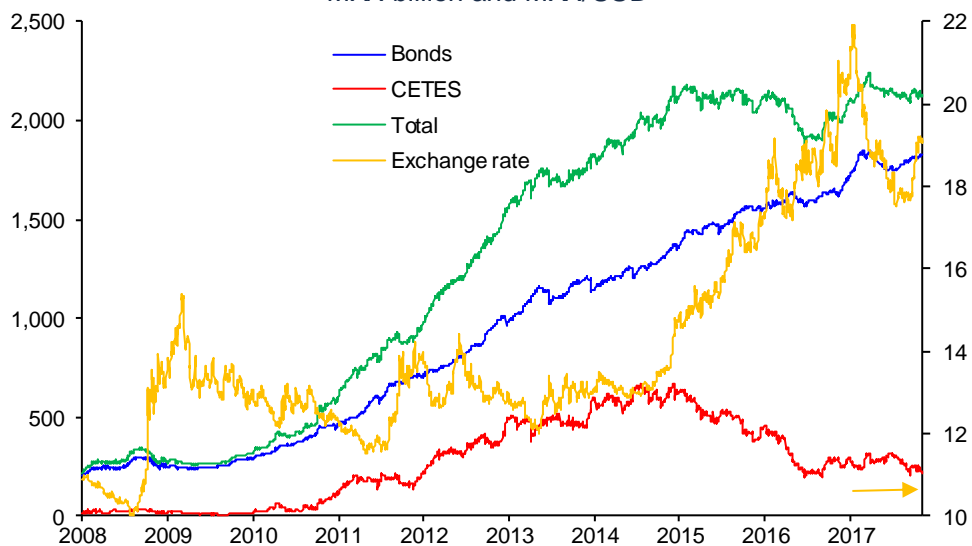
1/ The total includes CETES, bonds, udibonos, bondes and bondes D.
Source: Banco de México.

In the future, the Mexican economy will continue facing important risks. This makes it especially relevant that, on the one hand, the proper implementation of the structural reforms continues, and, on the other hand, that the authorities persevere in the strengthening of Mexico's macroeconomic fundamentals, consolidating public finances, maintaining a prudent monetary stance, and remaining vigilant to prevent the shocks on inflation and the persisting risks from affecting the price-setting process of the economy. The above will contribute to strengthen the anchoring of medium- and long-term inflation expectations and to attain the convergence to its target.

5.   Inflation Forecasts and Balance of Risks

GDP Growth Rate: The forecast interval for GDP growth for 2017 has been adjusted from one between 2.0 and 2.5 percent in the last Report to one between 1.8 and 2.3 percent in the current one. This adjustment fundamentally responds to the fact that in the third quarter productive activity decelerated more than it was anticipated in the previous Report, largely as a result of the effects of the earthquakes that occurred in September and the significant contraction in crude oil production that same month. The consequences of the earthquakes on economic activity seem to have been moderate and transitory, given that the country's productive capacity does not show signs of being considerably affected and reconstruction efforts are anticipated to intensify. In that sense, the growth forecast for 2018 remains unchanged with respect to the previous Report, and lies between 2.0 and 3.0 percent, while for 2019 an expansion rate of between 2.2 and 3.2 percent is anticipated (Chart 154a). As in the previous Report, for the forecast horizon an increasing contribution of the structural reforms to growth is expected, along with a favorable impact of the consolidation of the recovery in U.S. industrial activity, and a strengthening of the macroeconomic framework in Mexico, which would contribute to encourage domestic spending.[44] Although the outlook for GDP growth in 2018 has not been modified with respect to the last Report, it should be noted that, in particular, the uncertainty related to the NAFTA renegotiation seems to have raised the probability that important downward risks to growth are realized.

In accordance with the new information on economic activity stemming from the change of the base year to 2013, in some of the last quarters the output gap estimate has been slightly positive. Nevertheless, the contraction of economic activity in the third quarter of 2017 implied that it decreased to negative levels close to zero once again. Over the forecast horizon the output gap is estimated to persist at levels slightly below zero, although above the estimates published in the last Report, as a consequence of the data revision. In this way, the specified growth forecasts do not point to the presence of aggregate demand-related pressures onto prices (Chart 154b).

Employment: Although the new information of GDP derived from the change of base year to 2013 makes the evolution of the number of IMSS-affiliated employments, to a certain degree, more congruent with the performance of economic activity, it has continued to exhibit a greater dynamism relative to that suggested by economic growth and to what was previously anticipated. Hence, the outlook for this indicator for 2017 and 2018 is revised upwards with respect to the previous Report. In particular, for 2017, the number of IMSS-affiliated jobs is anticipated to increase to a range of between 720 and 790 thousand jobs, which is a higher range than the one estimated in the previous Report (of between 660 and 760 thousand jobs). For 2018, an increase of between 680 to 780 thousand jobs is expected, which compares to the expectation of between 670 and 770 thousand

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[44] The expectations for the U.S. industrial production in 2017 and 2018 are based on the consensus among business analysts surveyed by Blue Chip in November 2017. In particular, in 2017 and 2018 this indicator is anticipated to grow by 1.6 and 2.3 percent, respectively. These figures are compared to the forecasts in the previous Report of 1.9 and 2.4 percent for the same years. Finally, for 2019 a 2.1 percent increment is expected, in accordance with the consensus among business analysts surveyed by Blue Chip in October 2017.

employments in the previous Report. For 2019, the number of IMSS-affiliated jobs is estimated to increase to a range of 690 and 790 thousand jobs.

Current Account: For 2017, deficits in the trade balance and the current account are expected to amount to USD 11.0 and 19.4 billion (0.9 and 1.7 percent of GDP, respectively), which compare to the USD 13.2 and 25.0 billion deficits anticipated in the previous Report (1.2 and 2.2 percent of GDP, in the same order). For 2018, deficits in the trade balance and the current account are estimated to be USD 13.1 and 25.9 billion (1.0 and 2.1 percent of GDP, respectively), figures that are compared to the estimated deficits of USD 12.5 and 27.1 billion published in the previous Report (1.0 and 2.2 percent of GDP, in the same order). Meanwhile, for 2019, deficits in the trade balance and the current account are expected to be USD 14.5 and 30.6 billion, respectively (1.1 and 2.3 percent of GDP, in the same order).

Chart 154
Fan Charts: GDP Growth and Output Gap
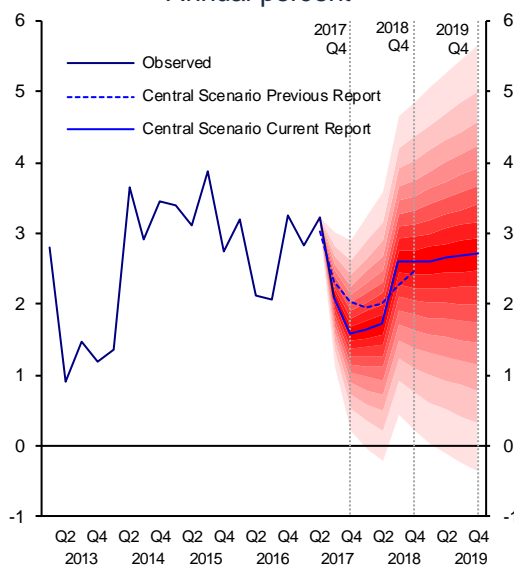
a) GDP Growth, s. a.
Annual percent

b) Output Gap Estimate, s. a.
Percentage of potential output

s. a. / Seasonally adjusted data.
Source: INEGI and Banco de México.
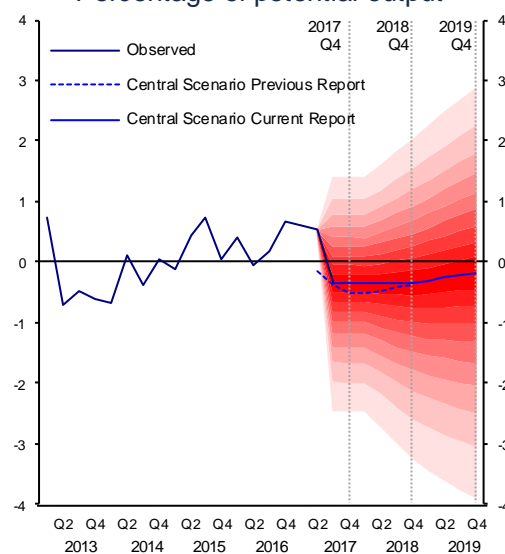
s. a. / Seasonally adjusted data.
Source: Banco de México.

The balance of risks for growth has deteriorated and is biased to the downside. Among the downward risks, the following stand out:

i.   That the NAFTA renegotiation is not favorable for the Mexican productive sector or that it even results in its cancellation.

ii.   That due to the uncertainty over the NAFTA renegotiation, different enterprises decide to postpone even more their investment plans in Mexico or that consumers lower their spending as a precautionary measure.

iii.   That episodes of high volatility in international financial markets are observed, derived from the U.S. monetary policy normalization process

or from geopolitical events that may reduce the sources of financing to Mexico.

iv.   That the upcoming electoral process in Mexico generates volatility in domestic financial markets, causing an environment of uncertainty that negatively affects the evolution of private spending.

v.   That public insecurity becomes a more relevant factor as a determinant of productive activity.

Among the upward risks, the next are noteworthy:

i.   That the renegotiation of NAFTA triggers investment in new areas of opportunity as well as in those previously considered by the Agreement.

ii.   That the implementation of the structural reforms renders greater-than-expected results.

iii.   That the reconstruction effort associated to the natural disasters in Mexico and the U.S. has a more favorable-than-estimated impact on economic activity.

Inflation: According to the forecast presented in the last Report, the current scenario considers that non-core inflation will decrease less than anticipated in the remainder of 2017 and over most of 2018. This is accounted for by recent new price increments in some agricultural goods and, in particular, in energy products. As a result, in 2018 annual headline inflation is expected to attain its 3.0 percent target in the last quarter of 2018, rather than in the third one, as it has been previously considered. As regards core inflation, according to the current scenario, for the rest of 2017 a slightly more pronounced decrease is expected as compared to the previous estimation, which is derived from a better-than-expected evolution of merchandise prices. Nonetheless, for 2018 the forecast for the core inflation performance is slightly higher than previously considered, reflecting the impact of the recent exchange rate depreciation onto merchandise prices.

Thus, it is anticipated that by the end of 2017 annual headline inflation will maintain a downward trend, which is expected to become more pronounced over the next year, leading to the convergence to its 3.0 percent target by the end of 2018. In 2019, annual headline inflation is expected to fluctuate around the said target. The previous forecast considers the expectation of an orderly performance of the exchange rate, as well as a significant decline in non-core inflation over the following months and during 2018. As regards annual core inflation, it is expected to remain above 4.0 percent in 2017, although well below the annual headline inflation trajectory, and it is also estimated to attain levels moderately above 3.0 percent in late 2018 and to lie around that level in 2019 (Chart 155 and Chart 156). It is noteworthy that although the increment in the minimum wage, which had been recently approved by CONASAMI, may affect annual headline inflation slightly upwards in 2017, it is not anticipated to strongly affect the expected trajectory of inflation convergence to Banco de México's target by the end of 2018. To achieve that, it is important for the pass-through of the rest of wage negotiations to remain controlled.

The previous estimates are subject to risks, which have increased since the release of the previous Quarterly Report. The main upward risks are:

v.   That the national currency further depreciates in response, among other factors, to an unfavorable evolution of the NAFTA renegotiation process or to a negative markets' reaction to the U.S. monetary or fiscal policy actions.

vi. That prices of some agricultural goods increase, even though their impact onto inflation would be transitory.

vii. That considerable upward pressures onto the prices of some energy products, especially LP gas, continue, as it has been recently observed.

viii. Considering that conditions in the labor market have been tightening, the evolution of unit labor costs could be reflected in inflation.

Among downward risks, these should be listed:

v.   That a more favorable environment related to the outcome of the NAFTA negotiations leads to the appreciation of the national currency.

vi. That the structural reforms contribute to further reductions in different prices of the economy.

vii. That economic activity observes a lower-than-anticipated dynamism.

Given that some upward risks have been gaining relevance, it is considered that the balance of risks related to the inflation trajectory expected by this Central Institute has deteriorated and exhibits an upward bias in the horizon in which monetary policy operates.

Chart 155
Fan Chart: Annual Headline Inflation [1/]
Percent
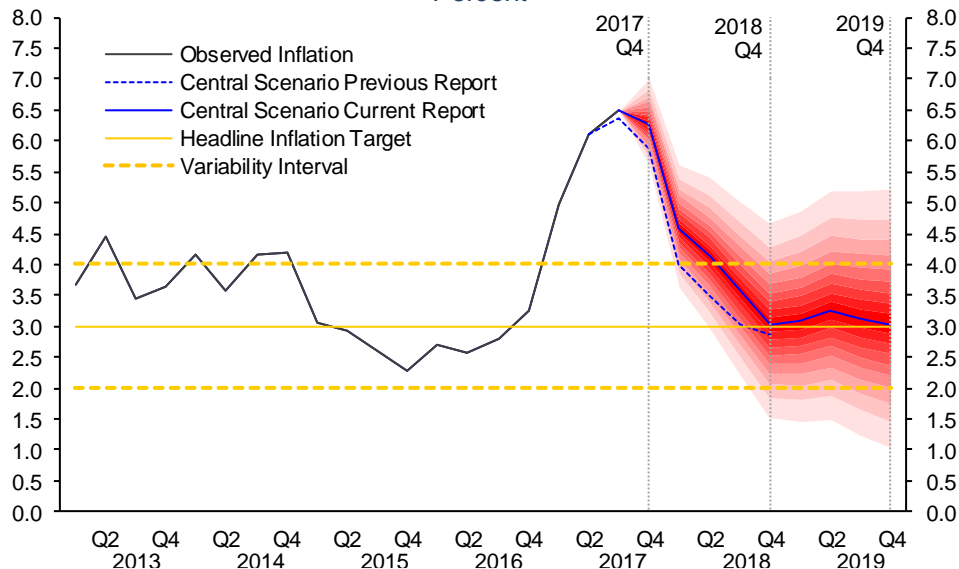
1/ Quarterly average of annual headline inflation.
Source: Banco de México and INEGI.

Chart 156
Fan Chart: Annual Core Inflation [1/]
Percent
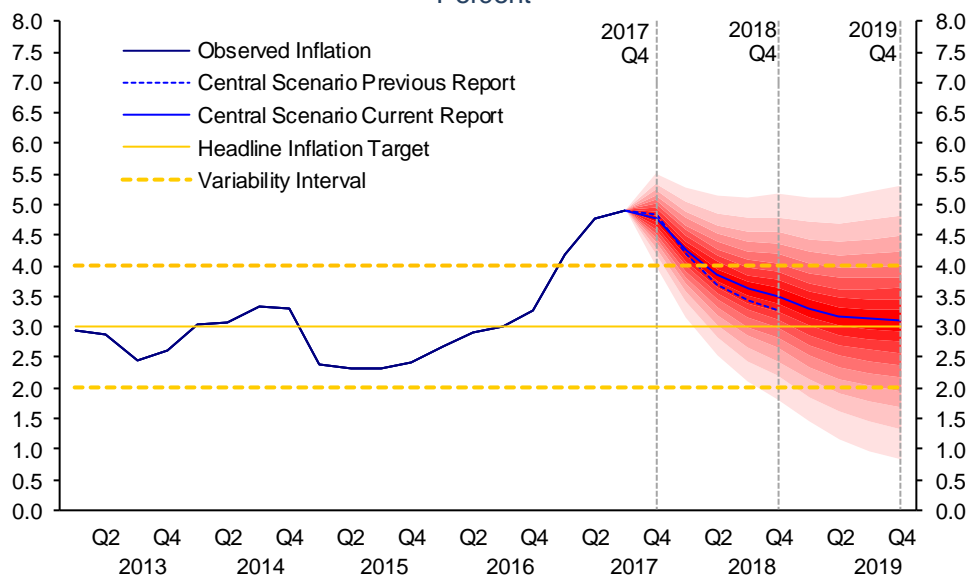
1/ Quarterly average of annual core inflation.
Source: Banco de México and INEGI.

Considering the information presented in this Report, going forward the Board of Governors will continue to closely monitor the evolution of all inflation determinants and its medium- and long-term expectations, especially considering the above described balance of risks, the future changes in the monetary policy position of Mexico relative to the U.S., the potential pass-through of the exchange rate adjustments onto prices and the evolution of the output gap, as well as the performance of potential wage pressures. In any case, in light of the different prevailing risks, the Board of Governors will be vigilant to ensure that the monetary stance remains prudent, so that the anchoring of medium- and long-term inflation expectations is strengthened, and the convergence of inflation to its target is achieved.

Derived from the structural reforms that are being implemented, and an economic policy oriented to maintain a sound macroeconomic environment, the Mexican economy has shown resilience in the face of the adverse shocks it had tackled for several years, allowing it to maintain a positive growth path. This has been the case even considering that far-reaching reforms, such as those that have been adopted, require a long implementation period and that their full impact on economic growth and on the population welfare should be assessed from a long-term perspective. However, an environment of public insecurity and of a lack of full observance of the rule of law prevents necessary-but not sufficient on their own- conditions for economic growth (such as macroeconomic stability or a better functioning of certain markets) from being reflected in greater investment and, above all, greater productivity. Productivity growth is ultimately the only way to obtain a greater and sustainable expansion of the economy, and, as such, to increase labor incomes and to enhance population welfare. That is, the latter is indispensable for the wages of the whole employed population, not only those receiving the minimum wage, to increase sustainably without generating inflation pressures, unemployment and greater informality levels. Thus, the country should seek to implement more far-

reaching reforms that grant legal certainty, enhance the rule of law, strengthen the country's institutions and modify the incentives' system faced by economic agents, so that it favors the creation of value rather than rent-seeking. Although the preceding is a goal that the country should try to attain regardless of the external environment, progress in this direction becomes even more pressing in view of the current uncertainty over the Mexico – U.S. economic relationship, which stresses the importance for the country to diversify and strengthen different engines of growth (both domestic and external) it has at its disposal.

Annex   **Calendar of Monetary Policy Decision Announcements, Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions and Quarterly Reports in 2018**

Table 1 of this annex presents the calendar for the year 2018 of the monetary policy announcements, as well as the publication of the Minutes of the Board of Governors' meetings regarding the monetary policy decisions and the Quarterly Reports. It should be noted that the monetary policy decisions will continue to be released on Thursdays at 13:00, just as in 2017. Moreover, two weeks after each announcement the corresponding Minutes will be released, as it was done in 2017. The Quarterly Reports will be published on the following dates.

Table 1
Calendar for 2018

	Announcements of Monetary Policy Decisions	Minutes of the Board of Governors' Meetings regarding Monetary Policy Decisions	Quarterly Reports [1]
January			
February	8	22	28
March			
April	12	26	
May	17	31	30
June	21		
July		5	
August	2	16	29
September			
October	4	18	
November	15	29	28
December	20[2]		

1/ The Quarterly Report that will be published on February 28, 2018 corresponds to the fourth quarter of 2017; the one to be released on May 30, 2017, to the first quarter of 2018; the one of August 29, 2018, to the second quarter of 2018; and finally the one to be presented on November 28, 2018, to the third quarter of 2018.

2/ The Minutes corresponding to the Board of Government meeting in December will be released on Thursday, January 3, 2019.

The calendar considers 8 dates for the announcement of monetary policy decisions in 2018. Nonetheless, as in previous years, Banco de México reserves the right to announce changes in the monetary policy stance at dates different from those previously scheduled, in the case of extraordinary events that may require the Central Bank's intervention.

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Section IV: Quarterly Report October – December 2017

1.   Introduction

During 2017, inflation was strongly influenced by a series of shocks of considerable magnitude, both external and domestic, pushing it to close the year at levels not observed since 2001. At the beginning of that year, inflation started to reflect the effects of the Mexican peso depreciation, mainly because of the uncertainty over the future of the bilateral relations between Mexico and the new U.S. administration. During the first part of the year, inflation was also affected by other factors, including: higher energy prices, particularly gasoline and LP gas prices, higher public transportation fares, and higher prices for some agricultural products. Even though inflation began to trend downwards in September 2017, in the last few months of the year, additional shocks pushed headline inflation up to 6.77 percent in December. Some of these shocks were: higher prices for LP gas and certain fruits and vegetables; additional depreciation of the Mexican peso; and the effect of the change in the calendar of the minimum wage increase, effective in December rather than in January. Notably, these shocks occurred in an environment of relatively tight cyclical economic conditions, which could be affecting the pace at which core inflation is declining. In January 2018, annual headline inflation dropped significantly, with a strong decrease in non-core inflation and a decline of smaller magnitude in core inflation. This was a consequence of the implemented monetary policy actions and of the fact that some energy price increases this year were lower than last year's hikes. Nonetheless, non-core inflation at the beginning of the year continued to reflect the shocks that had occurred at the end of 2017, pushing up headline inflation expectations for the end of 2018, while medium- and long-term expectations stayed close to 3.50 percent.

Banco de México adjusted its monetary stance during 2017, raising the target for the Overnight Interbank Interest Rate by 125 basis points between January and June 2017, keeping it unchanged until November. However, in the December 2017 and February 2018 policy meetings, the Board of Governors voted to raise the target interest rate by 25 basis points in each meeting, to reach a level of 7.50 percent. These actions took into account the additional deterioration of inflation given the described circumstances, the objective of maintaining a monetary stance that would prevent second-round effects from affecting the price formation process and reinforce the downward inflation trend towards its target, as well as the cyclical conditions of the economy as outlined before. In the last monetary policy decision, it was stressed that the raise in the reference rate considered the expectation of tighter monetary conditions in the U.S. economy.

The above measures were taken in a context in which, although world economic activity continued a generalized expansion and growth projections have been adjusted upwards, a number of risks persist, both economic and geopolitical, which could negatively affect the global context. In particular, faster-than-anticipated normalization of monetary policy across advanced economies is likely, especially in the U.S., possibly triggering a more volatile environment in international financial markets and restricting financing conditions, especially in emerging economies. This risk has strengthened due to the potential inflation pressures that could be triggered by the recently approved tax cuts and higher public spending in the U.S.

Indeed, this fiscal stimulus, in the context of an apparent absence of slackness in the U.S. economy, conflicts with the expectation of gradual U.S. monetary normalization and has fuelled considerable increases in the rates of 10-year and 30-year U.S. treasury bonds this year, leading to downward adjustments in the main stock indexes, albeit from high levels.

In the future, the Mexican economy is estimated to continue growing, possibly benefitting from the faster growth rate of the U.S. economy. However, the persisting uncertainty, especially over the trade relationship of Mexico in North America, could continue to affect investment. Thus, despite a slight improvement in the balance of risks to growth, the downward bias remains. Slack conditions in the economy have been tightening, although recently they seem to have started to revert moderately, except for the labor market. In this context, and considering the expected growth of the economy close to its potential, the cyclical conditions of the economy are estimated to remain around its current levels. Considering the recent performance of inflation, the expected evolution of its determinants, the current monetary policy stance and the horizon at which it operates, headline inflation is forecast to continue declining, approaching its target of 3.0 percent during the year, attaining it in the first quarter of 2019, and fluctuating close to this level during the rest of 2019. These forecasts consider an orderly evolution of the exchange rate, absence of labor market-related pressures, and a considerable decrease in non-core inflation throughout 2018, insofar as the type of shocks that affected it last year do not occur again. Taking into account the levels that inflation has attained, the shocks that have affected it and the persisting risks it still faces, the expected inflation trajectory still exhibits a balance of risks tilted to the upside.

In this environment, the Board of Governors of Banco de México will continue to closely monitor the evolution of inflation with respect to its expected trajectory, considering the horizon at which the monetary policy operates, as well as the available information on all inflation determinants and its medium- and long-term expectations, including the potential pass-through of exchange rate adjustments onto prices, the monetary policy stance of Mexico relative to the U.S. and the evolution of slack conditions in the economy. Given the presence of factors that, given their nature, imply a risk to inflation and its expectations, if necessary the monetary policy will act in a timely and decisive manner to strengthen the anchoring of medium- and long-term inflation expectations and to achieve the convergence to the 3 percent target.

It should be noted that the monetary policy actions that have been implemented to maintain medium- and long-term inflation expectations anchored, the attainment of the fiscal goals in 2017 and the commitment to reach them in 2018, along with the persisting resilience of the financial system have placed the Mexican economy in a better position to tackle possible adverse scenarios. It is important to stress the early renewal of Mexico's Flexible Credit Line with the International Monetary Fund in November 2017 for the next two years, in recognition of Mexico's solid macroeconomic framework. In the future, the Mexican economy is expected to continue facing a complex outlook. Thus, it is especially relevant to encourage the implementation of all actions fomenting greater productivity, and that the authorities move forward in the consolidation of sustainable public finances, in addition to pursuing a prudent and firm monetary policy.

2.   Economic and Financial Environment

2.1.   External Conditions

The world economy continued to expand in advanced and emerging economies during the fourth quarter of 2017. The growth of the global trade volume remained high, which reflected the rebound in investment and higher manufacturing production. In this juncture, the slack in advanced economies continued to subside, which started to translate into a gradual rise of inflation and inflation expectations, although in most cases they still remain below the respective central banks' targets. Hence, the higher dynamism of the world economic activity, and, in particular, a better growth outlook for the U.S. economy, boosted by the recently approved more expansionary fiscal stance, reflected in a notable upward adjustment in the world growth outlook for 2018 and 2019 (Chart 157).

Chart 157
World Economic Activity

a) Growth Forecast for World GDP in 2017 and 2018
Annual change in percent

b) Selected Economies: Growth Outlook
Annual change in percent
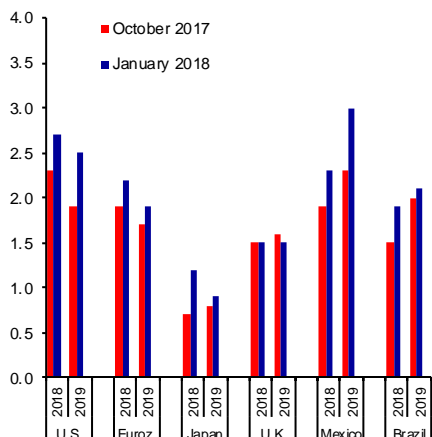
c) Advanced Economies: Natural and Observed Unemployment Rates
In percent

Note: The dotted lines refer to WEO forecasts of October 2017; the solid lines, to WEO forecasts of January 2018.
Source: IMF, WEO October 2017 and January 2018.

Source: IMF, WEO October 2017 and January 2018.
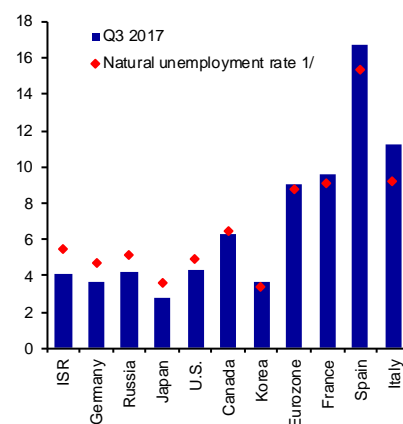
1/ Estimated by OECD.
Source: OECD, Economic Outlook, November 2017.

However, the global economy is still subject to a number of economic and geopolitical risks, some of which have spiked recently. One of them is that a faster-than-anticipated rate of monetary policy normalization in advanced economies can propitiate a more volatile environment in international financial markets and can tighten funding conditions of emerging ones. There is uncertainty over the effects of a more expansionary fiscal policy in the U.S. onto inflation in that country, and, hence, onto the normalization pace of the Federal Reserve's monetary stance. Indeed, this fiscal impulse, in a context in which the U.S. economy does not seem to register slack, has been in conflict with the expectation of a gradual normalization of the monetary stance in that country. This tension has been manifested in financial markets, generating considerable hikes in medium- and long-term interest rates in the U.S. and in other advanced economies so far this year. Similarly, following considerable increases in the assessment of financial assets during 2017, the main stock indices have been adjusted downwards recently (Chart 158).

Chart 158
International Financial Markets

a) 10-Year Bond Yield in Selected Advanced Economies
In percent
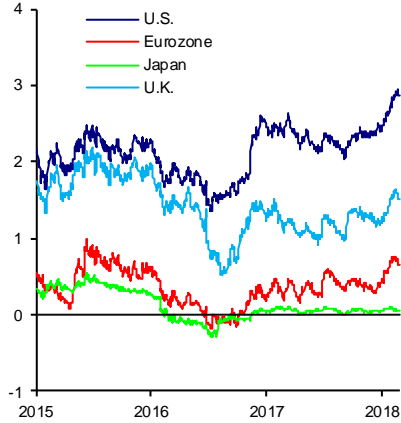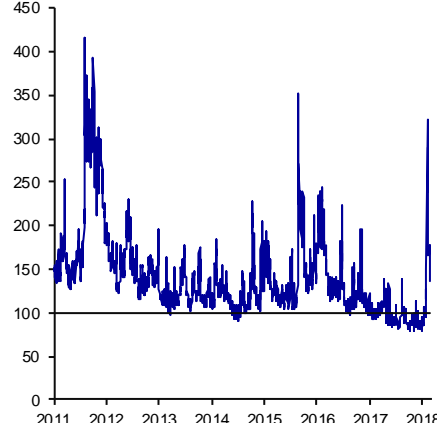
b) Volatility in International Financial Markets (VIX) [1/]
Index 01/01/2007=100

c) Advanced Economies: Stock Markets
Index 01/01/2015=100

Source: Bloomberg.

1/ The VIX index is a weighted indicator that measures implied volatility in the options' market for S&P 500.
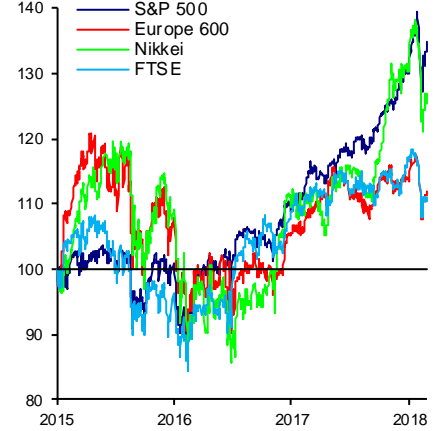
2.1.1.   World Economic Activity

Delving in the above, the U.S. economy continued a cyclical recovery during the period analyzed in this Report. Although the GDP growth at an annualized rate of 2.6 percent in the fourth quarter of 2017 was lower than in the third one, in part it reflects the contribution of the de-accumulation of inventories. The main components of domestic demand exhibited strong dynamism (Chart 159a). Indeed, private consumption rebounded in view of the improved financial position and greater confidence among households, as well as the fading of the impacts caused by the hurricanes that took place in the third quarter (Chart 159b). Similarly, private fixed investment performed favorably, reflecting the recovery of residential construction and the strong growth of investment in machinery and equipment.

In this context, industrial activity showed strong growth in the last quarter of 2017, and expanded at an annualized rate of 8.3 percent (Chart 159c). In particular, the recent hike in energy prices favored the recovery in mining and in the production of equipment for this activity. Meanwhile, the unusually cold weather at the end of the year pushed up demand for electricity and gas for heating, driving the prices considerably upwards. In addition, in the last quarter of the year the manufacturing production expanded significantly, as the impacts of the hurricanes in different regions of the U.S. faded, especially in the high-tech, automotive and car parts, chemical and oil sectors.

Chart 159
U.S. Economic Activity

a) Real GDP and Components
Annualized quarterly change in
percent and percentage point
contributions, s. a.

b) Net Wealth of Households and
Consumer Confidence
In percent of disposable personal
income and Index 1985=100, s. a.
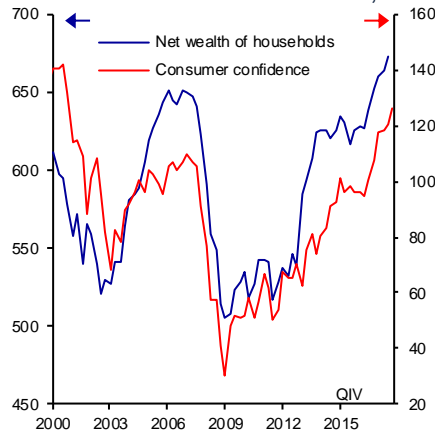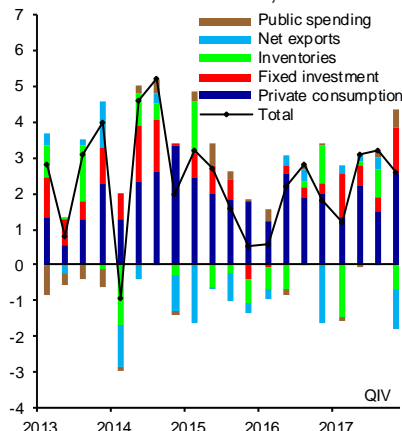
c) Industrial Activity
Annualized quarterly change in
percent and percentage point
contributions, s. a.

s. a. / Seasonally adjusted data.
Source: Bureau of Economic Analysis.

s. a. / Seasonally adjusted data.
Source: Federal Reserve and Conference Board.
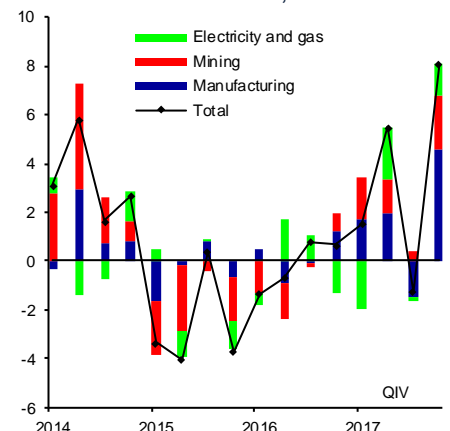
s. a. / Seasonally adjusted data.
Source: Federal Reserve.

Given the solid expansion of the U.S. economy, the estimated output gap in the U.S. suggests that the economy operated above its potential during 2017. This situation is anticipated to continue over the next years, especially given the possible impulse of the recently approved fiscal package on aggregate demand (Chart 160a). These cyclical conditions have been especially notable in the labor market, which resulted in higher wage increments. Indeed, between September 2017 and January 2018 an average of 172 thousand new jobs were generated per month, which is similar to the average of the first nine months of 2017. The unemployment rate slid from 4.2 percent in September to 4.1 percent in January, and lied below the level of 4.6 percent (estimated as long-term by the Federal Reserve). Likewise, other indicators, such as job openings, recruitment and resignation rates, and broader measurements of the unemployment rate point to a lower slack in the labor market (Chart 160b). This led to a recovery in the growth rate of average hourly remunerations, which shifted from an average annual rate of 2.5 percent during 2017 to 2.9 percent in January 2018 (Chart 160c).

Chart 160
Measures of Slack in the U.S.

a) Output Gap
Percentage of GDP

b) Unemployment Rate
In percent of labor force, s. a.

c) Wage Indicators
Annual change in percent, s. a.
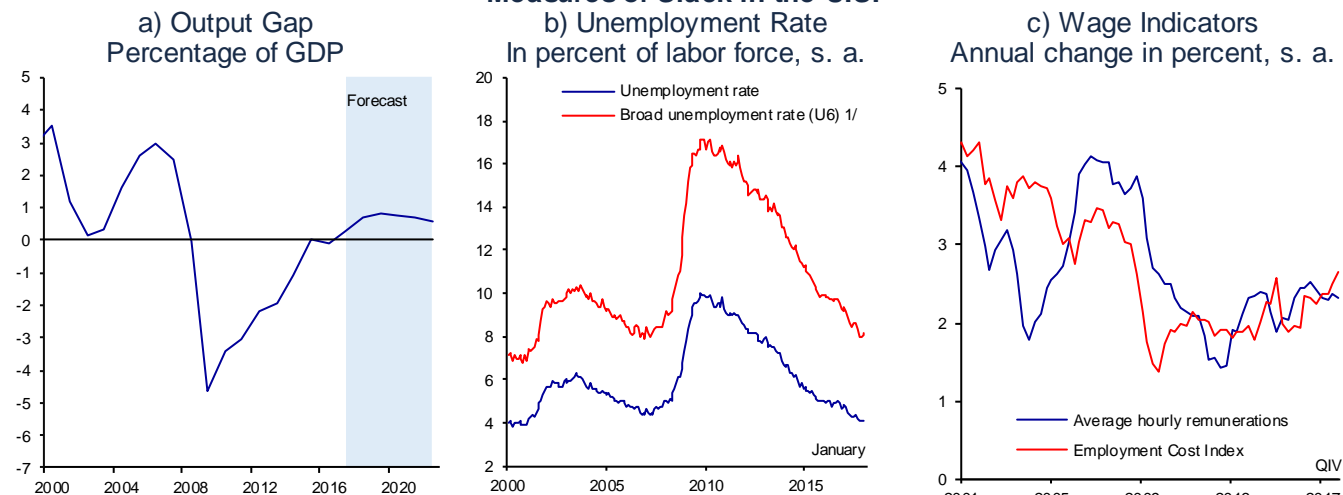
Source: IMF, WEO October 2017.

s. a. / Seasonally adjusted data.
1/ It also includes part-time workers who wish to work full time and those who were not considered as unemployed because they have not looked for jobs for the last 4 weeks.
Source: Bureau of Labor Statistics.

s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

As indicated above, in late December the U.S. Congress approved a fiscal reform that included corporate tax cuts, new schemes of capital depreciation and a shift to the territorial tax regime. In addition, the public spending approved by the U.S. Congress in early February has recently been raised by around US$300 billion for the fiscal years 2018 and 2019.[45] These adjustments are expected to foment faster economic growth in the short run (see Box 8). However, in a context in which the economy seems to be operating close to its potential, there is a higher possibility that the fiscal stimulus will eventually translate in a higher inflation and higher interest tares. Similarly, the increase in public debt that may derive from this fiscal policy makes the U.S. economic growth outlook more uncertain in the long run. A possible implementation of protectionist trade policies is among the risks to growth of the U.S. economy.

Other advanced economies also registered a cyclical recovery, which helped to maintain the expectation that the monetary policy normalization process in these economies will continue. Thus, in the Eurozone, GDP grew at an annualized rate of 2.4 percent in the fourth quarter of 2017, supported by strong domestic demand, particularly, private consumption and capital formation. Likewise, the recovery in this region has been increasingly widespread (Chart 161a). In this environment, the unemployment rate maintained a decreasing trend, which seems to be reflecting in moderate wage increases. In the Japanese economy, GDP grew at an annualized rate of 0.5 percent in the fourth quarter. Above all, it reflected the continuous recovery of domestic demand. Notably, with this result the Japanese economy has expanded for eight consecutive quarters, which has not occurred since 2000 (Chart 161b).

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[45] In addition, approximately US$89 billion were approved to support the reconstruction efforts in the wake of the recent natural disasters.

Chart 161
Economic Activity in Advanced Economies

a) Eurozone: Real GDP
Index 1Q-2008=100, s. a.
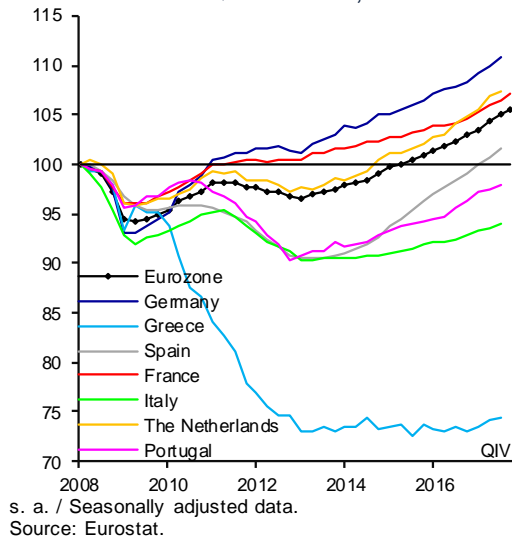
b) Japan: Real GDP
Annualized quarterly change in percent,
s. a.

s. a. / Seasonally adjusted data.
Source: Eurostat.

s. a. / Seasonally adjusted data.
Source: Cabinet Office of Japan.
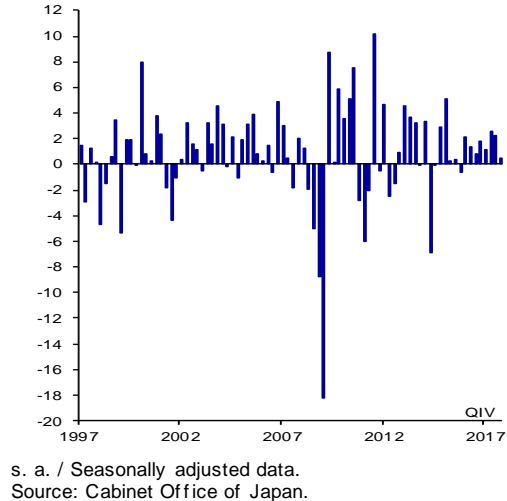
Finally, emerging economies continued to recover during the fourth quarter (Chart 162a and Chart 162b). In particular, the Chinese economy maintained a solid growth pace, supported by a greater dynamism of the services sector and by a moderate expansion in industrial activity. This occurred despite tighter credit conditions, lower fiscal stimuli and tougher regulatory aspects (Chart 162c).

Chart 162
Economic Indicators of Emerging Economies

a) Emerging Economies: Indicators of
Economic Activity
Diffusion index (50=neutral) and the
annual change in percent, 3-month
moving average, s. a.

b) Emerging Economies:
Exports
Annual change of the 3-month
moving average in percent

c) China: Gross Domestic Product
Annual change in percent

s. a. / Seasonally adjusted data.
Note: Industrial production and retail sales expressed in volumes.
Source: CPB Netherlands, Markit, Haver Analytics and IMF.

Note: Nominal data.
Source: Haver Analytics.

Source: Haver Analytics.
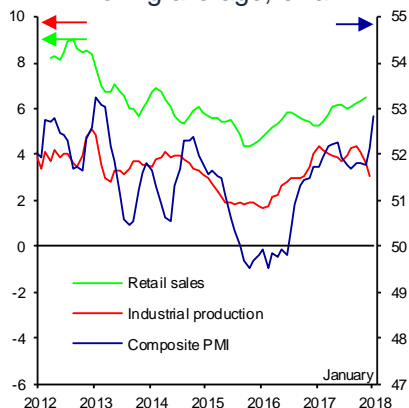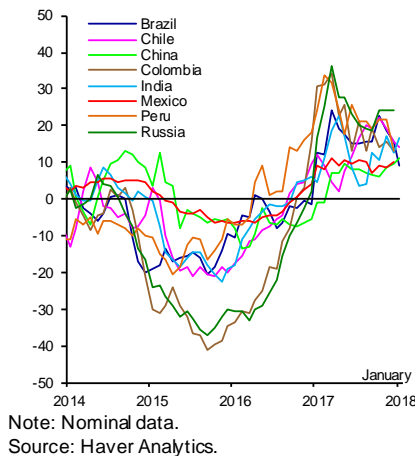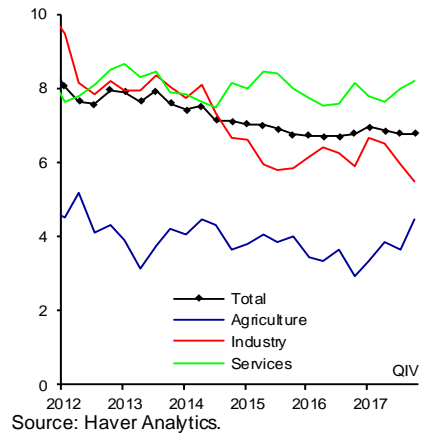
Box 8
Remarks on U.S. Fiscal Policy

1. Introduction

In December 2017, the U.S. Congress approved a fiscal reform that involves a number of modifications to the individual, corporate and international tax regimes. In addition, in early February it approved an increase in spending for approximately US$300 billion for 2018 and 2019. Despite the consensus among analysts that the approved measures will prompt a rebound in economic activity in the short term, these could also significantly raise the U.S. fiscal deficit over the next 10 years.

2. Main Features of the Fiscal Reform

Among the main changes to the individual tax regime, the adjustment in tax rates applicable to different categories of individual incomes is noteworthy, particularly a decrease from 39.6 percent to 37 percent in the top rate. Also, standard deductions have been doubled, the maximum amount associated to fiscal credits for each child has been raised, along with the requirements to access this benefit. Personal exemptions have been eliminated and mortgage interest deduction and deduction for state and local taxes have been limited.

Among the modifications to the corporate fiscal regime, there are cuts in corporate tax rate to 21 percent from 35 percent, as well as a full and immediate expensing of capital investments for five years. In addition, the reform repeals the corporate alternative minimum tax and entitles some entities under special fiscal regimes to deduct 20 percent of income.[1] However, certain deductions have been limited, such as spending on interests and the use of net operating losses from previous fiscal years.[2]

The tax reform also modified the scheme under which multinationals operate.[3] Some of the most remarkable measures aim to discourage the allocation of intellectual property rights in lower tax jurisdictions, and the accumulation of earnings broad.[4]

3. Increase in Public Spending

Besides the fiscal reform, in early February the U.S. Congress approved an increment in public spending, as it raised the spending limits for the 2018 and 2019 fiscal years by US$143 billion and US$153 billion, respectively. Within this budget, 56 percent of the increase is channeled

to the defense spending and 44 percent to other expenditures, including infrastructure, financing of health programs, new programs and opioid treatments. Besides, US$89 billion were approved to support the reconstruction efforts due to the recent damages caused by the natural disasters.

4. Fiscal Impact

There is a consensus among the main entities specialized in fiscal matters that the fiscal reform in the U.S. would lead to a deterioration in the U.S. public balance. Although the adjustments to the international regime would raise tax revenues, it would not compensate for the negative impact caused by changes in the individual and corporate regimes. In accordance with the U.S. Joint Committee on Taxation, the cost of the fiscal reform (excluding interests for the debt services) would amount to about US$1.5 trillion between 2018 and 2027 (Chart 1).[5] This should be complemented by the approved increase in spending by almost US$0.4 trillion, which would imply even greater pressures on public debt.

The impact of the tax reform on the public deficit could be lower due to the positive, albeit moderate, effect on economic growth in the short term, and to a possible approval of cuts in the discretionary public spending. However, higher interest rates derived from further inflation pressures, as a result of the impulse to aggregate demand caused by this package, could raise interests paid on public debt. There is uncertainty over how much a greater economic growth could compensate part of the deficit increment generated by the approved fiscal measures.

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[1] It refers to entities that use a specific legal form to avoid double taxation via the payment of individual taxes by business owners.

[2] The deduction of net interest expenses is limited to 30 percent of earnings before interest, tax, depreciation and amortization (EBITDA) for four years, and in the future to 30 percent of earnings before interest and taxes (EBIT).

[3] See: Joint Committee on Taxation, Macroeconomic Analysis of the Conference Agreement for H.R. 1, the "Tax Cuts and Jobs Act" (JCX-69-17), December 22, 2017.

[4] The following were established: a single 15.5 percent tax to liquid assets and an 8 percent tax of profits from previous fiscal years held abroad.

[5] The model "Penn Wharton" (PWBM) reflects that this figure would be close to 1.968 trillion while the Tax Foundation estimated this cost at US$1.47 trillion.

Chart 1
U.S.: Estimated Effect of the Fiscal Reform on Public Balance over 10 Years
In USD billion
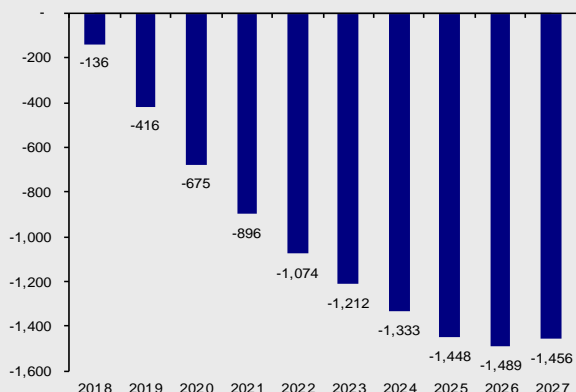
Source: U.S. Joint Committee on Taxation.

5. Economic Impact

As mentioned before, there is a certain consensus among analysts that the fiscal changes will positively affect the economic activity in the short term, via the impact on aggregate demand, labor supply, savings and investment. This impact could be moderate given that, despite a strong reduction in the statutory tax rate, the decrease in the effective rate is estimated to be between merely 3 and 4 percentage points.[6] In addition, the effect of a fiscal stimulus depends on the economy's position in the cycle, and, given the reduced slack in the economy, the effect is expected to be modest. The main transmission channel of these measures on economic activity is via an increment in households' disposable income, which would be translated into the expansion of consumption. Meanwhile, higher corporate profits could be reflected in greater return on capital and on labor, further encouraging households' spending. From a supply-side perspective, a lower tax burden on workers' earnings, as well as extending the child tax credits would create incentives for a larger amount of workers, mainly low-income workers, to join the labor force. In addition, decreased capital costs and its deductibility would not only encourage greater domestic investment, but could also favor the reallocation of productive investments, as lower effective tax rate increases the benefit of investing in the U.S. as compared to other economies, although, as stated above, the reduction in the effective rate is modest. Even though a possible increase in the capital stock could boost the economy's potential, it is contingent on stabilizing the deficit and the debt level. In addition, there is uncertainty

over the implications of a higher public debt level for U.S. economic growth in the medium and long terms.

Estimates of the reform's impact on the main macroeconomic variables vary considerably.[7] Nonetheless, different projections point to a moderate impact on economic activity during the first years. Despite the great uncertainty over the long-term impact, benefits related to growth are estimated to fade before the first decade concludes, given that most mentioned measures will no longer be in force by 2025. In particular, the estimations suggest that the reform would imply an accumulated impulse of between 0.5 and 1.3 percent on the GDP level after three years, which represents a moderate impact on annual growth of economic activity (Table 1). Furthermore, the International Monetary Fund (IMF) estimates that although the reform would imply a greater growth over the first three years, it would restrict growth starting from 2021. This is mainly due to the fact that some of these measures will expire during the following years and that a possible increase in public deficit would lead to higher interest rates, which would offset the initial effects of this reform.

Table 1
U.S.: Macroeconomic Estimates of the Fiscal Reform Impact on the GDP Level (Accumulated Effect)
Percentage

	2018	2019	2020	2027
Tax Foundation	0.40	0.90	1.30	2.90
Tax Policy Center	0.80	0.70	0.50	0.00
Model of Penn Wharton Budget	n.a.	n.a.	n.a.	0.6-1.1
Joint Tax Committee	0.8-0.9	0.8-0.9	0.8-0.9	0.1-0.2

Source: Tax Foundation, Tax Policy Center, Penn Wharton, United States Congress Joint Committee on Taxation and European Central Bank (ECB).

6. Accounting Impact

In addition to economic and financial effects of this legislation, certain provisions aim to discourage businesses from using accounting procedures to take advantage of tax benefits when registering profits in lower tax jurisdictions. That is, so far a large number of multinationals, both in the U.S. and abroad, have resorted to such strategies, as transfer prices, the change of residence of intellectual property rights, and loans among subsidiaries and branches, in order to register profits in lower tax jurisdictions, thus affecting the accounting of trade flows and of investment in the U.S. national accounts. For example, when changing the intellectual property to a different country, the income generated by a U.S. business is counted as a primary income due to its investment abroad, rather than as an export of goods or services. This strategy implies an overestimation of the

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[6] See: Duddley, W. (2018). The Outlook for the U.S. Economy in 2018 and Beyond. Remarks at the Securities Industry and Financial Markets Association, New York.

[7] In particular, a greater fiscal deficit can generate a shift in investment, as the resources used by the government to fund this deficit are no longer available to households and businesses who want to take credits and invest.

trade deficit of goods and services, as well as of primary net income in the U.S. The distortions in measuring the trade balance deficit also affect other national accounts, such as Gross Domestic Product, the capital accounts and the measures of labor productivity. The reversal of the referred strategies could be noted in accounting adjustments in the balance of payments of the U.S. and its trade partners, thus raising the estimated value of the GDP and lowering the U.S. trade deficit[8].

7.　　Final Remarks

In line with the consensus among analysts, in the short term the fiscal measures approved in the U.S. will positively affect U.S. economic activity. However, this effect would be moderate, due to the reduced slack in the economy. This derives from the fact that the fiscal multiplier is lower when an economy is going through an advanced phase of its economic cycle.[9] The fact that the fiscal changes can cause the economy to operate above its potential would be reflected in higher inflation and higher interest rates. This would be complemented by the effects that a possible increase in the fiscal deficit and in the public debt could have on long-term growth.

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[8] See: Guvenen, F., Mataloni, R., Rassier, D., and Ruhl, K. (2017). "Offshore Profit Shifting and Domestic Productivity Measurement", NBER Working Papers No. 23324.

[9] See: Auerbach, A. and Gorodnichenko, Y. (2012). "Measuring the Output Responses to Fiscal Policy", *American Economic Journal:*

Economic Policy, Vol. 4, No. 2, pp. 1-27 and Antolín-Díaz, J., Arias, J., Petrella, I., Rubio-Ramirez, J. "The dynamics effects of Fiscal Shocks: A narrative Sign Restrictions Approach", Presentation; February, 2018.

2.1.2.　Commodity Prices

The global economic recovery has also been seen in a higher demand for commodities, which affected the evolution of their prices. In particular, oil prices maintained the upward trend that had been observed since mid-2017, and marked the highest level over the last 3 years (Chart 163a). This rebound derived from higher demand for crude oil, and a lower growth of oil supply, as a result of lower production in the North Sea and Venezuela, as well as geopolitical tensions in the Middle East. Starting in February, however, crude oil prices dropped, when the production in the North Sea was resumed and as the oil production in the U.S. kept rising. This pushed the prices to levels observed in late December. Notably, lower crude oil prices have not fully offset the hike in the said prices observed since mid-2017. Industrial metal prices increased by the end of the fourth quarter, in light of the expected acceleration of global manufacturing activity (Chart 163b). In contrast, grain prices remained low, given the persisting growth outlook for production in the next months (Chart 163c).

Chart 163
International Commodity Prices [1/]

| a) Crude Oil | b) Metals | c) Corn and Wheat |
| USD/barrel | Index 01/01/2014=100 | USD/bushel |

1/ Spot Market.
Source: Bloomberg.
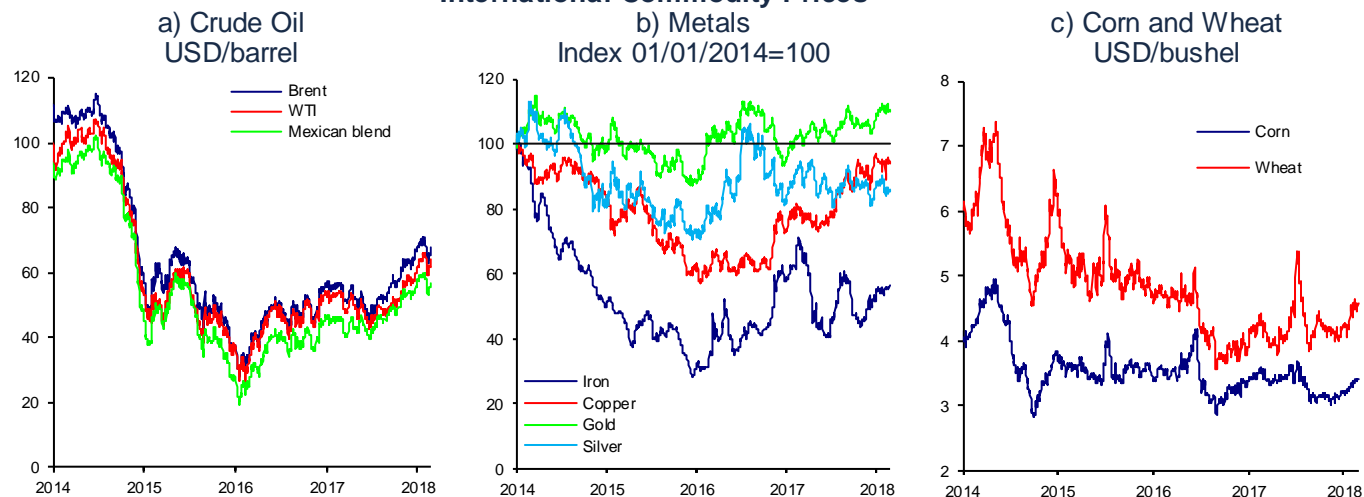
2.1.3.   Inflation Trends Abroad

During most of the recovery phase, following the 2008 financial crisis, overall inflation has remained low. This has been particularly notable in advanced economies, where inflation has persisted below the respective central banks' targets for a few years. A number of factors (some of which were more structural) contributed to this: the technological change and greater global economic integration, which could be exerting downward pressure on prices. However, this trend has been offset by the impact of tighter cyclical conditions in advanced economies' labor markets, and, recently by higher energy prices. As a result, over the last few months inflation and inflation expectations have risen gradually, although in most cases, they still remain below the central banks' targets (Chart 164). Inflation in many emerging economies has been relatively stable, at levels close to or below the respective central banks' targets, which principally responded to lower inflation pressures derived from the cyclical position of their economies. Nonetheless, in some countries, mainly in Asia, inflation has slightly increased, due to higher prices for foods and gasoline during the last months.

In the U.S., inflation has started to rise, once a number of temporary factors started to dissipate, which have lowered the prices of certain items. In particular, the negative influence of the evolution of imports' prices and energy prices onto inflation in recent years has begun to dissipate. The recent depreciation of the U.S. dollar and higher oil prices, along with a lower slack in the economy are expected to contribute to a rebound in inflation (Chart 165). Nevertheless, so far inflation has still remained below the Federal Reserve target.

Specifically, the annual change of the consumption deflator was 1.7 percent during the fourth quarter, after observing rates close to 1.5 percent during the third one. Similarly, core inflation shifted from an annual rate of 1.4 percent to 1.5 percent over the same time span, as this indicator's monthly changes have accelerated recently. The evolution of inflation in January 2018, measured with the Consumer Price Index (CPI), with the Import Price Index (IPI) and the Producer Price Index (PPI), points to a rebound, which spurred an upward adjustment in inflation projections for the

end of the year. This also was notable in a gradual increase of inflation expectations implicit in financial instruments.

Chart 164
Inflation in Advanced and Emerging Economies

a) Headline Inflation
Annual change in percent

b) G4: Core Inflation
Annual change in percent

c) G4: Long-term Inflation
Expectations Implicit in Financial Instruments [1]
In percent
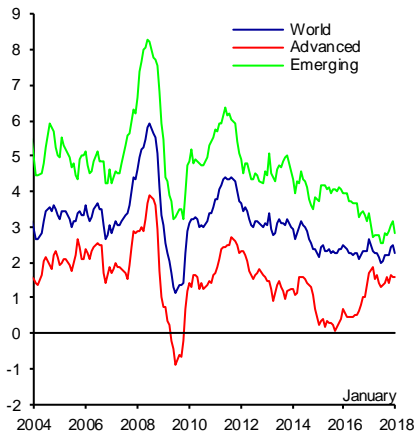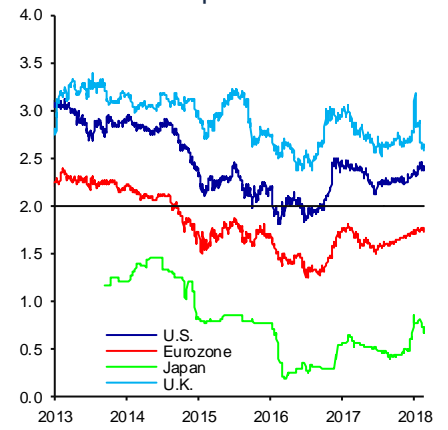
Note: The sample of countries used here represents 82.2 percent of global GDP measured by the purchasing power parity. The figure of inflation in the U.S. in January corresponds to estimates of the Federal Reserve Bank of Cleveland.
Source: Prepared by Banco de México with data from Haver Analytics, the Federal Reserve Bank of Cleveland and IMF.

1/ The consumption deflator was used.
2/ Fresh foods and energy products are excluded, along with the direct impact of a higher consumption tax.
Source: Prepared by Banco de México with data from Haver Analytics.

1/ Inflation expectation in a 5-year period for the following 5 years. Expectations obtained from swap contracts in which one counterparty agrees to pay a fixed rate in exchange for receiving a referenced payment at an inflation rate over a specified period.
Source: Prepared by Banco de México with data from J.P. Morgan.

In the Eurozone, headline inflation shifted from an annual rate of 1.5 percent in September 2017 to 1.3 percent in January 2018. Similarly, core inflation declined from 1.1 percent to 1.0 percent during the same period. Nonetheless, inflation expectations in this region have increased, especially those implicit in financial instruments. In Japan, inflation reached 0.9 percent in annual terms in January, rising from 0.7 percent in September. Core inflation, excluding fresh foods and energy products, adjusted from 0.2 to 0.4 percent in annual terms in this period.

Chart 165
Inflation in the U.S.

a) Consumption Deflator Annualized annual and monthly change in percent, s. a.	b) Price Index of Imports of Consumer Goods and Nominal Broad Exchange Rate Index Annual change in percent	c) Percentage of the Basket of Consumption Spending Deflator with Annual Changes in Different Ranges In percent, s. a.
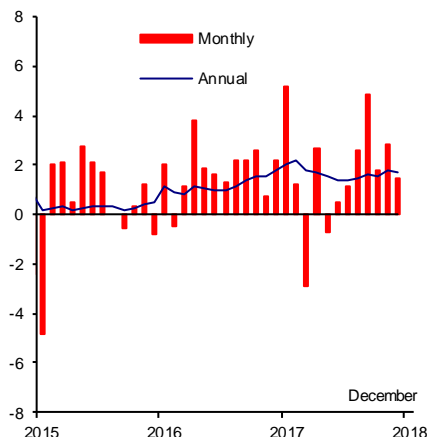
s. a. / Seasonally adjusted data
Source: Bureau of Economic Analysis.
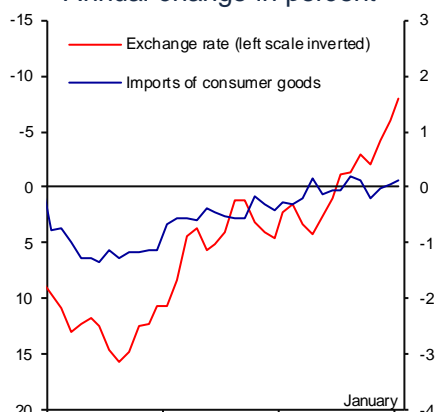
Source: Bureau of Labor Statistics and Federal Reserve.
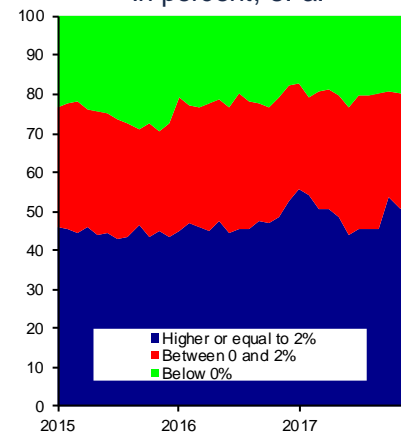
s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data from Bureau of Economic Analysis.

2.1.4.   International Monetary Policy, and Financial Markets

In the reference period, some of the main central banks continued to move forward with the strategy of a gradual withdrawal of the monetary stimulus, albeit at different rates depending on their position in the economic cycle. Although the recent inflation performance has been so far congruent with a scenario of a gradual adjustment in the monetary policy stance of the main advanced economies, the risk of a faster-than-anticipated rise of inflation, and, thus, of benchmark interest rates in some of these countries has increased.

In its meeting of January, the U.S. Federal Reserve left the target range of federal funds' rate unchanged, after increasing it by 25 basis points in December. This Institute stressed that the economic activity in the U.S. has performed better than expected, and inflation is anticipated to increase this year and to stabilize around its target in the medium term. This has reinforced the estimation that the benchmark rate will go up in March. However, it noted that economic conditions are expected to continue performing in line with the gradual increments in its target rate.

In its meeting of January, the European Central Bank (ECB) maintained the levels for the reference interest rates unchanged and confirmed that the current rate of the asset purchase program will continue until September this year. However, it noted that this date could be extended if inflation does not exhibit a trend congruent with its target. Nonetheless, the EBC stressed that its monetary stance has been effective in laying the groundwork to reach the inflation target in the medium term. Therefore, it does not rule out a revision of its asset purchase program starting from September. In its meeting of January, the Bank of Japan maintained unchanged its short-term deposit rate, the target for long-term government bonds and the amount of its asset purchase program. Finally, the Bank of Japan considered that its current monetary stance remains adequate for the convergence to its inflation target and inflation expectations. Meanwhile, the monetary policy stance varied across the

emerging economies, depending on their position in the economic cycle and on idiosyncratic factors. There were still downward adjustments in the reference rates in some countries, while in others these rates increased.

Strong economic prospects for the world economy and the expectation that the monetary policy normalization processes carried out by the main central banks would take place gradually continued fomenting the financial markets during most of the period analyzed in this Report. In this way, volatility persisted at historically low levels in the last quarter of 2017. Similarly, the stock markets kept performing well during the quarter, particularly in the U.S., where the expectations and, subsequently, tax cuts favorably affected the expected corporate sector performance. Nevertheless, starting from early 2018, global financial markets observed volatility episodes, in a context of more pronounced increases in medium- and long-term interest rates. These events seem to reflect the greater risk of a faster monetary policy normalization process than that currently anticipated by the markets. The adjustment in the stock markets in early February 2018 occurred in a context in which the valuations of these assets were especially high (Chart 166a). Capital flows to emerging economies were stable during most of the quarter, which was interrupted in February due to the upsurge in volatility in international financial markets (Chart 166b).

In the foreign exchange markets, after the U.S. dollar appreciation during 2016, reflecting the expectation that the Federal Reserve would continue with the monetary policy normalization process, the U.S. dollar had a generalized depreciation during most of 2017 and in early 2018, in view of upside adjustments in growth expectations of other advanced economies. The risk of a potential deterioration in the fiscal deficit and the current account of the U.S., derived from the recently approved fiscal package, could bring greater uncertainty regarding the performance of the economy in the medium and long terms, as well as the U.S. dollar rate (Chart 167).

Chart 166
Financial Indicators in Emerging Economies

a) Emerging Economies: Stock Markets
Index 01/01/2015 = 100
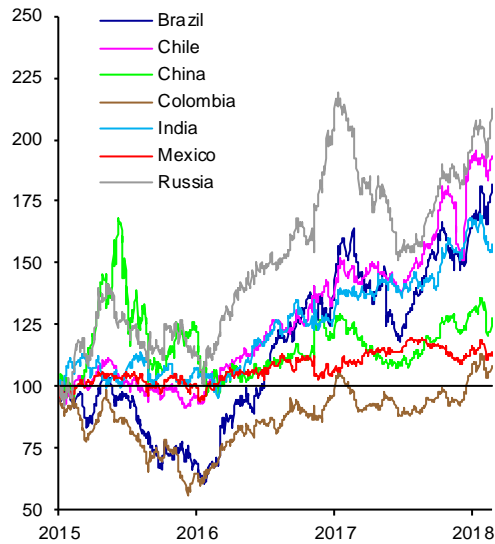
Source: Bloomberg.

b) Monthly Flows of Funds to Emerging Economies [1]
In USD billion
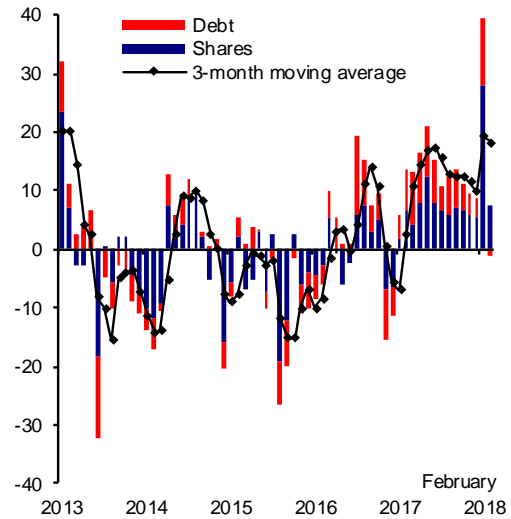
1/ The sample covers the funds used for the sale and purchase of emerging countries' shares and bonds, registered in advanced economies. The flows exclude the portfolio performance and exchange rate adjustments.
Source: EPFR.

Chart 167
Foreign Exchange Markets

a) Advanced Economies: Exchange Rate against the U.S. dollar
Index 01/01/2015 = 100
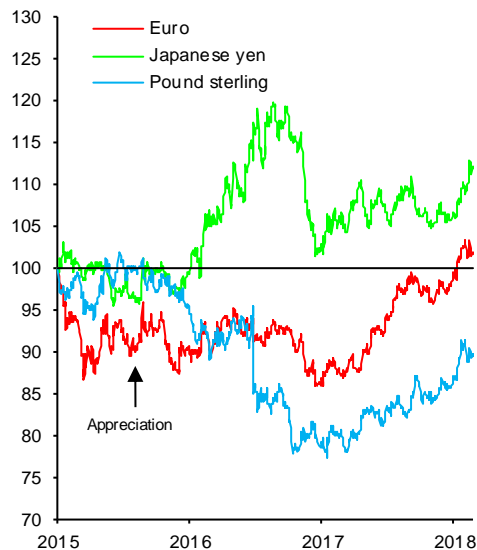
Source: Bloomberg.

b) Emerging Economies: Exchange Rate against the U.S. dollar
Index 01/01/2015 = 100
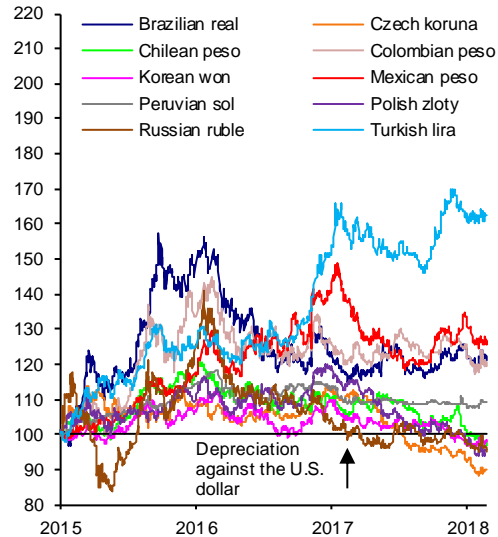
2.1.5.   Risks to World Economic Outlook

The recent global environment, characterized by stronger, more sustained growth in different regions, and by the foreseeable effects of a more expansionary fiscal stance in the U.S. suggests that the balance of risks to the global economy is upwards in the short term. However, in the medium term different important risks can negatively affect growth:

i.   Significant changes to the regional and global integration model, which resulted, among other factors, from the turn to protectionist policies across some advanced economies. In this context, there is still uncertainty related to the NAFTA renegotiations and the future relations of the U.K. and the European Union.

ii.   Greater-than-expected deceleration of the Chinese economy, with possible implications for global demand. This could occur, among other reasons, due to disruptions possibly generated by a sudden and abrupt adjustment in the financial system of that country.

iii.   Risks associated with a possible escalation of geopolitical tensions in different regions.

Certain risks can affect the global financial stability, and, in particular, the financing conditions in emerging economies:

i.   The U.S. monetary policy normalization process that is faster than expected by financial markets, and possibly in other advanced economies, in view of higher inflation pressures.

ii.   A global environment of higher interest rates can pressure the financial strength of non-bank financial intermediaries, which represents important challenges to regulation and supervision that need to be fostered by a proper risk management.

2.2.   Evolution of the Mexican Economy

2.2.1.   Economic Activity

In the last quarter of 2017, the Mexican economy experienced an important expansion fostered mainly by the performance of the services sector. This stands in contrast with the contraction in the third quarter, in the wake of the September earthquakes and a major decline in the oil production platform in that same month. Regarding the components of aggregate demand, exports continue to perform favorably and private consumption still displays a positive trend, albeit with signs of a slight deceleration. In contrast, investment remained weak.

Delving into the performance of external demand, in the period of October – December 2017 manufacturing exports continued to perform favorably, which was consistent with the more depreciated level of the real exchange rate with respect to that observed in 2015 and with the strengthening of the global economic activity in 2017 (Chart 168a).[46] The expansion of manufacturing exports in the fourth quarter of 2017 resulted from growth in automotive exports and the rest of manufactures. Within automotive exports, shipments to the U.S. and the rest of the world increased, although the growth rate of the latter was more pronounced (see Box 9). The favorable evolution of non-automotive manufacturing exports largely derived from the dynamism of those destined to countries other than the U.S., while those sent to the U.S. have decelerated slightly (Chart 168b and Chart 168c). In the analyzed quarter, oil exports increased, despite remaining at low levels. This improvement was due to a higher average price of the Mexican crude oil blend for exports and a greater volume of exported crude oil compared to the previous quarter (Chart 168d).

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[46] Although the real exchange rate appreciated in 2017 relative to 2016, it remained more depreciated than in 2015, when it had adjusted following the fall in international crude oil prices that had started in the second half of 2014.

Chart 168
Mexican Exports
Index 2013=100, s. a.

a) Total Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

b) Non-automotive Manufacturing Exports

c) Automotive Manufacturing Exports

s. a. / Seasonally adjusted and trend data based on information in nominal dollars. The former is represented by a solid line, the latter by a dotted line.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

d) Oil Exports and Crude Oil Export Platform

s. a. / Seasonally adjusted series based on data in nominal dollars.
1/ 3-month moving average of daily barrels of the seasonally adjusted series.
Source: Banco de México with data from *PMI Comercio Internacional*, S.A. de C.V; and SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

Box 9
Recent Evolution of Mexican Automotive Exports

1. Introduction

Mexico's manufacturing exports have performed favorably since the second half of 2016, after displaying a negative trend in 2015 and in early 2016, which was a result, among other factors, of the weak world economy (see Box 2 of the Quarterly Report April - June 2016). Its most recent performance shows a positive evolution of manufacturing exports (both automotive and non-automotive), in which the dynamism of car exports to the U.S., and especially to the rest of the world, stands out.

The dynamism of automotive exports has responded to the significant investment to the sector over the recent years, both by assembly plants with previous presence in Mexico as well as new firms. This could have been the result of the country's attractiveness as an investment destination, which reflects and at the same time strengthens Mexico's comparative advantage in this sector. In this context, the dynamism of automotive exports is particularly favorable for the economic activity not only due to the direct effects on the productive activity of the sector, but also because of its content of national added value, which is on average greater than that incorporated in the rest of exported manufacturing goods.

2. Recent Evolution of Automotive Exports

In 2017, total automotive exports registered an annual growth of 11.8 percent. This was a result of the 32.7 percent increase in car shipments, the 8.3 percent increase in truck shipments and the 1.3 percent increment in car parts shipments (Table 1 and Chart 1). In particular, car exports destined to countries other than the U.S. grew 48.3 percent, and exports to the U.S. expanded 27.0 percent (Table 1 and Chart 2). This progress came after the decline of 1.0 percent in 2016 in total automotive exports, and, in particular, of 4.3 percent in car exports.

In this context, the greater growth rate in 2017 of automotive exports to countries other than the U.S. resulted in a higher share of them in total Mexican

automotive exports. Indeed, between 2016 and 2017 it increased from 14.6 to 16.8 percent (Table 1).
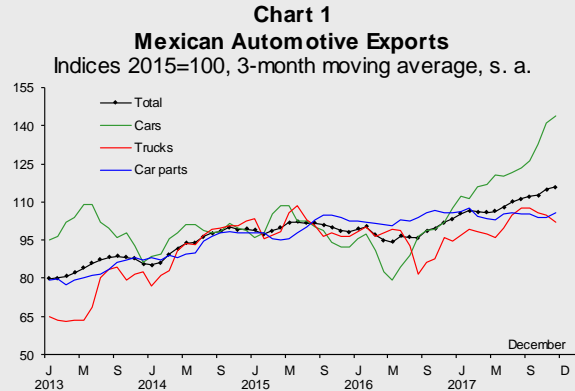
Chart 1
Mexican Automotive Exports
Indices 2015=100, 3-month moving average, s. a.

s. a. / Seasonally adjusted data.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

Chart 2
Mexican Car Exports
Indices 2015=100, 3-month moving average, s. a.
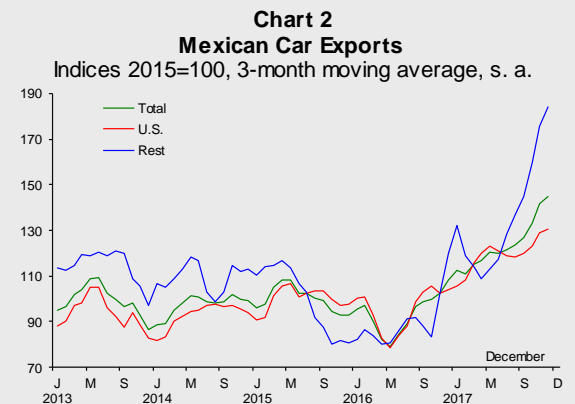
s. a. / Seasonally adjusted data.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

Table 1
Structure by Destination of Automotive Exports
Percent

	Percentage structure				Annual percent change			Contribution to annual change, percentage points		
	2000	2015	2016	2017	2015	2016	2017	2015	2016	2017
Total	**100.0**	**100.0**	**100.0**	**100.0**	**4.7**	**-1.0**	**11.8**	**4.7**	**-1.0**	**11.8**
U.S.	91.2	85.2	85.4	83.2	6.3	-0.8	8.8	5.3	-0.6	7.5
Rest	8.8	14.8	14.6	16.8	-3.7	-2.6	29.2	-0.6	-0.4	4.2
Cars[1]	43.4	28.7	27.7	32.9	1.4	-4.3	32.7	0.4	-1.2	9.1
U.S.	37.4	21.1	20.3	23.0	7.2	-4.8	27.0	1.5	-1.0	5.5
Rest	6.0	7.6	7.4	9.9	-11.8	-3.0	48.3	-1.1	-0.2	3.6
Trucks [2]	13.8	26.5	25.4	24.6	4.9	-5.4	8.3	1.3	-1.4	2.1
Car parts	42.8	44.8	46.9	42.5	6.7	3.7	1.3	2.9	1.6	0.6

1/ Passenger cars and others, mainly used for passenger transportation.
2/ Vehicles to transport over 10 people; for merchandise transportation and special use.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

The dynamism of car exports to countries other than the U.S. has mainly resulted from higher sales to Europe, Latin America and Asia (Chart 3). In the particular case of Europe, the value of car exports between 2016 and 2017 increased by 90.5 percent, especially due to shipments to Germany.

Chart 3
Car Exports to Destinations Other than the U.S.
USD billion, 6-month moving average, s. a.
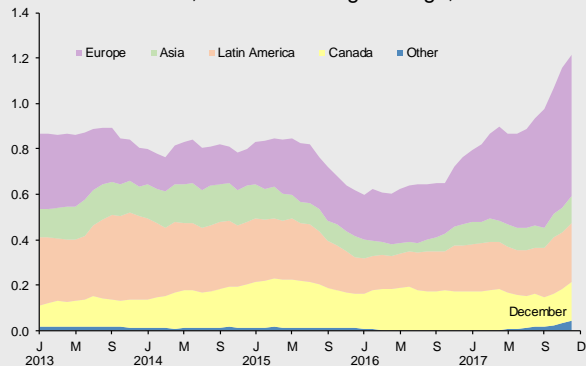
s. a. / Seasonally adjusted data.
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

Higher investment in the sector has contributed to this evolution. Indeed, these investments are estimated to have raised the production capacity by around 20 percent between 2016 and 2017 (an approximate rise of 755 thousand units with respect to the estimated installed capacity of 3.8 million units at the end of 2015; Chart 4).

Chart 4
Production of Light Vehicles and Installed Capacity
Thousands of annualized units
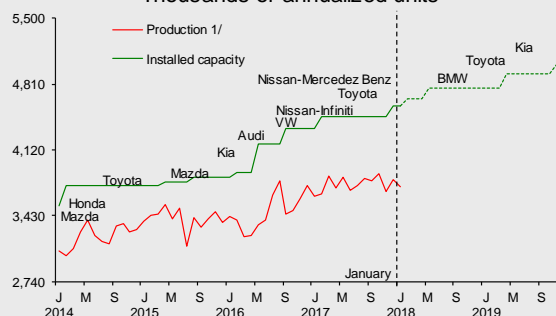
1/ Seasonally adjusted data.
Source: Production prepared and seasonally adjusted by Banco de México with data from AMIA. Installed capacity is estimated based on assembly plants' press releases and journalistic notes.

In particular, Nissan and Volkswagen have significantly increased their installed capacity in recent years. Kia and Audi started operations in May and September 2016, respectively, and during 2017 both assembly plants contributed with approximately 10 percent of total domestic production. In the particular case of Audi, the assembly plant of the premium class was set up in Mexico to mainly supply the European market, although also the rest of the world. In the future, Nissan and Toyota are expected to increase their exports over the next few years, thanks to the construction of new plants. Similarly, Mercedez Benz and BMW are anticipated to begin car production in Mexico in 2018 and 2019, respectively, which is expected to continue strengthening the dynamism of automotive exports.[1]

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[1] These statistics are prepared based on journalistic notes, press releases, web pages and the financial reports of the assembly plants, direct consultations with firms and data from the Mexican Automotive Industry Association (AMIA).

At the same time, higher investment in the automotive sector not only has raised productive capacity in that industry, but has also oriented it to the production and exports of vehicles of higher value. Indeed, as of 2016 a clear growing trend in the unit value of exported cars has emerged (Chart 5). In that way, the higher value in U.S. dollars of shipments of cars abroad is not attributed exclusively to a greater exported volume, but also to a greater value per unit exported. This raises the sector's contribution to the evolution of the merchandise trade balance.

Chart 5
Unit Value Index of Car Exports
Index 2015=100, 3-month moving average
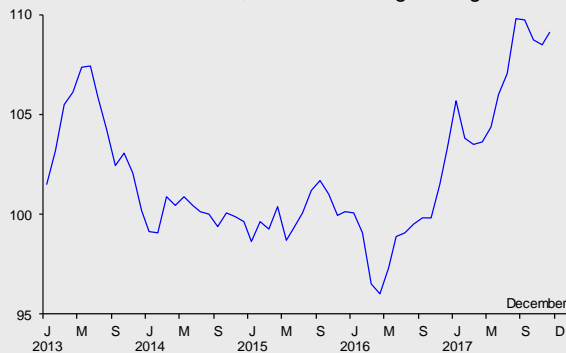
Source: Banco de México with data from SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest. See Box 2 of the Quarterly Report October – December 2015 for a description of the methodology used to estimate unit values.

In connection with this, the domestic value-added contained in automotive exports is estimated to be higher than that contained, on average, in the remaining exports of manufactured goods.[2] In particular, although in 2000 the shares of the domestic value-added included in the gross value of exports of automotive and non-automotive manufacturing goods were similar, since 2001 the one corresponding to automotive exports has been higher than that of the remaining manufacturing goods (Chart 6).

Chart 6
Domestic Value-Added Contained in Mexico's Manufacturing Exports
Percentage relative to gross exports
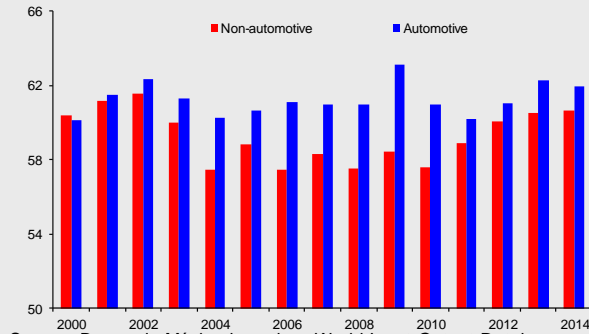
Source: Banco de México based on World Input-Output Database.

5. Final Remarks

In the context in which the dynamism of automotive manufacturing exports to the U.S., and more notably, to the rest of the world has positively affected economic activity, not only due to the higher value of exports, but also given the implications in terms of generating a greater added value per U.S. dollar exported, the importance of strengthening the institutions and other elements that make Mexico an attractive investment destination is bolstered. Similarly, considering the dependence of the automotive sector on the transport infrastructure to receive inputs and to distribute final goods, the preceding highlights the need to improve the infrastructure in Mexico to continue expanding its export capacity and to foster the diversification of export markets.

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[2] Koopman, et al. (2014) propose an accounting and analytical framework to break down the gross exports' value, tracing the productive links between industries and countries. Wang, et al. (2014) expand this framework, so that breaking down of the exports is also valid at the sectoral and bilateral level. The latter approach is used in this Box to estimate the domestic value-added contained in Mexican manufacturing exports, using the world input-output matrix. For a detailed description of these estimates, see Box 1 of the Quarterly Report July – September 2017, Banco de México.

In the fourth quarter of 2017, the performance of the domestic demand components was heterogeneous. Indeed, the trend of private consumption remained positive, despite showing signs of a deceleration, while investment maintained a negative trajectory:

i.   The incipient deceleration of the monthly indicator of private consumption could be associated, in part, with the negative impact of the September earthquakes, which seems to have mainly affected the services consumption, while the trend of the consumption of goods remained positive (Chart 169a). However, a certain loss of dynamism in some of the private consumption determinants could also affect its performance. Indeed, the wage bill has dropped in real terms over the last few quarters (Chart 170a). This reduction is associated with a lower real average income, given that the employed population kept expanding in the reported period. Similarly, consumer confidence deteriorated in late 2017 and early 2018, while credit for consumption maintained lower growth rates as compared to 2016 (Chart 170c and see Section 2.2.3.). In contrast, incomes from remittances have remained especially high, which could have contributed to maintain a certain positive trend in private consumption (Chart 170b).

ii.   More timely indicators, although of a smaller coverage, such as the revenues of retail sales, continued decelerating with respect to the dynamism exhibited in 2016, while domestic sales of light vehicles maintained the negative trend that had started at the end of that same year (Chart 169b).

iii.   In the fourth quarter of 2017, the negative trajectory of spending on investment during most of that year persisted (Chart 171a). In particular, in the period of October – November spending on machinery and equipment showed a negative trend, while the trend of spending on construction kept decreasing. Regarding investment in construction, the residential component remained weak, while the non-residential one maintained the declining trend that had been observed since the beginning of 2015 (Chart 171b). By contracting sector, in the reference period private investment in construction maintained a negative trajectory, possibly affected by the uncertainty over the NAFTA renegotiations. Similarly, although spending on public investment in construction slightly recovered in the second half of 2017, it is at particularly low levels after exhibiting a decreasing trend, especially since the end of 2015 (Chart 171c).

Chart 169
Consumption Indicators
Index 2013=100, s. a.

a) Total Private Consumption, Consumption of National Goods and Services
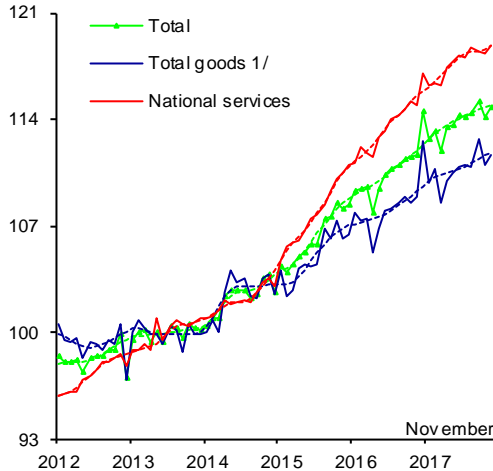
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Prepared and seasonally adjusted by Banco de México. Includes national and imported goods.
Source: Mexico's National Accounts System (SCNM), INEGI.

b) Domestic Retail Sales of Light Vehicles and Revenues of Retail Businesses
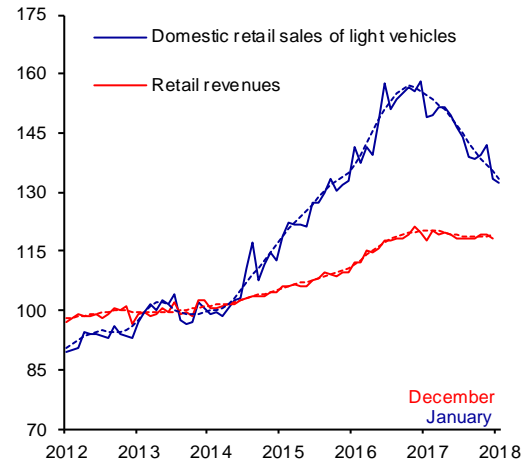
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from the Mexican Automotive Industry Association (AMIA) and the Monthly Survey of Commercial Establishments (EMEC), INEGI.

Chart 170
Determinants of Consumption
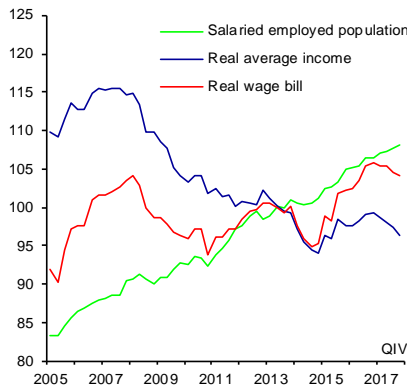
a) Total Real Wage Bill
Index 2013=100, s. a.

s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data from the National Employment Survey (ENOE), INEGI.

b) Workers' Remittances
Billions, USD and constant MXN, s. a.
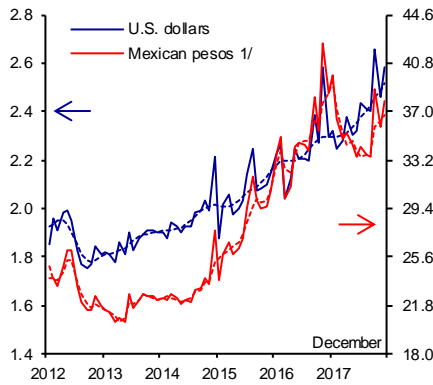
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Prices as of the second fortnight of December 2010.
Source: Banco de México and INEGI.

c) Consumer Confidence
Index January 2003=100, s. a.
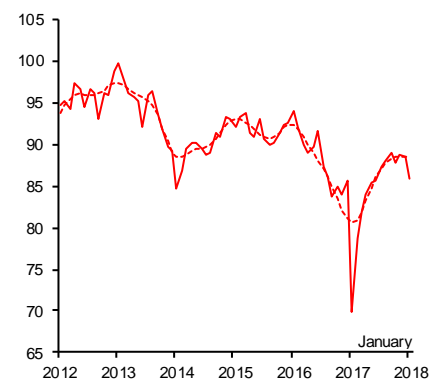
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: National Consumer Confidence Survey (ENCO), INEGI and Banco de México.

Chart 171
Investment Indicators

a) Investment and its Components
Index 2013=100, s. a.

b) Investment in Residential and
Non-residential Construction
Index 2013=100, s. a.
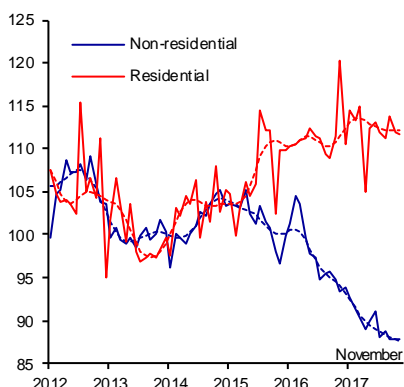
c) Real Value of Production in
Construction by Contracting
Institutional Sector
Index January 2012=100, s. a.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared by Banco de México with data from ENEC, INEGI. Seasonally adjusted by Banco de México, except for the total.

Regarding the evolution of economic activity from the production side, GDP expanded at a seasonally adjusted quarterly rate of 0.78 percent in the fourth quarter (a 1.5 percent annual rate with both original and seasonally adjusted data), after having contracted 0.17 percent in the third quarter (Chart 172a and Chart 172b). Based on these results, in 2017 as a whole the economic activity expanded 2.0 percent (2.3 percent with seasonally adjusted figures), which compares with the rate of 2.9 percent registered in 2016 (2.7 percent with seasonally adjusted data). [47]

The expansion of productive activities in the fourth quarter of 2017 was supported by the dynamism of the services sector, in the wake of the September earthquakes.

In contrast, the performance of industrial activity remained weak, although in December it rebounded, reflecting a better evolution of construction during that month, which could be associated with the reconstruction efforts after the September earthquakes (Chart 173a and Chart 173b). In particular:

i.   Within the industrial activity, in the fourth quarter of 2017 mining maintained the negative trend that had been observed over the last few years. However, in October it recovered from an additional contraction in September, derived from a drop in crude oil production (Chart 174b).

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[47]   In 2017, the annual growth rate of GDP (using original series) was lower than that estimated with seasonally adjusted data, due to a higher comparison base with respect to the previous year, given that 2016 was a leap year. It should be noted that conversely and for the same reason, in 2016 the GDP growth rate (with original figures) was greater than that estimated with seasonally adjusted data.

Chart 172
Gross Domestic Product

a) Quarterly Changes
Percent, s. a.

b) Annual Changes
Percent

s. a. / Seasonally adjusted data.
Source: Mexico's National Accounts System, INEGI.
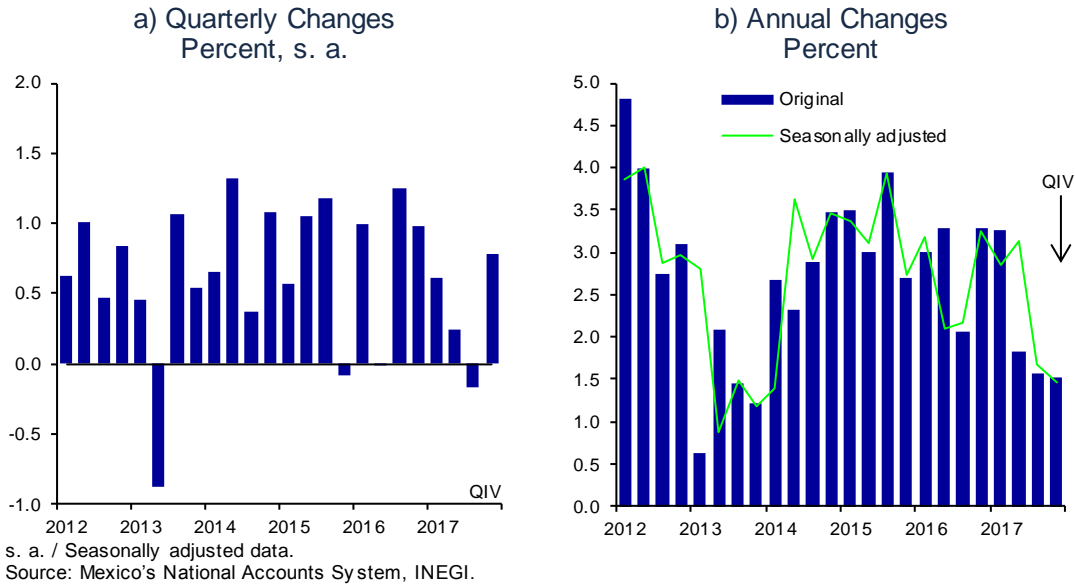
Chart 173
Production Indicators
Index 2013=100, s. a.

a) Global Economic Activity Indicator

b) Industrial Activity

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National
Accounts System (SCNM), INEGI.

ii.   In contrast, in the reported period the manufacturing activity showed a
positive trajectory, although the growth rate remained lower than in the
second half of 2016 (Chart 173b). The transport equipment subsector
presented a certain loss of dynamism relative to the growth it displayed in
2016 and in the first half of 2017. In contrast, the aggregate of
manufacturing excluding transport recovered over the last few months,
following the weakening it had exhibited in late 2016 and in early 2017
(Chart 174a). In particular, the beverages and tobacco industry, and the
basic metals industry performed favorably. However, the manufacturing of
oil- and carbon-derived products continued a negative trend, while the

chemical industry and the manufacturing of computer equipment and other electronic components somewhat decelerated, which is congruent with the evolution of non-automotive exports to the U.S.

iii. The following factors contributed to the recovery of the tertiary activities in the fourth quarter of 2017: progress in trade and increases in transportation, mail and warehousing; education; business support-related; and mass media services (Chart 175). In this context, the favorable performance of some services in the reported period seems to have reflected the fading of the effects of the September earthquakes.

iv. The quarterly seasonally adjusted expansion of the primary activities in the fourth quarter of 2017 derived, to a large extent, from a larger sown area in the autumn – winter cycle, as well as from higher production of maize grain, cotton, avocado, walnut and grain sorghum (Chart 173a).

Regarding the external accounts of the country, in 2017 the deficit of the current account continued to decline to levels below those observed in 2015 and 2016. This was in a context in which the real exchange rate remained at depreciated levels with respect to 2015 and in which the strengthening of global economic activity contributed to the recovery of Mexico's manufacturing exports. This occurred despite the increase in the deficit in the fourth quarter of 2017 as compared to the same period of 2016 (Chart 176b and Chart 176c). In particular, the current account deficit as a share of GDP shifted from 2.1 to 1.6 percent between 2016 and 2017 (from US$22.8 billion to US$18.8 billion, respectively). The lower deficit in 2017 with respect to 2016 mainly reflected a larger non-oil trade balance, which even changed from a deficit in 2015 and 2016 to a surplus in 2017, although larger surpluses in the remittances and travelling accounts were also contributing factors. In contrast, in 2017 the deficit of the oil trade balance continued to widen (Chart 176a).

Chart 174
Manufacturing and Mining Sectors
Index 2013=100, s. a.

a) Manufacturing Sector   b) Mining Sector Components
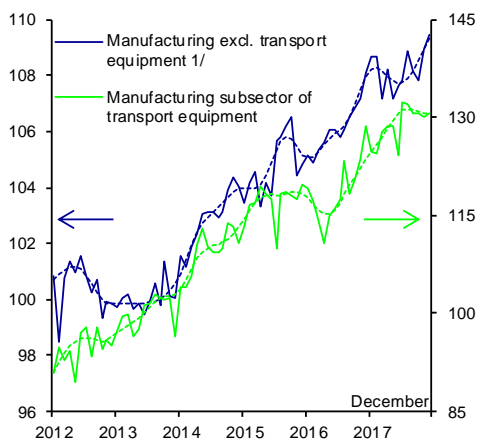
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Prepared and seasonally adjusted by Banco de México.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.
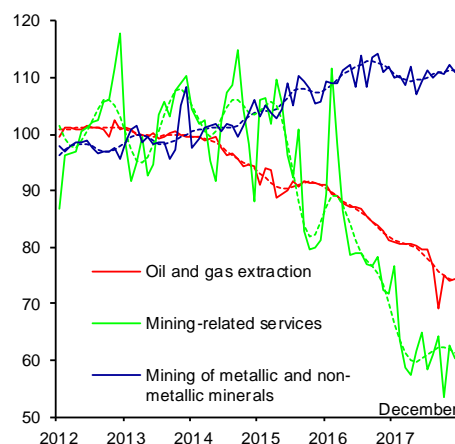
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

Chart 175
IGAE of the Services Sector
Index 2013=100, s. a.
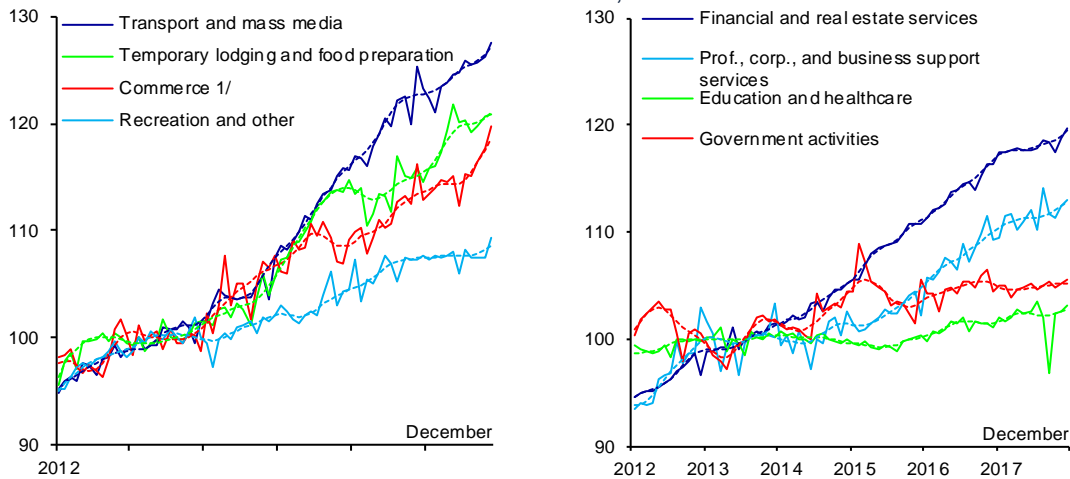
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Prepared by Banco de México. It includes retail and wholesale trade.
Source: Mexico's National Accounts System (SCNM), INEGI.

Chart 176
Trade Balance and Current Account
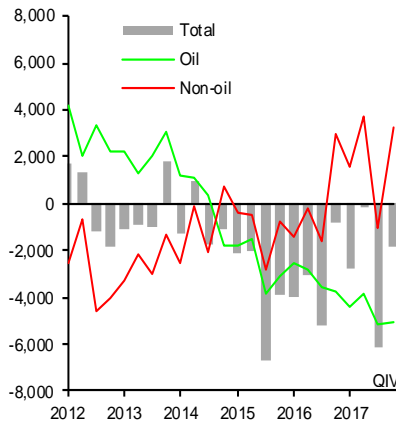
a) Trade Balance
USD millions
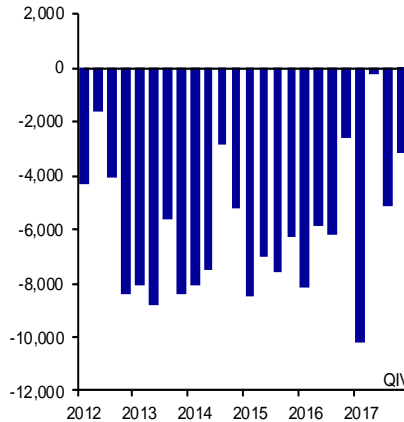
b) Current Account
USD millions

c) Current Account
Percentage of GDP

Source: SAT, SE, Banco de México, INEGI.
Merchandise Trade Balance. SNIEG.
Information of National Interest.

Source: Banco de México.
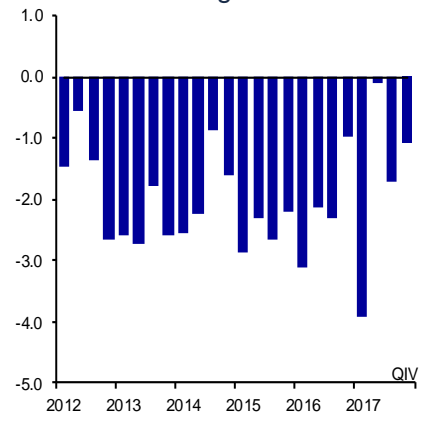
Source: Banco de México and INEGI.

2.2.2. Labor Market

In the fourth quarter of 2017, unemployment rates remained particularly low (Chart 177) and lower than those that are estimated to be congruent with an environment of stable inflation over the last few years (Chart 178). Nonetheless, in the last months they seem to have stopped their downward trend. This has occurred in a context in which labor participation was low, although in the reported period it increased relative to the previous quarter, albeit from low levels. Thus, the employment rates of the economy as a whole continued to grow, while the number

of IMSS-affiliated jobs maintained high dynamism, the declining trend of the labor informality rate continued and marked the lowest levels over the last 13 years. [48]

Despite this, there were no significant wage-related pressures in the analyzed period. Wage indicators exhibited nominal growth rates similar to those observed in the previous quarter, which in a comparison with the accumulated inflation of the previous four quarters implied negative real changes. Nevertheless, if compared to the expected inflation in the last quarter of 2017 for the next 12 months it showed a slight advance in real terms. In particular, the average nominal wage of salaried workers in the economy registered an annual growth rate of 4.1 percent, an increase similar to that in the previous quarter, while the average adjustment of contractual wages negotiated by firms under federal jurisdiction was 4.0 percent (Chart 179). In contrast, the daily wage associated to IMSS-affiliated workers presented a nominal annual increase of 5.2 percent. The performance of certain nominal wages in the last quarter could have been affected by the increase in the minimum wage, which, unlike in previous years, went into effect on December 1, rather than in January of the following year.

Thus, unit labor costs in the economy as a whole decreased in the last quarter of the year and maintained a downward trend. This was largely because of the absence of significant pressures on real earnings. It should be pointed out, however, that those corresponding specifically to the manufacturing sector continued to show an upward trend (Chart 180a and Chart 180b).

Notably, the performance of real earnings in 2017 reflected, in part, the adjustment induced by the considerable depreciation of the real exchange rate as compared to its level in 2015. This was a consequence of the shocks that have affected the Mexican economy. In this sense, the monetary policy, in line with its mandate, has taken measures to preserve the purchasing power of the Mexican peso, so that, even in the presence of these shocks, the negative effects of this environment on real wages have been mitigated.

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[48] Currently, the unemployment rates and the labor informality rates are measured based on the results of the National Employment Survey (ENOE), which began to be conducted in 2005.

Chart 177
Labor Market Indicators

a) National and Urban Unemployment Rates
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
Source: National Employment Survey (ENOE), INEGI.

b) National Labor Participation Rate [1]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
1/ Percentage of Economically Active Population (EAP) with
respect to the population of 15 years and older.
Source: National Employment Survey (ENOE), INEGI.

c) IMSS-insured Workers, Total IGAE and
Working Population
Index 2013=100, s. a.

s. a. / Seasonally adjusted data.
1/ Permanent and temporary jobs in urban areas. Seasonal
adjustment by Banco de México.
Source: Prepared by Banco de México with data from IMSS and
INEGI (SCNM and ENOE).

d) Informal Sector Employment [1]
and Labor Informality [2]
Percent, s. a.

s. a. / Seasonally adjusted and trend data. The former is
represented by a solid line, the latter by a dotted line.
1/ It refers to individuals working in non-agricultural economic units,
operating with no accounting records and using households'
resources.
2/ It includes workers who, besides being employed in the informal
sector, work without social security protection, and whose
services are used by registered economic units, and workers
self-employed in subsistence agriculture.
Source: National Employment Survey (ENOE), INEGI.

Chart 178
Estimate of the Unemployment Gap
Percent, s. a.
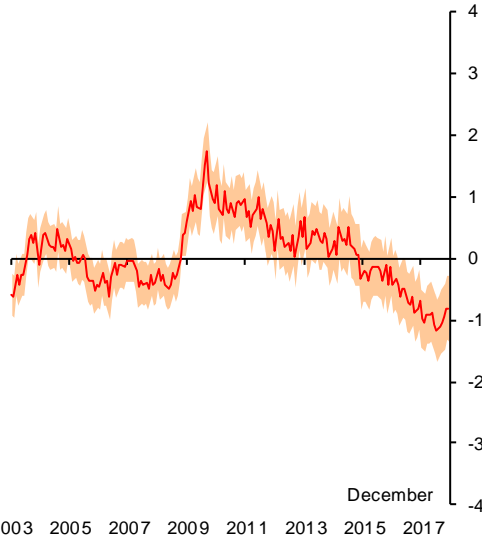
a) Unemployment Rate [1/]   b) Unemployment Rate and Informal Wage
                                                            Workers [1/]

December

2003 2005 2007 2009 2011 2013 2015 2017

s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval
   corresponds to two average standard deviations among all
   estimates.
Source: Banco de México.

December
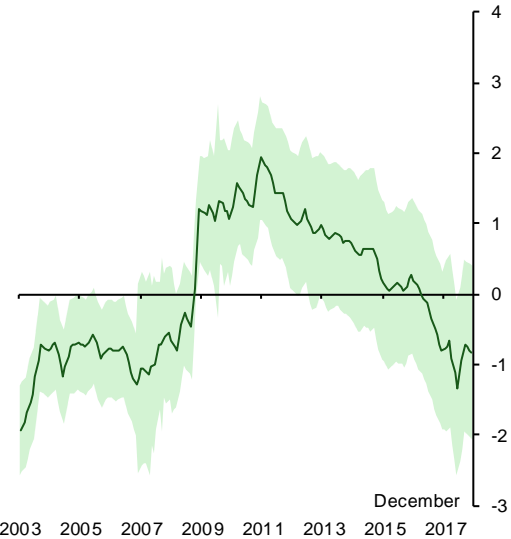
2003 2005 2007 2009 2011 2013 2015 2017

s. a. / Seasonally adjusted data.
1/ Shaded areas represent confidence intervals. An interval
   corresponds to two average standard deviations among all
   estimates.
Source: Banco de México.

Chart 179
Wage Indicators
Annual change in percent
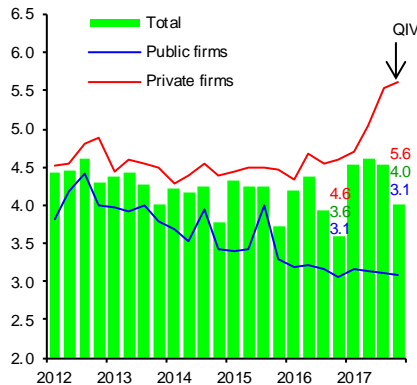
a) Average Wage of Salaried   b) Nominal Contractual Wage [2/]   c) Daily Wage of IMSS-affiliated
Workers according to the National   Workers [3/]
Employment Survey [1/]
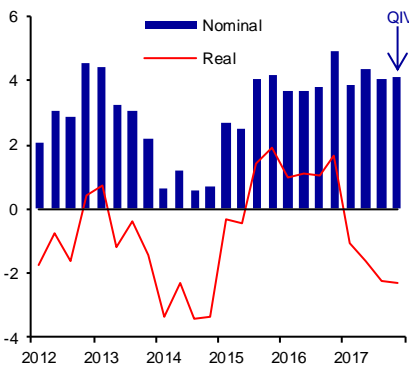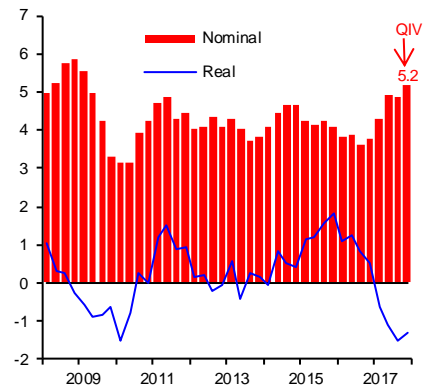
1/ To calculate average nominal wages, the bottom 1 percent and the top 1 percent in the wage distribution were excluded. Individuals with zero reported income or
   those who did not report it are excluded.
2/ The contractual wage increase is an average weighted by the number of involved workers. The number of workers in firms under federal jurisdiction that report their
   wage increases each year to the Secretary of Labor and Social Welfare (STPS) is approximately 2.3 million.
3/ During the fourth quarter of 2017, on average 19.6 million workers were registered at IMSS.
Source: Calculated by Banco de México with data from IMSS, STPS and INEGI (ENOE).

Chart 180
Productivity and Unit Labor Cost
Index 2008=100, s. a.
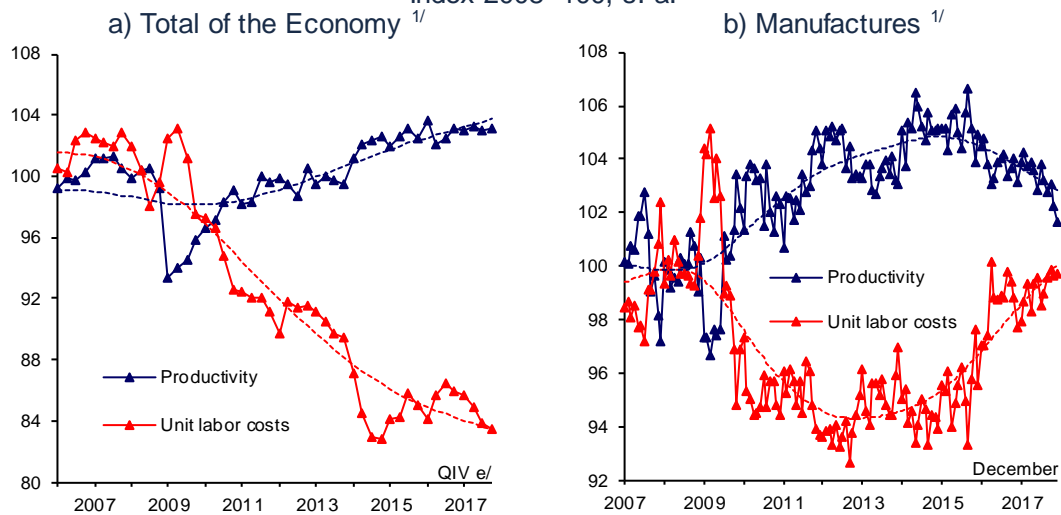
a) Total of the Economy [1/]

s. a. / Seasonally adjusted and trend series. The former is
        represented with a solid line, the latter, with a dotted line.
e/ The figure of the fourth quarter of 2017 is Banco de México's
        estimate based on the GDP data published by INEGI (SCNM).
1/ Labor productivity based on hours worked. 2013 base series
        of Mexico's System of National Accounts.
Source: Prepared by Banco de México with data from INEGI.

b) Manufactures [1/]

s. a. / Seasonally adjusted and trend series. The former is
        represented with a solid line, the latter, with a dotted line.
1/ Labor productivity based on hours worked.
Source: Prepared by Banco de México with seasonally adjusted
        data from the Monthly Manufacturing Business Survey
        and the Monthly Indicator of Industrial Activity of
        Mexico's System of National Accounts. 2013 base
        series, INEGI.

2.2.3. Domestic Financial Assets, Money and Financing

On January 31, 2018, Banco de México released new monetary aggregates, domestic financial assets and financing statistics, which broaden an array of analytical exercise that can be carried out to better comprehend the interaction among these indicators and the evolution of economic activity and inflation in Mexico, which is key to make monetary policy decisions.[49] Box 3 presents the summary of the new statistics features and illustrates some of the possible analytical applications.

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[49] In fact, these indicators are used in Box 4 to identify slack conditions in the economy.

Box 10
Remarks on New Measurements of Monetary Aggregates and Domestic Financial Assets in Mexico

1. Introduction

As part of Banco de México's continuous effort to have better statistics to have a better outlook of the different aspects of the economy, on January 31, 2018 the statistics of monetary aggregates based on a new methodology (following the international standards) were released. This redefinition resulted from a revised measurement of *money in a broad sense*[1] in Mexico, which should be periodically carried out given the innovation of financial instruments and the general development of the financial system, along with the surge of new and better sources of information. On the same date, a new range of indicators, known as "domestic financial assets" was made known, which include, in addition to the financial instruments contained in the monetary aggregates, other instruments held by *money-holding sectors* (*Holders*, hereinafter)[2] and that are issued in the domestic markets, but that, given their properties, are not part of the monetary aggregates.

This Box seeks to illustrate some of the possible analytical applications of the new statistics of monetary aggregates and domestic financial assets. First, the new indicators and their main features are briefly described, after which some statistical exercises are presented illustrating, on the one hand, the relation between economic activity in the short term and monetary aggregates and domestic financial assets, and, on the other hand, the long-term correlation between monetary aggregates and inflation.[3]

2. New Indicators' Composition

First of all, the new definition of monetary aggregates in Mexico contemplates a narrow aggregate (M1) and a broad aggregate (M2), the methodology of which follows international standards, and, therefore, which are comparable with aggregates estimated in other countries. In addition to these two indicators, two broader aggregates (M3 and M4) were defined, which considered the specific characteristics of the Mexican economy, such as, for instance, residents' and non-residents direct holdings of public assets. Domestic financial assets are broader aggregates that comprise such instruments as housing and retirement savings' accounts and variable-yield securities.

Table 1 sketches out the structure of monetary aggregates and domestic financial assets. In adherence with the international practice, the broadest aggregates gradually incorporate the instruments that are typically used more as a vehicle of savings and less for transactional purposes.[4]

3. Relation between Monetary Aggregates and Domestic Financial Assets vs. Economic Activity and Inflation

In accordance with the IMF's Monetary and Financial Statistics Manual, *monetary aggregates are constructed to measure the money available in an economy to purchase goods and services, or to invest in other assets*. This suggests that their dynamics has information on Holders' consumption patterns and could therefore give signals on the current or future evolution of macroeconomic variables, such as aggregate demand or inflation. In this respect, there is an extensive academic literature that documents the relations of money growth and growth of the economic activity, on the one hand, and inflation, on the other.[5] Therefore, central banks around the world closely monitor these indicators.[6]

New measurements of domestic financial assets are broader indicators than monetary aggregates, as they include financial instruments that are not necessarily used in the short term to acquire goods and services —such as households' resources in retirement funds or asset holdings by households and businesses—, but rather which represent an important asset of Holders. In this sense, these indicators can signal at the level of savings

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[1] This document uses the definition of *money* in its *broad sense*, that is, it refers to financial instruments contained in monetary aggregates. They consist of a total of liquid instruments of a generalized use, as a means of payment (typically banknotes and coins), plus those that can become a means of payment in a very short term, with no or minimum losses in its nominal value (such as deposit accounts payable on demand).

[2] *Money holding sectors* are sectors that use instruments defined in monetary aggregates to acquire goods and services of the economy – excluding *money issuing sectors*, such as the central bank and the institutions authorized to receive deposits, as well as sectors the spending patterns of which reacts differently from the general public–.

[3] Some monetary aggregates in Mexico also have predictive power on inflation in the short term, as illustrated in Box 4.

[4] For further detail on the construction and the composition of monetary aggregates and domestic financial assets, consult the methodological documents released by Banco de México, at the link:

http://www.banxico.org.mx/informacion-para-la-prensa/comunicados/sector-financiero/agregados-monetarios/indexpage.html

[5] See, for example, McCallum, B. T. and E. Nelson (2010): "Money and inflation: Some critical issues." In Friedman, B. and M. Woodford, Handbook of Monetary Economics. Vol. 3. Elsevier. P. 97-153.

[6] For example, U.S. Federal Reserve and the Bank of England analyze the dynamics of broad monetary aggregates, as they consider that these can provide information on the observed and expected evolution of the economy. The European Central Bank studies the evolution of its broadest monetary aggregate, M3, to evaluate if its evolution in congruent with the long-term inflation target at each point of time. See Bernanke, B.S. (2006): "Monetary Aggregates and Monetary Policy at the Federal Reserve: A Historical Perspective," address at the fourth conference of central banks (ECB); McLeay, M., Radia, A. and Thomas, R. (2014): "Money Creation in the Modern Economy," Q1 Quarterly Bulletin, Bank of England; and Papademos, L.D. and Stark, J. (2010): "Enhancing Monetary Analysis," European Central Bank.

and the type of investments of the non-financial private sector. Similarly, a large part of non-monetary instruments contained in domestic financial assets are long-term fixed rent instruments and variable rent instruments, the market valuation of which considers economic agents'

expectations of the future performance of issuers of said securities and the economy. Therefore, these indicators are expected to give a certain signal over the future economic performance as well.

Table 1
Monetary Aggregates and Domestic Financial Assets
Structure of Domestic Financial Assets (F=F2+FNR)

Instruments:
Lower transactional use/
Higher use for savings/
Mainly variable income

Instruments:
Greater transactional use/
Lower use for savings/
Mainly fixed income

F2
F1 + stock market shares and hybrid instruments

F1
M3 + compulsory saving and other instruments
with a low degree of liquidity

M3
M2 + direct holding of government securities

M2
M1 + term monetary instruments
(internationally comparable)

M1
Instruments with a high degree of liquidity

FNR
MNR + stock market and hybrid
instruments + ...

MNR
(M4-M3)

Government securities

Term monetary instruments
+
Instruments with a high degree of liquidity

... + other non-monetary instruments

Held by residents   **Held by non-residents**

3.1 Relation with Economic Activity

To research if the performance of monetary aggregates and domestic financial assets has a relation with the evolution of Mexico's economic activity, dynamic correlation exercises and Granger causality exercises between IGAE and each new aggregate were carried out.[7] For the period between January 2001 and November 2017, Table 2 presents a summary of the obtained results. These suggest that in general both monetary aggregates, and domestic financial assets have a positive and significant correlation with economic activity in the short term.

Table 2
Relation of Monetary Aggregates and Domestic Financial Assets with Economic Activity

Aggregate	Maximum of significant dynamic correlation: aggregate - economic activity (lagged/preceding - sign)	Significant Granger causality: economic activity precedes the aggregate	Significant Granger causality: the aggregate precedes economic activity
M1	✓ (preceding, +)	✓	✓
M2	✓ (lagged, +)	✓	✗
M3	✓ (lagged, +)	✓	✓
M4	✓ (lagged, +)	✓	✗
F1	✗	✗	✓
F2	✓ (preceding, +)	✓	✓
FNR	✓ (preceding, +)	✓	✓
F	✓ (preceding, +)	✓	✓

*/ ✓ indicates the presence of a significant dynamic correlation or causality (precedence) in the Granger sense between variables at 95% of confidence, while ✗ indicates the opposite. The two exercises were carried out at a 12-month horizon.
The correlation sign is shown in parenthesis. It is also indicated if the maximum correlation is attained with lagged or preceding economic activity.

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[7] Granger causality test helps to determine if the performance of aggregates is useful to forecast that of the economic activity and/or vice versa. Thus, causality in the Granger sense refers to an eminently statistical concept, and does not necessarily imply a deeper causality relation.

Specifically, it stands out that:

- The narrow monetary aggregate M1 has a positive and significant relation with future economic activity. That is, its variations tend to precede those of productive activity. Some of the hypothesis that could rationalize the above are: first, that agents increase their demand for money in its most liquid form given the expectations of greater future economic activity (e.g., disinvesting in long-term financial assets to tackle input payments, payments to the work factor and the purchases of machinery and equipment that they expect to use to meet a higher demand in the future). Second, a higher current consumption of goods —which would be reflected in a higher amount of transactions of liquid financial instruments— would lead to a deaccumulation of businesses' inventories and a higher future production. Third, economic agents react to adjustments in the monetary policy stance: for example, a decrease in the benchmark interest rate would raise demand for instruments in M1, which over the following months would also lead to higher aggregate demand.

- All broad monetary aggregates are related to lagged economic activity, that is, fluctuations in productive activity precede adjustments in these aggregates. This can derive from the fact that, insofar as higher economic activity generates greater disposable income in non-financial private sector, demand for financial instruments more closely related to savings will tend to grow during the subsequent months.

- Domestic financial assets, held by both residents and non-residents (F, F2 and FNR), are significantly related to future economic activity. This would be a sign that the expected greater growth of the economy in the future would be notable as immediate increases in financial asset prices, particularly in variable-rent instruments.

Chart 1 shows the dynamic correlation of real annual changes of F and lagged/preceding IGAE for the period of study. The correlation index reaches its maximum (0.58) three months in advance, which means that positive changes in the aggregate F tend to precede changes in IGAE three months in advance.

Chart 1
IGAE (t+j) and F (t)
Dynamic correlation of real annual changes
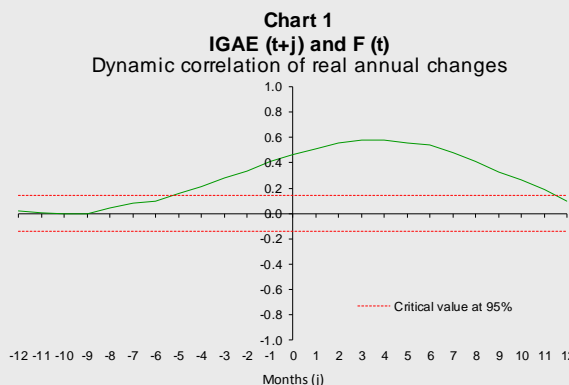
3.2 Relation with Inflation

The relation between the monetary aggregates and inflation is principally based on the quantitative theory of money, which suggests that fluctuations in the amount of money in an economy are related one on one in the long term with the changes in the price level, although in the short term deviations can be observed in this relation. Among other factors, this derives from the possible effects of money on economic activity in real terms in the short run.[8] To explore this long-term association among variables, academic empirical works generally use relatively long time series.[9] Therefore, the empirical exercises in this subsection were estimated for a sample that comprises the period from January 1995 to December 2017.

Thus, the analysis below explores the relation between long-term inflation trends and growth of monetary aggregates, using two different tools:

1. The technique suggested by Fitzgerald (1999) is used, which via a linear regression quantifies the relation between long-term trends of annual changes in monetary aggregates and inflation of the CPI. In particular, first, long-term trends of annual changes are calculated as 4-year moving averages of monetary aggregates, $\overline{\Delta\%M_t}$, and the CPI, $\overline{\Delta\%P_t}$.[10] Subsequently, the relation is measured between the variables with the estimator of the slope, β, and the statistic R^2 of the linear regression with error u_t:
$$\overline{\Delta\%P_t} = \alpha + \beta\,\overline{\Delta\%M_t} + u_t.$$

2. The spectral coherence between the annual changes in the CPI and monetary aggregates is estimated, to identify the degree of correlation between these series at a low frequency. If this coherence is high and significantly not different from one, the variables have

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[8] See, for example, Papademos, L.D. and Stark, J. (2010): "Enhancing Monetary Analysis," European Central Bank.
[9] See Benati, L. (2009): "Long Run Evidence on Money Growth and Inflation," ECB WP 1027.

[10] Fitzgerald carries out the analysis with moving averages of 4, 6 and 8 years. 4-year moving averages were chosen to avoid lowering the statistical power of the estimates. See Fitzgerald, T.J., (1999): "Money Growth and Inflation: How Long is the Long-Run?". *Economic Commentary*. Federal Reserve Bank of Cleveland. August 1.

a similar performance in the long term; that is, they are cointegrated.[11]

Table 3 presents a summary of these exercises. In general, both estimation methods suggest a long-term correlation close to 1 between inflation and monetary aggregates growth rates.[12] In the case of M4, R^2 statistic is relatively low and the estimated spectral coherence is statistically lower than one, possibly given that this aggregate incorporates non-resident holdings of monetary instruments, which may be partially used to be spent on goods and services in the domestic economy, and, therefore, would not imply such a close link with inflation.

Table 3
Estimation of Relation between Long-term Trends

Aggregate	Fitzgerald's estimations		Spectral coherence
	β	R^2	Long-term
M1	0.82	0.91	0.86*
M2	1.07*	0.89	0.86*
M3	0.99*	0.91	0.91*
M4	0.97*	0.62	0.71

Note: β corresponds to the estimator of the slope in the regression, which is significantly different from 0 in all cases, with a significance level of 5%. The asterisk indicates that the estimated coefficient is not statistically different from 1.

4. Final Remarks

The new definition of monetary aggregates and the construction of domestic financial assets substantially improve Banco de México's statistics, as they yield information that facilitates the reading of the economy. On the one hand, new monetary aggregates more accurately measure money in its broad sense issued in Mexico, while its construction follows international standards, which makes them comparable with those used across other countries. On the other hand, aggregates of financial assets are new indicators that allow to have a broader measurement of the savings level and the degree of satisfaction in Holders' investments.

Thus, the exercises presented in this Box suggest that: i) the monetary aggregates and domestic financial assets have a short-term relation with the economic activity. In particular, it stands out that fluctuations in M1, as well as in F2, FNR and F, give a forward sign of economic activity growth over the following months; ii) growth of monetary aggregates, particularly those corresponding to resident Holders, are very highly correlated with inflation in the long term, which highlights the importance of these indicators for the monetary policy.

[11] To do that, the variance of each series and the covariance among them is estimated in the domino of frequencies for different periodicities. The coherence is calculated as the squared coefficient of correlation among the series in the domino of frequencies, so the statistic takes the values between 0 and 1. See Chapter 10 of Hamilton, J.D., (1994): Time Series Analysis. Princeton University Press.

[12] The results should be interpreted as unconditioned correlations, as other factors, which could affect demand for money, are not controlled for, such as interest rates or economic activity.

2.2.3.1. Total Funding of the Mexican Economy [50]

Before presenting the analysis of total funding of the Mexican economy in the period reported here, it is necessary to discuss its dynamics from a longer-term perspective. This will show the way financing has responded to the different shocks that have affected the Mexican economy since 2014. In particular, since the last quarter of that year the Mexican economy has been subject to a number of negative shocks that generally caused tighter external financing. Some of these factors were a drop in international crude oil prices in 2014 and 2015, and, subsequently, the consequences of the U.S. electoral process and its outcome on domestic financial markets, as well as the uncertainty over the monetary policy normalization process in advanced economies, in particular in the U.S. Because of these shocks, the foreign sources of financial resources of the Mexican economy dropped significantly from levels above 4 percent of GDP, on average, in 2013 and 2014, to an annual average of 1.4 percent of GDP between 2015 and 2017 (Table 6). Tighter foreign financing required an adjustment in the macroeconomic stance of Mexico, so that, on the one hand, given the current phase of the economic cycle, it would propitiate a lower absorption and would induce greater savings in the economy, thus increasing the domestic sources of financing. On the other hand, it would lead to a lower use of financial resources by the public sector, prompting a more efficient adjustment in channeling funds to different sectors of the economy, and therefore preventing the greater part of the decrease in financing from falling to productive activities and households.

In this context, the aforementioned adjustment was twofold. First, monetary policy actions implemented by Banco de México starting from the last quarter of 2015 contributed to a smooth adjustment in the loanable funds market. In particular, the tighter monetary stance maintained medium- and long-term inflation expectations anchored, strengthening the resilience of the economy to the more adverse environment, and prompted economic agents to temporarily reallocate spending, thus reducing the absorption of the economy. This generated greater financial saving, therefore increasing the supply of loanable funds. Indeed, the domestic sources of resources expanded between 2015 and 2017 from 4.6 to 6.6 percent of GDP. In particular, the monetary sources recovered –especially the instruments that constitute M2, which are the sources of funds, which financial intermediaries channel as credit into different sectors of the economy–. Consequently, the referred monetary policy actions would lead to tighter funding conditions for the users of credit. Secondly, it was important for the adjustment to affect productive activities as little as possible. In this context, a fiscal consolidation effort had been undertaken starting from 2016, which freed resources for the financial intermediaries to channel them to the private sector, thus mitigating the pressures on the respective financing costs.

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[50] Unless stated otherwise, in this Section growth rates are expressed in real annual terms and are estimated based on balances adjusted for exchange rate and asset price variations.

Table 6
Total Funding of the Mexican Economy (Sources and Uses)

	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
	Annual flows as percent of GDP					Real annual change				
Total sources	**10.0**	**9.7**	**5.8**	**7.4**	**7.8**	**5.9**	**5.3**	**3.4**	**3.8**	**0.9**
Domestic sources (F1) [1/]	5.7	5.6	4.6	5.5	6.6	5.6	5.1	5.3	5.4	3.6
Monetary [2/]	3.8	3.2	2.7	3.6	4.2	6.0	4.1	4.7	5.7	3.7
Non-monetary [3/]	1.9	2.4	1.9	1.9	2.3	5.0	7.0	6.3	4.9	3.4
Foreign sources [4/]	4.2	4.1	1.2	1.9	1.2	6.3	5.7	0.6	1.3	-3.4
Total uses	**10.0**	**9.7**	**5.8**	**7.4**	**7.8**	**5.9**	**5.3**	**3.4**	**3.8**	**0.9**
International reserves [5/]	1.0	1.3	-1.5	0.0	-0.4	0.8	2.0	-9.2	-3.5	-8.5
Public sector financing	4.1	4.7	4.2	2.8	1.1	4.6	5.7	6.3	2.4	-4.1
Federal public sector	3.7	4.5	4.0	2.8	1.1	4.3	6.0	6.5	2.6	-4.1
States and municipalities	0.4	0.2	0.1	0.1	0.1	9.1	2.5	2.9	-0.6	-4.6
Private sector financing	4.2	2.5	3.1	3.0	3.8	6.6	2.2	5.5	4.0	2.8
Domestic	2.5	1.7	3.0	3.0	3.3	5.3	2.1	8.9	7.3	4.5
Foreign	1.7	0.8	0.1	0.0	0.5	9.5	2.4	-1.6	-3.5	-1.7
Other [6/]	0.7	1.2	0.1	1.6	3.2	n.s.	n.s.	n.s.	n.s.	n.s.

Note: Annual flows are expressed in percent of average annual nominal GDP.

1/ It corresponds to the aggregate of domestic financial assets F1, which includes the monetary aggregate M3 plus other instruments held resident money-holding sectors that are not considered in monetary aggregates.

2/ It refers to financial instruments included in the monetary aggregate M3, which is composed of M2 plus Federal Government securities, Banco de México's securities (BREMS) and IPAB securities held by resident money-holding sectors.

3/ They include housing and pension saving funds, private securities, other public securities and other bank liabilities (debt securities issued by banks with a remaining term of over 5 years and subordinated obligations).

4/ It includes the monetary aggregate M4 held by non-residents (the difference between the monetary aggregate M4 and M3), foreign financing to the federal government, public institutions and enterprises, commercial banks' foreign liabilities, foreign financing to the non-financial private sector, deposits by agencies and other non-monetary instruments held by non-residents.

5/ As defined by Banco de México's Law.

6/ It includes capital accounts, and results and other assets and liabilities of commercial and development banks, non-bank financial intermediaries, of the National Housing Fund (Infonavit) and Banco de México –including the securities issued by this Central Institute for the purposes of monetary regulation, especially those related to neutralizing the monetary impact by the operational surplus–. Similarly, it includes non-monetary liabilities from the Institute for the Protection of Bank Savings (IPAB), as well as the effect of the change in the valuation of public debt instruments, among other concepts.

Source: Banco de México.

In this context, there was a lower availability of external financial resources in 2017. The relative share of domestic sources increased as compared to the previous year, although its growth rate in real terms subsided, as a result of the higher observed inflation in 2017 (Chart 181a). The lower use of financial resources by the public sector is noteworthy, as it mitigated the deceleration in the use of resources by the private sector (Chart 181b)

Chart 181
Total Funding of the Mexican Economy (Sources and Uses)
Real annual change in percent $^{1/}$
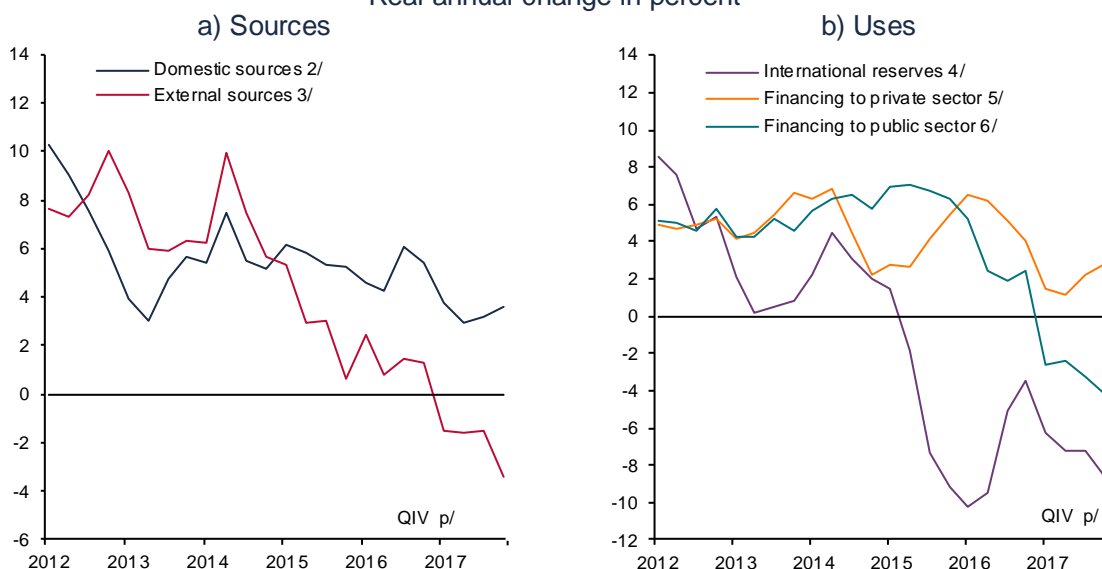
a) Sources

b) Uses

QIV p/

QIV p/

p/ Preliminary data.
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variation.
2/ It is equivalent to the aggregate of domestic financial assets F1, which includes the monetary aggregate M3 plus other non-monetary instruments held by resident money-holding sectors. They include housing and pension saving funds, private securities, other public securities and other bank liabilities.
3/ It includes the monetary aggregate M4 held by non-residents (the difference between the monetary aggregate M4 and M3), foreign financing to the federal government, public institutions and enterprises, commercial banks' foreign liabilities, foreign financing to the non-financial private sector, deposits by agencies and non-monetary instruments held by the external sector.
4/ As defined by Banco de México's Law.
5/ It refers to the total portfolio of financial intermediaries, of the National Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit), and of the ISSSTE Housing Fund (*Fondo de la Vivienda del ISSSTE*, Fovissste), the issuance of domestic debt and external financing.
6/ It includes financing to the federal public sector, as well as financing to states and municipalities.
Source: Banco de México.

In the analyzed quarter, domestic sources of financial resources of the economy –measured by the aggregate of domestic financial assets F1– grew at a real annual rate of 3.6 percent, which compares to 3.2 percent in the previous quarter (Chart 182a). This greater growth rate resulted, in part, from higher resident holdings of term monetary instruments included in M2, instead of more liquid instruments (Chart 182b). In an environment of higher market interest rates, higher relative yields of term assets contributed to the above. Similarly, the favorable evolution of non-monetary instrument holdings, particularly retirement savings funds, also contributed to higher domestic sources (Chart 182a). This is attributed to a higher contribution by siefores (Investment Companies Specialized in Retirement Savings), reflecting the persistent dynamism of formal employment as well as capital gains in investment portfolios.

In contrast, the external sources of resources –that include monetary instruments held by non-residents, as well as residents' liabilities with the external sector- registered a 3.4 percent contraction in real annual terms in the reference quarter, which is a larger contraction than the 1.6 percent registered in the previous quarter (Chart 182c). This mainly derived from a lower investment in monetary instruments by non-residents –in particular government debt securities–, as well as lower indebtedness of the public sector in foreign currency.

Chart 182
Sources of Financial Resources [1]

a) Domestic Sources (F1) [2] Real annual change in percent	b) Monetary Aggregate M2 Real annual change in percent	c) External Sources Real annual change in percent and contribution to growth
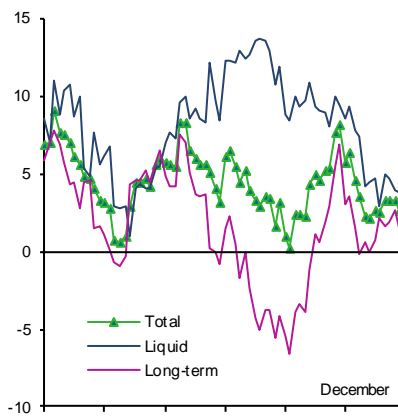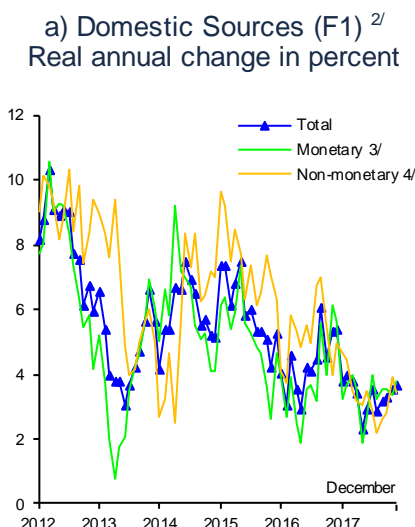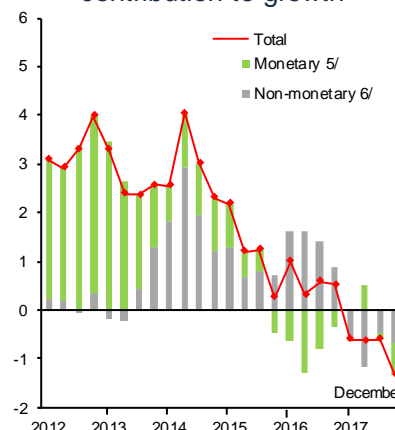
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variations.
2/ It corresponds to the aggregate of domestic financial assets F1, which includes the monetary aggregate M3 plus other instruments held by resident money-holding sectors, what are excluded from monetary aggregates.
3/ It refers to financial instruments included in the monetary aggregate M3, which is composed of M2 plus Federal Government securities, Banco de México's securities (BREMS) and IPAB securities held by resident money-holding sectors.
4/ It includes housing and retirement savings funds, private securities and other public securities and other bank liabilities.
5/ Total monetary instruments held by non-residents, which is equivalent to the difference between the monetary aggregate M4 and the monetary aggregate M3.
6/ It includes the external debt of the federal government, public entities and firms, and external PIDIREGAS, external liabilities from commercial banks, excluding non-residents' deposits, foreign financing to the non-financial private sector and other residents' liabilities in the external sector.
Source: Banco de México.

Regarding the use of financial resources of the economy, financing to the public sector declined in real annual terms, in response to the fiscal adjustment implemented by the Federal Government. The balance of international reserves contracted in real annual terms, which was the consequence of the fact that, unlike in previous years, Pemex did not sell dollars to Banco de México in 2017, which reflected the deterioration in the oil trade balance. In addition, unlike over the previous three years, the net flow of foreign exchange operations of Banco de México with the Federal Government in 2017 was negative.

In the fourth quarter of 2017 total financing to the non-financial private sector continued to expand at a moderate real annual rate (2.8 percent; Chart 183a). However, its components evolved with a certain heterogeneity. On the one hand, domestic financing to firms maintained relatively high rates (6.7 percent), derived from the dynamism of the domestic debt market, and the sustained expansion of commercial bank credit to larger firms (Chart 183b and Chart 184). The above largely reflects that these firms –that have a greater access to different sources of financing– have been substituting both external financing for domestic one, and lower liabilities with development banks for commercial banks' credit. This suggests a lower investment spending, in which development banks usually partake, and greater refinancing of liabilities, an activity usually served by commercial banks. In this respect, the Survey on General Conditions and Standards in the Banking Credit Market (EnBan) carried out by Banco de México shows that commercial banks' directors perceived that during 2017 large firms' demand for credit expanded, even though credit supply conditions in this segment tended to tighten.[51] In contrast,

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[51] For more detail, see the press release of the Survey on General Conditions and Standards in the Banking Credit Market during the quarter October – December 2017, available at the following link:

credit granted to small and medium-sized enterprises moderated substantially in 2017, both due to a smaller demand for credit and to tighter lending conditions. In this period, the costs of financing remained above those registered in 2016. This partly reflects the increases in Banco de México's target for the Overnight Interbank Interest Rate. In this respect, the impact tends to be greater among those that are funded at a variable rate and among the marginal credit users. The delinquency rates of credit portfolios to firms remained low and stable (Chart 185).

Chart 183
Financing to Non-financial Private Sector
Real annual change in percent
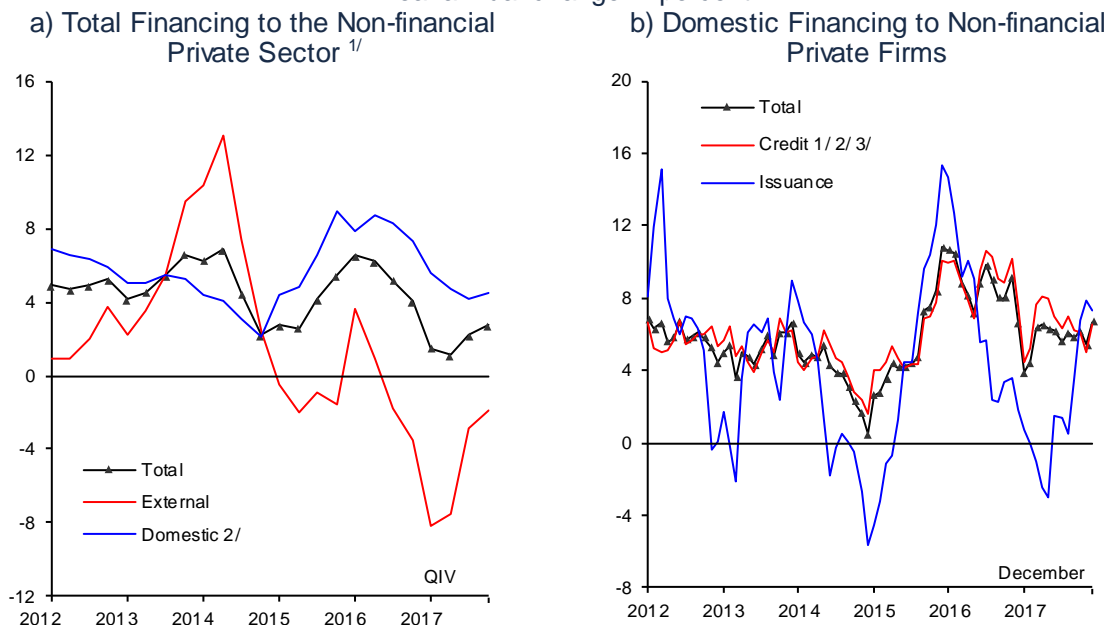
a) Total Financing to the Non-financial Private Sector [1/]

b) Domestic Financing to Non-financial Private Firms

1/ Real annual changes are calculated based on balances adjusted due to exchange rate variations.
2/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
3/ It refers to the performing and non-performing portfolios, and includes credit from commercial and development banks, as well as other non-bank financial intermediaries.
Source: Banco de México.

Credit to households continued growing at a moderate rate (2.5 percent; Chart 186a). Within it, the dynamism of housing credit has been decreasing since the fourth quarter of 2016, which largely reflects a lower demand for housing credit which has been observed since that quarter (Chart 186b). This would also reflect, to a lower degree, tighter supply conditions, which is consistent with the slight increase in long-term interest rates. Meanwhile, the corresponding delinquency rates remained low and stable (Chart 186c).

Chart 184
Domestic Financing to Non-financial Private Firms

a) Net Placement of Medium-term Securities [1]
MXN billion
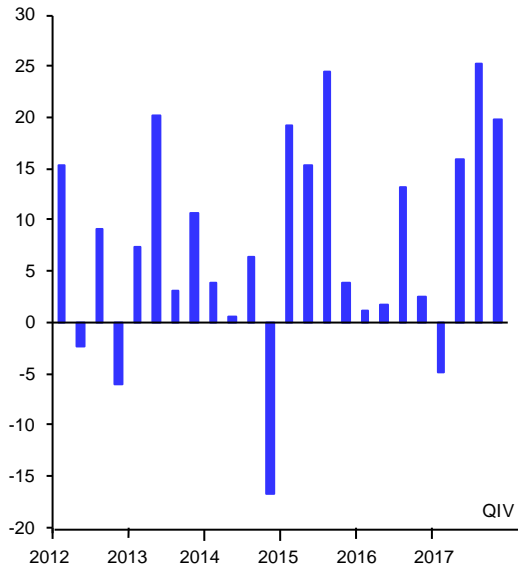
b) Performing Credit [2]
Real annual change in percent
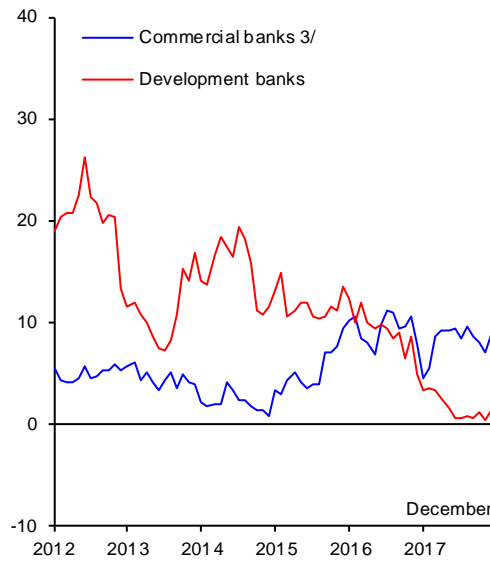
1/ Placements excluding amortizations (maturities and prepayments) in the quarter.
2/ Real annual changes are calculated based on the balance adjusted due to exchange rate variations.
3/ It includes Sofomes ER subsidiaries of bank institutions and financial groups. Data are adjusted so as not to be affected by the transfer of bridge loans.
Source: Banco de México.

Chart 185
Annual Interest Rates and Delinquency Rates of Non-financial Private Firms

a) Interest Rates of Private Securities
Quarterly average in percent

b) Interest Rates of New Credits [3]
Quarterly average in percent

c) Delinquency Rates
Percent

1/ Average weighted yield to maturity of issuances in circulation, with a term over 1 year, at the end of the month.
2/ Average weighted rate of private debt placements, at a term of up to 1 year, expressed in a 28-day curve. It only includes stock exchange certificates.
3/ It refers to the interest rate of new bank credits to non-financial private firms, weighted by the associated stock of the performing credit and for all credit terms requested.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

Finally, consumer credit has continued to decelerate across practically all its components (Chart 187a). This lower dynamism is in part associated to: i) the deceleration of labor share, ii) a lower demand for credit to acquire consumer durables, which strongly rebounded last year; and iii) higher costs of financing, especially in credit cards, although this type of financing has already been characteirzed by high interest rates. In line with the above, the EnBan results suggest that since late 2016 and during most of 2017 consumer credit supply conditions tightened, while demand for consumer credit lowered, particularly in the credit card segment. In this context, delinquency rates adjusted for write-offs somewhat deteriorated (Chart 187b and Chart 187c).

Chart 186
Credit to Households
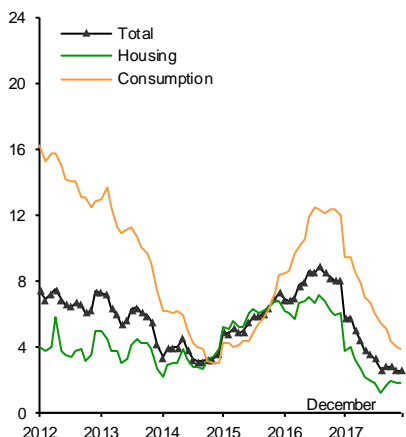
a) Total Credit [1/]
Real annual change in percent

b) Performing Housing Credit
Real annual change in percent
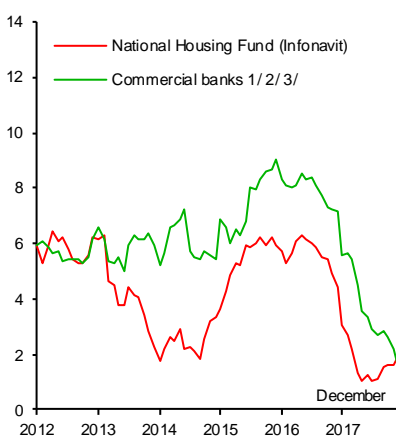
c) Annual Interest Rate of New Credits and Delinquency Rates of the Housing Credit
In percent
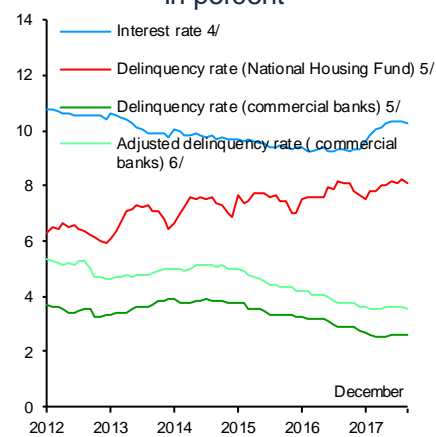
1/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
2/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
3/ Figures are adjusted in order to avoid distortions by the transfer and the reclassification of direct credit portfolio, by the transfer from the UDIS trust portfolio to the commercial banks' balance sheet and by the reclassification of direct credit portfolio to ADES program.
4/ The interest rate of new housing credits from commercial banks, weighted by the balance associated to the performing credit. It includes credit for acquisition of new and used housing.
5/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
6/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

Considering the above and given the possibility that tight financial conditions could persist and external financial resources could remain limited throughout 2018, it is key for the fiscal consolidation efforts that have been undertaken by the Federal Government to continue. This, in addition to strengthening the macroeconomic framework of Mexico, will extend the financial sector's ability to continue channeling resources to the private sector, even in an environment of tight financial conditions.

Chart 187
Commercial Bank Consumer Credit
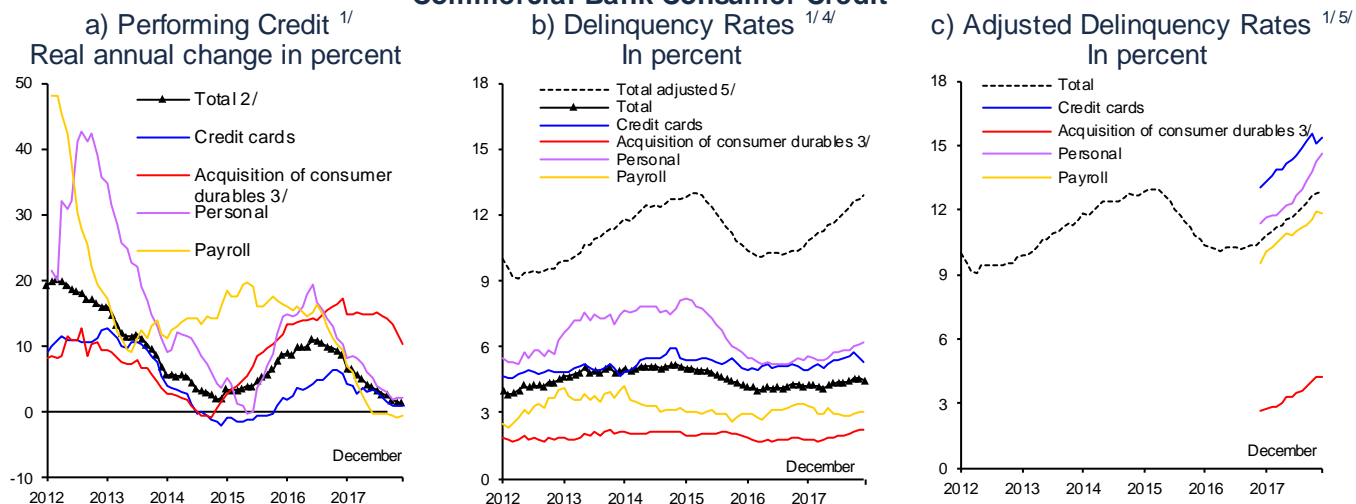
a) Performing Credit [1/] Real annual change in percent	b) Delinquency Rates [1/ 4/] In percent	c) Adjusted Delinquency Rates [1/ 5/] In percent

1/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
2/ It includes credit for payable leasing operations and other consumer credits.
3/ It includes auto loans and credit for acquisition of other movable properties.
4/ The delinquency rate is defined as the stock of non-performing loans divided by the stock of total loans.
5/ The adjusted delinquency rate is defined as the non-performing portfolio plus debt write-offs accumulated over the last 12 months divided by the total portfolio plus debt write-offs accumulated over the last 12 months.
Source: Banco de México.

2.2.3.2. Domestic Financial Assets

Total domestic financial assets, referred to as F, in accordance with the new statistics, is composed by the stock held by money-holding sectors (residents and non-residents) of the monetary instruments (M4), savings funds for housing and retirement, other debt instruments, and equity and hybrid instruments. [52] As detailed in Box 3, changes of the market value balance of this indicator seem to give signals of the future evolution of Mexico's economic activity, largely because market prices of stock-market shares and other instruments included in F consider the information of the expected evolution of the economy. In this context, this aggregate presented a relatively low dynamism in 2017, although its growth rate rebounded slightly over the last months of the year. Indeed, between the third and the fourth quarters of 2017, its real annual rate went up from 2.4 to 3.5 percent (Chart 188). In accordance with the statistical evidence, changes in this aggregate reach a maximum, positive, significant correlation with those of the economic activity one quarter later. That is, changes in this aggregate tend to precede economic activity. Thus, its recent acceleration could indicate a possible higher growth rate of the economy in the future.

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[52] As defined in the press release on Monetary Aggregates and Financial Activity in December 2017, the aggregate F represents the broadest measure of financial instruments issued in Mexico held by money-holding sectors in the broad sense. For more details, consult the referred press release and the methodological documents that refer to the redefinition of monetary aggregates and the construction of domestic financial assets, available on the following link:
http://www.banxico.org.mx/informacion-para-la-prensa/comunicados/sector-financiero/agregados-monetarios/indexpage.html.

Chart 188
Domestic Financial Assets (F) [1]
Real annual change in percent [p]
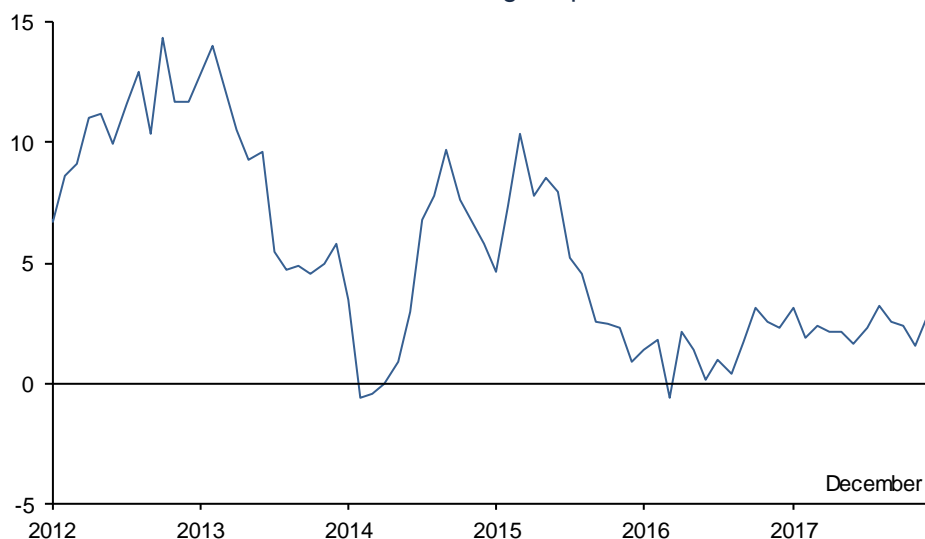
p/ Preliminary figures.
1/ It refers to total aggregates of domestic financial assets held by residents and non-residents, F2 and FNR. It includes the monetary aggregate M4 plus balances held by money-holding sectors in broad sense: securities issued by private firms, states and municipalities, entities of direct and indirect budgetary control, state and Fonadin (National Infrastructure Fund) productive companies; housing and retirement savings funds; other bank liabilities; and equity and hybrid instruments.
Source: Banco de México.

2.2.4.   Slackness Conditions of the Economy

To conduct monetary policy, it is essential to have a proper reading of the conditions of slack in the economy and to assess the phase of the economic cycle it is going through. This allows the timely identification of the possible presence of inflation pressures derived from aggregate demand and from input markets, as well as the ability to assimilate possible shocks on inflation.

It should be noted that the Mexican economy has been going through an atypical economic cycle for several years, caused by the impact of unprecedented external economic conditions, as well as by the type of shocks that have affected it. This has made the assessment of cyclical conditions more difficult, particularly the assessment of slack conditions in the economy and their role in price formation. Thus, to have a comprehensive reading of the cyclical position of the Mexican economy that informs the monetary policy decision-making process, it has been decided that, from this Report onward, an additional set of slack indicators should be included as part of the monitoring of Mexico's economic environment, complementing those that have been previously and periodically reported. In particular, four slack indices are presented, based on the respective indicators of consumption, economic activity and demand, labor market conditions and demand in the loanable funds market, which derive from a selection of economic variables that presumably are associated with slack conditions in the goods' and inputs' markets and have predictive power on inflation (see Box 11). The results of this analysis suggest that slack conditions have been tightening, especially in the labor market and in relation to consumption, although in general they seem to have started to relent moderately.

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Box 11
Slack Indicators to Identify Inflation Pressures

1. Introduction

To make the assessment of the degree of slackness in the economy more comprehensive and solid, it can incorporate a comprehensive approach that considers the information contained in a broad range of indicators. In principle, an indicator is assumed to show slack when its observed level is below its potential level (defined as the level consistent with stable inflation), thus indicating a contribution to a lower inflation. In contrast, when the observed level of the indicator is above its potential level, it signals inflation pressures.[1]

In this context, in order to have a better understanding of slack conditions in the Mexican economy, this Box presents the results of a statistical exercise that estimates slack conditions based on a set of variables that have shown to have predictive power on the inflation evolution, and that are related to consumption, economic activity and aggregate demand, the labor market and demand conditions in the loanable funds market. Although this exercise indicates that evaluating slack requires following up on a number of indicators, the estimated slack indices are introduced using a Principal Components method in order to synthesize the information (a monthly aggregate, a quarterly aggregate and four aggregates, one for each one of the indicator groupings).

2. Methodology and Estimates

The exercise was carried out in several steps, with the objective of reducing a broad initial set of indicators that could contain information on slackness conditions into a more limited set of variables that would outperform the rest in terms of its predictive power on inflation.[2]

The first step to limit the number of indicators consisted in realizing Granger causality tests between each indicator of slack and inflation. Thus, only those indicators that Granger-caused inflation remained. In the second stage, a Hybrid Phillips Curve (HPC) was estimated for each

indicator that passed the first stage. The specification of each HPC was the following:[3]

$$\pi_t = \beta(L)H_{t-1} + \gamma\pi_{t-1}^{exp} + \rho(L)\pi_{t-1} + \tau(L)\Delta s_{t-1}$$
$$+\delta(L)\pi_{t-1}^{imp} + \boldsymbol{\theta}'\boldsymbol{Z_t} + \varepsilon_t. \qquad (1)$$

Where:
π_t = headline inflation,
H_t = one of the measures of slack,
π_t^{exp} = measure of inflation expectations,[4]
Δs_t = depreciation of the nominal MXN/USD exchange rate,
π_t^{imp} = measure of external inflation (e.g. imports prices, oil prices and inflation in the U.S.),
$\boldsymbol{Z_t}$ = vector of internal controls (e.g. inflation in telecommunications, electricity and gasoline prices), and
ε_t = error term.

Parameters γ, $\boldsymbol{\theta}$ and lag polynomials $\beta(L), \tau(L), \rho(L)$ and $\delta(L)$ were estimated with a procedure of minimum least squares.[5] Upon estimating this model, it was verified that the coefficients $\beta(L)$ associated to the measure of slack were statistically significant and had the correct sign in accordance with the economic theory. In this way, those indicators for which the HPC model met these two requirements were chosen, and the rest were dismissed. In this way, a more limited number of indicators was obtained.

In the third stage, the predictive power of all models that passed the second stage on inflation was evaluated. To do that, the Model Confidence Set (MCS) procedure was used, which, via an iterative process discards those models whose predictive power is statistically lower relative to the rest, to obtain an irreducible set of models.[6] To implement this procedure, first, recursive inflation forecasts were generated for different horizons, for each one of the models that were chosen at the second stage. Subsequently, a hypothesis test was realized, seeking to identify from a statistical point of view the differences among the forecasts generated for each HPC model. In particular, the null hypothesis states that there is no difference between the forecasts derived from a specific

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[1] To standardize the reading of slack, indicators such as the unemployment gap are multiplied by (-1), so that, as with other indicators, a positive gap indicates upward inflation pressures.

[2] All indicators were analyzed as a gap with respect to the potential level. In particular, potential levels were calculated using a Hodrick-Prescott filter with tail corrections and using a historic average to determine the correction parameter. For the specific case of the output gap, see Banco de México (2009) and for the estimation of NAIRU, see Banco de México (2016). Given that some indicators are available on a monthly basis and some on a quarterly basis, the analysis of each frequency was carried out separately.

[3] Equation (1) can be considered a hybrid specification of the Phillips curve that has different versions; the curve with expectations, the original Phillips curve, and Gordon triangle model (1990). In all estimations, lagged values of inflation expectations were used, see Mavroeidis et. al. (2014). All data were seasonally adjusted.

[4] Both the expectations from the Survey of Professional Forecasters conducted by Banco de México and those from the Citibanamex survey were tested. The results were not significantly different.

[5] For each considered independent variable, equation (1) was estimated following the procedure from the general to the specific, using the Schwarz information criterion to determine the number of lags and independent variables, π_t^{imp} and $\boldsymbol{Z_t}$, to be included in each specification. In particular, a maximum of 6 lags was considered for monthly data and of 8 lags for quarterly data. In all tests, a 90% confidence level was used.

[6] The MCS procedure has a series of appropriate characteristics. (i) It can be estimated in rolling-window samples, which guarantees that the results are robust at different periods of analysis. (ii) It allows to obtain a superior set of models when there is no single model that is dominant in terms of predictive power. (iii) Unlike alternative tests, it is not necessary to choose a reference model. See Hansen et. al. (2011).

</div>

HPC model and an average forecast calculated using the rest of HPC models. The models for which the null hypothesis was rejected were ruled out and those models, for which the null hypotheses was not rejected, remained. In this way, a superior set of models was obtained (MCS1). At the end of the iterative process, all models that are part of MCS1 had, from a statistical point of view, the same ability to predict inflation.[7]

To have a better understanding of slack conditions, the indicators contained in MCS1 were grouped in sets related to: i) consumption, ii) economic activity and aggregate demand, iii) labor market and iv) demand conditions in the loanable funds market. For each group, the MCS procedure was applied individually again. The procedure was modified to evaluate the predictive power of each indicator with respect to each element in the respective group.[8] That is, within each group the hypothesis test was applied again for each model and those in which the null hypothesis was rejected were eliminated. This resulted in an MCS by group. That is, within each group only indicators with the same predictive power on inflation, from a statistical point of view, remained. Finally, to further reduce the final set of indicators, in each group only those that had the predictive power for all analyzed forecast horizons where chosen.

3. Results

At the beginning, 38 indicators for the monthly frequency and 38 for the quarterly frequency were considered. After applying the tests of the three stages described above, 11 indicators of monthly frequency and 12 indicators of quarterly frequency, respectively, were obtained.[9] Table 1 enumerates, by group and by frequency, the indicators with the greatest predictive power on inflation in this exercise.[10] There are a total of 23 slack indicators, 20 of which are unique and three appear both with a quarterly and a monthly frequency.

4. Slack Indices

As can be seen, for each frequency, the statistical exercise selected over a dozen variables with predictive power on inflation, which suggests that the reading of slack conditions in an economy has a multidimensional

character and should adopt a comprehensive approach that considers indicators of consumption, economic activity and aggregate demand, labor market and demand conditions in the loanable funds market. To synthesize the information provided by these indicators, a number of slack indices were estimated via the Principal Components method in order to report on the presence or the absence of inflation pressures. Specifically, the first Principal Component was used as a slack index, as it summarizes the information contained in the selected set of slack indicators.[11]

In particular, a slack indicator was estimated for the full set of monthly frequency indicators and another one for the quarterly frequency indicators (see Section 2.2.4.1). In addition, based on chosen indicators, slack indices were estimated for each group of variables related to consumption, economic activity and aggregate demand, labor market, and demand conditions in the loanable funds market.

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[7] To implement the MCS procedure, a quadratic loss function was chosen (the root mean square error was calculated) and the statistic $T_{max,\mathcal{M}}$ was used, which compares the predictive power of each slack indicator with the average predictive power of the rest of indicators. See Hansen, et. al. (2011) for more details.

[8] In the second implementation of MCS, statistic $T_{R,\mathcal{M}}$ was used, which, for example, compares the predictive power of each consumption indicator contained in MCS1 with the rest of consumption indicators, one at a time. See Hansen, et. al. (2011) for further details.

[9] Monthly frequency forecasts correspond to monthly inflation, while quarterly frequency forecasts refer to average inflation in the quarter.

[10] 25 monthly indicators and 28 quarterly indicators satisfied Granger causality tests at stage 1; out of which 19 monthly and 25 quarterly indicators met the selection criteria of stage 2. For stage 3, the MCS

procedure for monthly indicators was based on a moving average of 48 observations in a sample that covers the period from 2007M7 to 2017M9, while for quarterly indicators it was based on a moving window of 36 observations in a sample that covers the period from 2003Q1 to 2017Q3. The predictive power of dynamic forecasts models was evaluated using the observed values of independent variables (pseudo out-of-sample forecast) for 6- and 12-month horizons in the case of monthly indicators, and of 1-, 2- and 4-quarter horizons in the case of quarterly ones. This stage selected an MCS set of 19 monthly and 22 quarterly indicators, which was limited to 11 and 12, respectively, when the MCS procedure and the predictive capacity criterion was applied again in all horizons.

[11] For more details, see Johnson and Wichtern (2012).

Table 1
Selection of Slack Indicators

Selection	
20 slackness indicators	Frequency
Index of total ANTAD sales	M
Indicator of private consumption in the domestic market:	
- Total	M
- Goods (domestic)	M
- Goods and services (domestic)	M, Q
- Services	M
Proportion of vehicles (financed units)	M
Private consumption	Q
Manufacturing GDP excluding oil **	Q
GDP excluding oil industry *	Q
Aggregate demand	Q
Domestic demand	M
	M
Unit labor costs in the manufacturing industry	
Rate of unemployment (NAIRU)	M, Q
Rate of unoccupied hours	M, Q
Financing:	
- Total to non-financial private sector	Q
- Total to firms	Q
- Domestic to households	Q
Domestic financial asset F1	M
Monetary aggregates:	
- M1	Q
- M2	Q

Note: M and T refer to the measurements at monthly and quarterly frequency, respectively. * GDP excluding oil and gas extraction, and mining-related services, as well as oil and carbon derivatives. ** Manufacturing GDP excluding oil and carbon derivatives. The indicators are listed by name, although in all cases the estimations refer to each variable's gap with respect to its estimated potential level. The variables of consumption, economic activity and aggregate demand, labor market and demand conditions in the loanable funds market are distinguished by blue, red, grey and green colors, respectively.

Although the estimated slack indices facilitate the reading of information contained in a broad number of indicators, it is important to keep in mind that all econometric procedures are subject to a certain degree of statistical uncertainty. Therefore, the reading of slack conditions in an economy should not depend on a sole indicator or index, nor on its absolute value. On the contrary, it should maintain a comprehensive approach, based on a broad set of variables that yield information on the phase of the economic cycle. Likewise, it should consider that its estimation is subject to uncertainty.

3. Final Remarks

This Box presented an econometric exercise that allows the identification, based on a broad range of economic indicators, of those with a greater predictive power on the future evolution of inflation. This allows a broader reading of slack conditions in Mexican economy. Similarly, based on these indicators, a number of slack indices were estimated via the Principal Components method to synthesize the findings and, thus, to facilitate the reading

of their role in the price index dynamics. The results of this analysis suggest that slack conditions have been tightening, although, at the margin, these conditions could be moderately receding.

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2.2.4.1. Slackness Conditions of the Economy

The estimate of the GDP gap that is traditionally presented in this Report remained close to zero, suggesting that the economy is currently operating close to its potential (Chart 189a). The estimate of the GDP gap that excludes the oil sector points to tighter conditions, given that it remained on the positive side in 2017, although at lower levels than in 2016 and not significantly different from zero (Chart 189b).[53] The latter is consistent with the analysis of the phase of the economic cycle of the Mexican economy that is based on a larger number of indicators, which suggests that, although in late 2015 and 2016 slack conditions were tightening and marked positive levels, over the last months these have declined slightly, despite remaining relatively tight. In particular, the more aggregated indices suggest a lack of slack conditions, although at the margin these have stopped tightening and could be relaxing (Chart 190a and Chart 190b). Indeed, although slack indicators of consumption and the labor market remain tight (Chart 191a and Chart 191b), those derived from more aggregate indicators of activity and demand have started to approach zero again, and those derived from the indicators of the demand conditions in the loanable funds market have started to turn negative again (Chart 191c and Chart 191d). On balance, although during 2017 slack conditions in the economy were tightening, which could be affecting the pace at which core inflation is declining, at the margin these conditions seem to have started to revert moderately, except for the labor market.

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[53] The GDP gap excluding the oil sector allows to better identify the balance of aggregate demand and supply of the economy, as it is based on the consideration that the loss of production capacity in the oil industry, which has prevailed for a number of years, is essentially a supply side issue.

Chart 189
Output Gap Estimate [1]
Percentage of potential output, s. a.
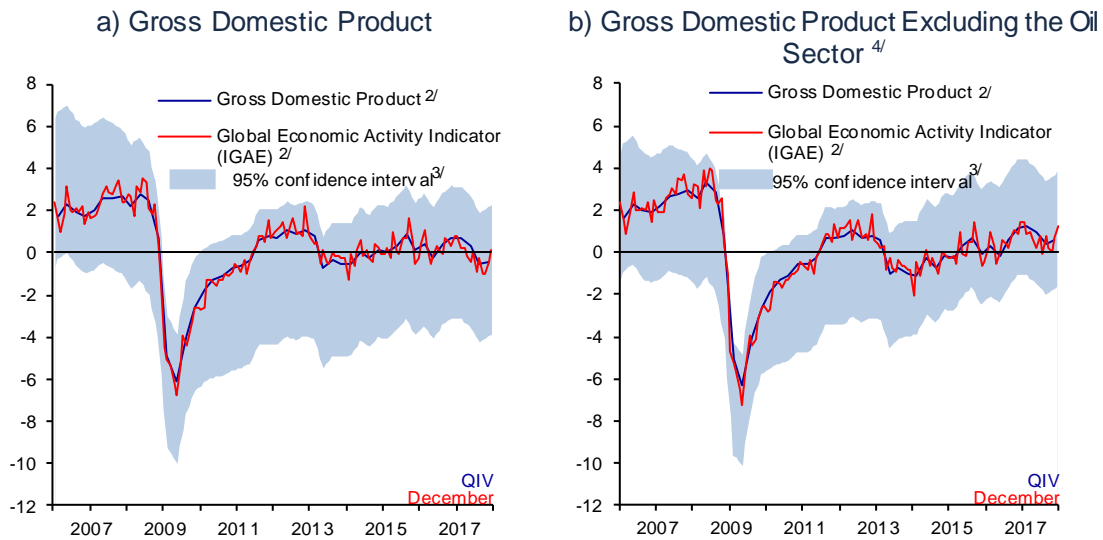
a) Gross Domestic Product

- Gross Domestic Product [2]
- Global Economic Activity Indicator (IGAE) [2]
- 95% confidence interval [3]

b) Gross Domestic Product Excluding the Oil Sector [4]

- Gross Domestic Product [2]
- Global Economic Activity Indicator (IGAE) [2]
- 95% confidence interval [3]

s. a. / Estimated with seasonally adjusted data.
1/ Estimated using the Hodrick-Prescott (HP) filter with tail correction; see Banco de México Inflation Report, April- June 2009, p.69.
2/ GDP figures as of the fourth quarter of 2017, IGAE figures as of December 2017.
3/ Confidence interval of the output gap calculated with an unobserved components' method.
4/ GDP excluding oil and gas extraction, excluding mining-related services and those derived from oil and carbon.
Source: Prepared by Banco de México with data from INEGI.

Chart 190
First Principal Component by Frequency of the Indicators [1]
Percent

a) Monthly
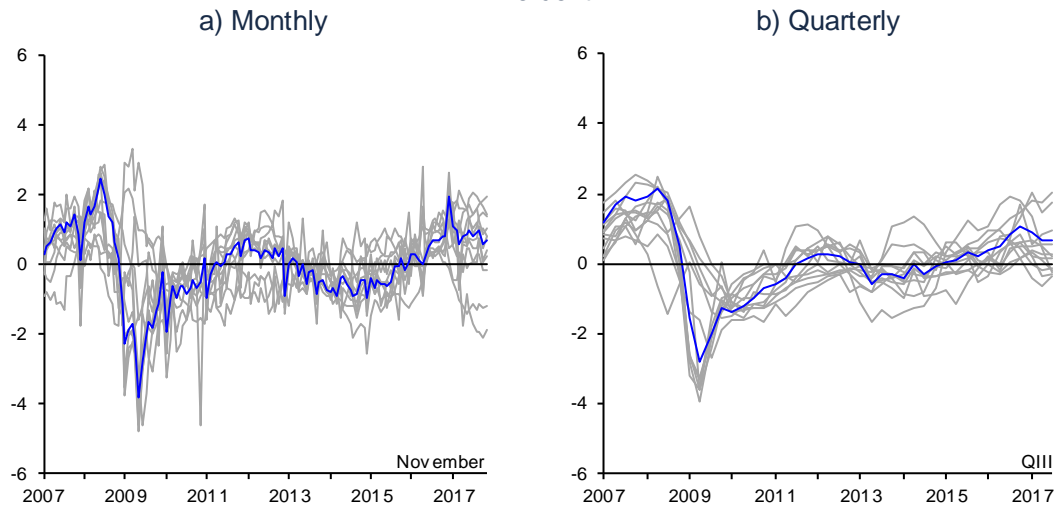
b) Quarterly

1/ The constructed indices are based on the MCS methodology; see Box 4. Monthly and quarterly slack indices are based on the first principal component of the sets comprising 11 and 12 indicators, respectively. The first component represents 51% and 58% of the joint variation of monthly and quarterly indicators, respectively. Grey lines correspond to individual slack indicators used in the principal components analysis.
Source: Estimated with data from INEGI and Banco de México.

Chart 191
First Principal Component by Group of Indicators [1]
Percent

a) Consumption

b) Labor Market

c) Economic Activity and Aggregate Demand

d) Demand Conditions in the Loanable Funds Market
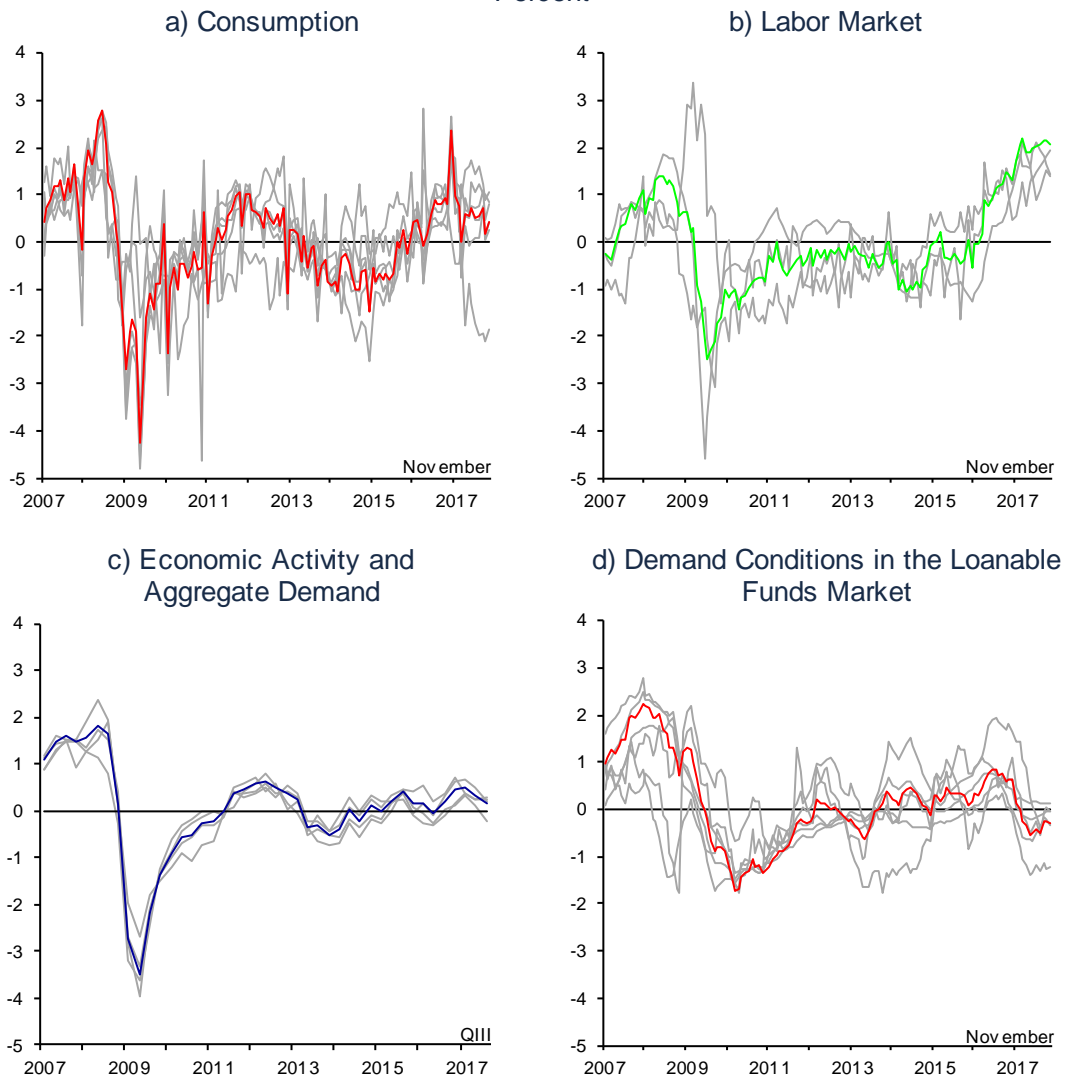
1/ The constructed indices are based on the MCS methodology; see Box 4. The slack indices related to consumption, labor market, economic activity and financial conditions are based on the first principal component of sets comprising 6, 3, 4, and 6 indicators, respectively. The first principal component represents 63%, 55%, 95% and 57% of the joint variation of the indicators of consumption, labor market, economic activity and aggregate demand, and the demand conditions in the loanable funds market, in the same order. The indices are based on monthly indicators, except for that of economic activity and aggregate demand, which uses quarterly indicators. Grey lines correspond to individual slack indicators used in the principal component analysis.
Source: Estimated with data from INEGI and Banco de México.

3.   Recent Evolution of Inflation

3.1.   Inflation

In 2017, inflation was negatively influenced by a series of shocks of considerable magnitude, both external and domestic, pushing it to close the year at levels not observed since 2001. These shocks occurred in an environment in which, given the cyclical conditions of the economy, their assimilation could turn more difficult. This underscores the importance of the monetary policy to prevent these shocks from generating second-round effects and from affecting medium- and long-term inflation expectations. In particular, since the beginning of 2017 inflation was affected by the depreciation of the Mexican peso and its increased volatility. This resulted from the uncertainty over the stance of the new U.S. government in its bilateral relation with Mexico, as well as of higher energy prices, which derived from the liberalization process, which was the case of gasoline and LP gas. It should be noted that LP gas price increments not only were related to cost pressures, but also to the aspects of the market structure.[54] In addition, over the first half of the year, higher transport fares were registered across different cities of Mexico, along with higher prices of some agricultural products. The monetary policy stance has been adjusting to allow this change in relative prices, derived from these shocks, to take place in an orderly manner, without generating second-round effects on the price formation process of the economy. Thus, starting from September 2017 inflation started to reach a certain turning point to the downside, in part thanks to the monetary policy actions that have been adopted so far.

However, over the last few months of last year a series of additional shocks gave a new drive to inflation. Average annual headline inflation rose from 6.48 to 6.59 percent between the third and the fourth quarters of 2017, and marked 6.77 percent in December. Some of these shocks were: higher energy prices, particularly LP gas, and higher prices of certain fruits and vegetables, which were associated to weather factors; a further depreciation of the Mexican peso and an increase in its volatility, derived, among other factors, from the uncertainty associated with the NAFTA renegotiations, with the monetary policy normalization in the U.S., with the approval of the fiscal plan in the U.S., with a number of elements related to the electoral process in Mexico; and the short-term effect of the change in the calendar of the minimum wage increase, effective in December rather than in January. A great deal of the increase in headline inflation at the end of 2017 is explained by the dynamics of annual non-core inflation, which shifted from an average of 11.51 to 12.00 percent between the referred quarters, and marked 12.62 percent in December 2017. In contrast, annual core inflation presented a slight downward trend, marked on average 4.91 and 4.85 percent in the referred quarters, respectively, and 4.87 percent in December (Table 2). As presented in Section 2.2.4, different indicators on the current phase of the economic cycle of the Mexican economy, especially those related to the labor market and consumption, show that slack conditions in the economy have remained relatively tight. This could make the assimilation of shocks that have affected it difficult, which would influence the pace of the core inflation decline.

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[54] See press release FECE-008-2018 of the Federal Economic Competition Commission (FECC): "FECC investigates possible absolute monopolistic practices in the LP gas market", issued on February 22, 2018.

Table 7
Consumer Price Index, Main Components and Trimmed Mean Indicators
Annual change in percent

	2016	2017				2017	2018	
	IV	I	II	III	IV	December	January	1F February
CPI	**3.24**	**4.98**	**6.10**	**6.48**	**6.59**	**6.77**	**5.55**	**5.45**
Core	**3.28**	**4.19**	**4.78**	**4.91**	**4.85**	**4.87**	**4.56**	**4.32**
Merchandise	**3.98**	**5.33**	**6.22**	**6.37**	**6.11**	**6.17**	**5.78**	**5.29**
Food, beverages and tobacco	4.26	5.93	6.82	7.29	6.80	6.82	6.50	6.17
Non-food merchandise	3.75	4.83	5.73	5.60	5.53	5.62	5.17	4.56
Services	**2.68**	**3.23**	**3.55**	**3.68**	**3.77**	**3.76**	**3.52**	**3.49**
Housing	2.40	2.52	2.56	2.61	2.66	2.65	2.62	2.57
Education (tuitions)	4.26	4.37	4.39	4.56	4.74	4.74	4.69	4.80
Other services	2.50	3.62	4.34	4.53	4.63	4.63	4.09	4.04
Non-core	**3.14**	**7.38**	**10.31**	**11.51**	**12.00**	**12.62**	**8.44**	**8.77**
Agriculture	**4.98**	**-0.20**	**6.39**	**12.07**	**8.99**	**9.75**	**10.76**	**10.45**
Fruits and vegetables	8.32	-6.88	9.60	21.80	15.59	18.60	20.65	17.95
Livestock	3.09	4.02	4.54	6.50	5.06	4.50	5.14	6.33
Energy and government approved fares	**2.00**	**12.28**	**12.90**	**11.14**	**13.92**	**14.44**	**7.10**	**7.82**
Energy	1.75	16.85	15.72	13.68	17.03	17.69	7.00	8.14
Government approved fares	2.48	3.91	7.99	6.82	8.20	8.36	7.31	7.15
Trimmed mean indicator [1]								
CPI	3.20	4.19	4.60	4.61	4.69	4.71	4.39	4.29
Core	3.27	4.00	4.39	4.50	4.48	4.46	4.20	4.01

[1] Prepared by Banco de México with data from INEGI.
Source: Banco de México and INEGI.

Chart 192
Consumer Price Index
Annual change in percent

Source: Banco de México and INEGI.

<div style="border:1px solid">
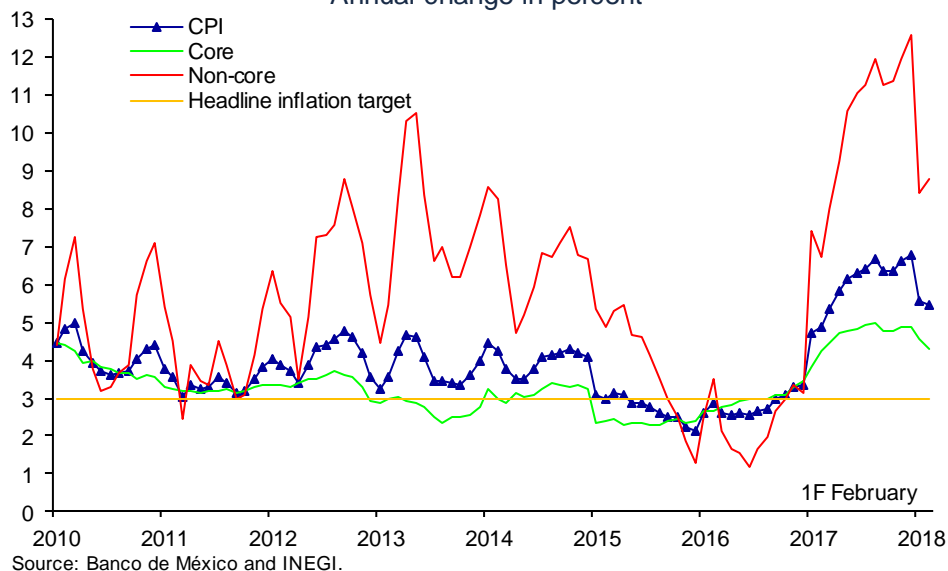
Box 12
Fundamental Core Inflation

1. Estimation of Fundamental Core Inflation

This Box applies a methodology similar to that used by the European Central Bank (ECB) to calculate the price index that is even closer associated to the economic cycle than the core index. This is done by incorporating exclusively the prices of goods and services with the changes that have a positive and statistically significant relation to slack conditions in the economy.[1] The slackness indicator used for this analysis is the one presented in Box 3 of this Report and that consists of the first main component of 11 monthly slack series. Using this measure of slackness, a price indicator is built, which has a closer relation to changes in the economic activity than core inflation. This inflation measure corresponds to the one that is called in the ECB as "*supercore*" inflation and to which Banco de México refers as Fundamental Core Inflation.

Particularly, this Box analyzes the effect of changes in the slack conditions of economic activity on price adjustments of each item of the core component. This is done to construct an inflation measure that exclusively includes the items of core inflation that have a positive and statistically significant relation with slack conditions, and that, therefore, has a stronger relation to fluctuations in economic activity, and thus clearly signals a change in the inflation trend as a reflection of slack conditions in the economy. However, it should be pointed out that this indicator not only responds to changes in the cyclical conditions of the economy, but is also affected by other shocks on the inflation process, such as the exchange rate adjustments, adjustments in input prices and other supply shocks.

The main feature of this price index is that it is more sensitive to the phase of the economic cycle than core inflation, as it only includes goods and services that have a positive and statistically significant relation with adjustments in slackness levels of the economy. Therefore, its comparison with core inflation allows to evaluate more accurately the consequences of the said cycle on inflation.

To build Fundamental Core Inflation, the following regression is estimated for each item i of the core index for the period from January 2007 to November 2017:[2]

$$\pi_{i,t} = \alpha + \beta_{i,1}\pi_{i,t-1} + \beta_{i,2}E[\pi_{t+12}^{core}] + \beta_{i,3}TC_t + \beta_{i,4}Slack_t + \beta_{i,5}PComm_t + \epsilon_{i,t}$$

where:

$\pi_{i,t}$: is the annual change of the price index of item i in the period t,

$E[\pi_t^{core}]$: are 12-month core inflation expectations from Banco de México's Survey among Private Sector Specialists,

TC_t: is the annual change of the exchange rate in period t,

$PComm_t$: is the annual change of the commodities' price index in period t, and

$Slack_t$: is the first main component of 11 slack measures referred in period t.

The choice of items for Fundamental Core Inflation is based on the results of these regression. In particular, the index is built exclusively using goods and services, in which the coefficient $\beta_{i,4}$ is positive and statistically significant, with a confidence level of 95 percent. That is, it only includes the items with price changes that have a positive and statistically significant relation with slack conditions in the economy. It should be noted that these price changes are also affected by exchange rate fluctuations and input prices fluctuations.

2. Results

Considering the results of the regressions, it is obtained that the indicator of Fundamental Core Inflation includes 45 items of core inflation, with a weight of 38 percent within core inflation and 29 percent of headline inflation.[3] Items of Fundamental Core Inflation are listed in Table 1.

Chart 1 shows that shifts in Fundamental Core Inflation are related to fluctuations of the slackness indicator. In particular, the decline in Fundamental Core Inflation is associated with conditions of higher slackness and vice versa. Thus, in mid-2017 Fundamental Core Inflation attained the highest levels since June 2009, which reflects, in addition to supply factors, the absence of slack in the economy. Furthermore, changes in the slackness measurement appear to anticipate those in Fundamental Core Inflation, presenting a maximum correlation of 0.8 percent with a 10-month lag period.[4]

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[1] European Central Bank. Monthly Bulletin, September 2014.
[2] This analysis period is chosen due to the availability of slack series of the economic activity described in Box 3.
[3] The respective weights in the ECB indicator are 45 and 32 percent, respectively.

[4] Granger causality tests were carried out between the indicator of Fundamental Core Inflation and the slackness indicator. The results indicate that the causality relation goes from the slack indicator towards Fundamental Core Inflation and not vice versa.

</div>

Chart 1
Fundamental Core Inflation and Main Component of 11 Slackness Series
Annual change in percent and figures in percent

1F February
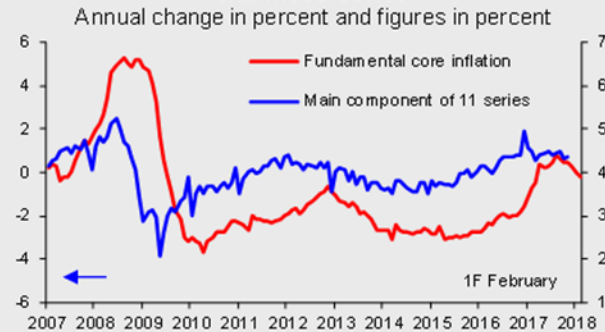
Source: Own estimates with data from Banco de México and INEGI.

It should be noted that the recent decline in Fundamental Core Inflation seems to be related to the fact that some components of the quarterly slackness indicator estimated in Box 3 appear to be reverting towards zero (Chart 2).

Chart 2
Fundamental Core Inflation and Main Quarterly Component of 12 Slackness Series
Annual change in percent and figures in percent

1F February
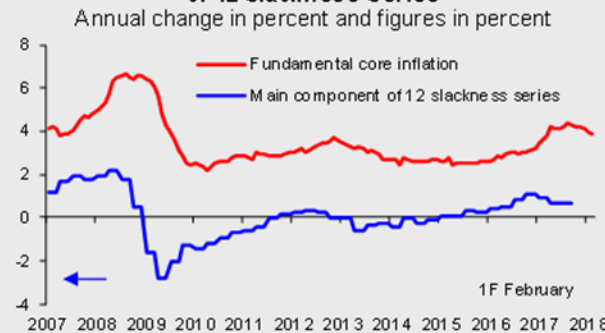
Source: Own estimates with data from Banco de México and INEGI.

This result seems to indicate, at the margin, that the tightening of the cyclical phase of the economy has started to cede, which could be congruent with the core inflation decline.

Table 1
Selected Items to Build Fundamental Core Inflation

Item	Weight in core inflation Data in percent
Sliced bread	0.25
Tarts and cakes in bulk	0.06
Soup noodle	0.16
Wheat flour tortillas	0.12
Wheat flour	0.04
Rice	0.19
Ham	0.25
Pasteurized and fresh milk	1.85
Powdered milk	0.14
Evaporated, condensed milk and mat.	0.08
Fresh cheese	0.29
Oaxaca cheese and string cheese	0.24
Manchego cheese or Chihuahua cheese	0.11
American cheese	0.03
Edible vegetable oils and fats	0.32
Canned beans	0.07
Canned vegetables	0.08
Other canned fruits	0.03
Bottled water	0.52
Mayonaise and mustard	0.08
Concentrated chicken and salt broth	0.06
Other seasonings	0.03
Potato chips	0.10
Other cooked foods	1.22
Roasted chicken	0.50
Other liquors	0.07
Housing rent	4.37
Own housing	18.27
Mattresses	0.21
Fans	0.07
Candles	0.06
Softeners and cleaning products	0.67
Dietary products	0.07
Medical care during childbirth	0.17
Haircuts	0.54
Toilet paper and disposable tissues	0.76
Lubricating oils	0.12
Batteries	0.04
University	2.30
Elementary school	1.20
Secondary school	0.86
Preschool	0.48
Tourism packages	0.70
Newspapers	0.16
Magazines	0.05
Total	37.96

Source: Own estimates with data from Banco de México and INEGI.

3.   Final Remarks

This Box displayed a measurement of prices that closely responds to the main changes in slack conditions in the economic activity. In particular, to construct this price subindex, which was denominated Fundamental Core Inflation, only core inflation items with a positive and statistically significant relation with the economic activity were considered. The results suggest that changes in economic activity tend to precede price adjustments, in particular those of Fundamental Core Inflation. This indicator will continue to be used to complement Banco de México's inflation analysis on a regular basis.

References

European Central Bank. Monthly Bulletin, September 2014.

As expected, in January 2018, annual headline inflation dropped significantly, derived from the arithmetic effect associated with the fact that in 2018 energy price increments were not characterized by the same magnitude as those in early 2017. Similarly, it derived from a decline in core inflation, which reflects the fading of indirect effects of energy price increments on merchandise and services and a certain change of trend at the end of 2017. In January, annual headline inflation decreased to 5.55 percent, while annual core inflation attained 4.56 percent and non-core inflation, 8.44 percent. In the first fortnight of February, annual headline inflation reached 5.45 percent, while core and non-core inflation marked 4.32 and 8.77 percent, respectively. Although the inflation decline in early 2018 was important, it was limited because the price increments of some components of the non-core index, that had been observed since the end of the previous year, persisted. In particular, this subindex continued to be negatively affected in January, as high price increments of LP gas and gasoline prevailed. In addition to that, the price increases in some fruits and vegetables, which had been registered over the previous months, did not dissipate fully (Table 7 and Chart 192).

To illustrate in greater detail the evolution of headline and core inflation both at the margin and in terms of their trends, below some indicators providing additional information are analyzed.

In the first place, the proportion of the headline and core CPI baskets is analyzed, which presents monthly (seasonally adjusted and annualized) price changes that are grouped into certain intervals. The defined intervals are: i) items with a price change below 2 percent; ii) between 2 and 3 percent, iii) greater than 3 and up to 4 percent; and iv) over 4 percent. In the same vein, the percentage of these baskets is presented in two additional categories: the one with monthly price changes smaller or equal to 3 percent, and the one with monthly price changes over 3 percent (Chart 193). The percentage of the CPI basket and of the core index with price increases below 3 percent has tended to increase over the recent months (the blue and green areas, Chart 193). In particular, the share of the basket of the headline index with monthly annualized price changes below or equal to 3 percent (the area below the yellow line) was 41 percent in the third quarter of 2017, 45 percent in the fourth one, and marked 43 percent in the first fortnight of February 2018. For the core index, the respective shares were 43, 46 and 46 percent.

Chart 193
Percentage of CPI basket according to Intervals of Monthly Annualized Increment, s. a. [1/]
Percent

a) CPI

Over 4%
Greater than 3% and up to 4%
Between 2% and 3%
Below 2%
Below or equal to 3%

1F February

b) Core

Over 4%
Greater than 3% and up to 4%
Between 2% and 3%
Below 2%
Below or equal to 3%

1F February
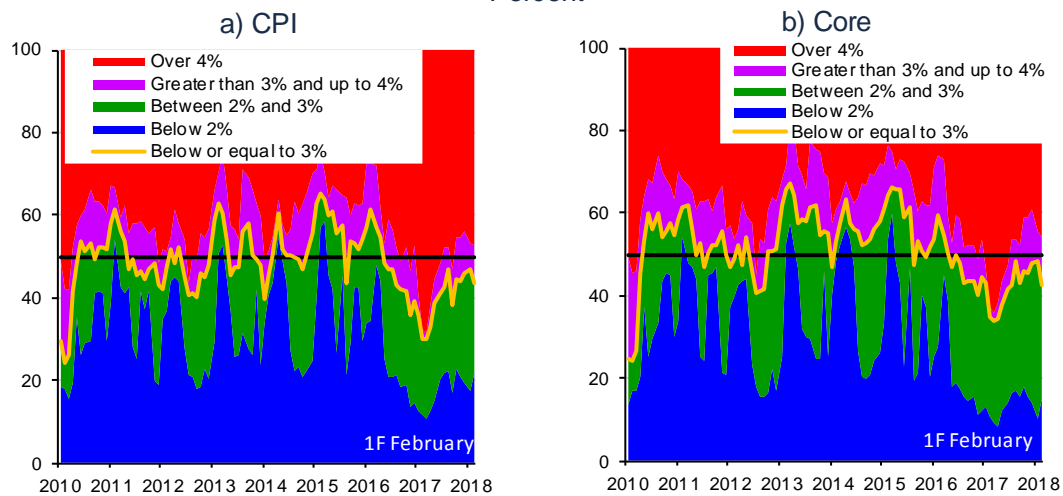
s. a. / Seasonally adjusted data.
1/ 3-month moving average.
Source: Banco de México and INEGI.

The evolution of monthly (seasonally adjusted and annualized) changes of both headline and core indices showed a downward trend in the analyzed period, with a slight rebound at the margin. In addition, the moving average of these indices' six observations exhibits a declining trend, albeit somewhat attenuated in the case of the core index. Nevertheless, in both cases it is gradually approaching the 3.0 percent target. It stands out that while the monthly (seasonally adjusted and annualized) changes of services increased at the margin, those of merchandise decreased. Similarly, the measure of the merchandise subindex trend shows a slight rebound, while that of services maintains a decreasing trajectory (Chart 194).

A measurement of the medium-term inflation trend, represented by the Trimmed Mean Indicator, shows that in part the current levels of headline inflation derive from the performance of especially high prices of certain goods and services. That is, if the extreme price changes are excluded, the resulting inflation level is lower than the observed one. Indeed, between the third and the fourth quarters of 2017, the Trimmed mean Indicator of headline inflation shifted from 4.61 to 4.69 percent, and subsided to 4.29 percent in the first fortnight of February 2018. These figures compare to the observed inflation, which registered levels of 6.48, 6.59 and 5.45 percent, respectively. As regards annual core inflation, the Trimmed Mean Indicator remained relatively stable between the third and the fourth quarter of 2017, and reached 4.50 and 4.48 percent, respectively, while in the first fortnight of February 2018 it declined to 4.01 percent. Although the difference between the observed figures is not so broad as compared to that registered in the case of headline inflation, trimmed core inflation has also been lower than that exhibited in the last few months (Chart 195 and Table 7).

Chart 194
Annualized Seasonally Adjusted Monthly Change and Trend
Percent
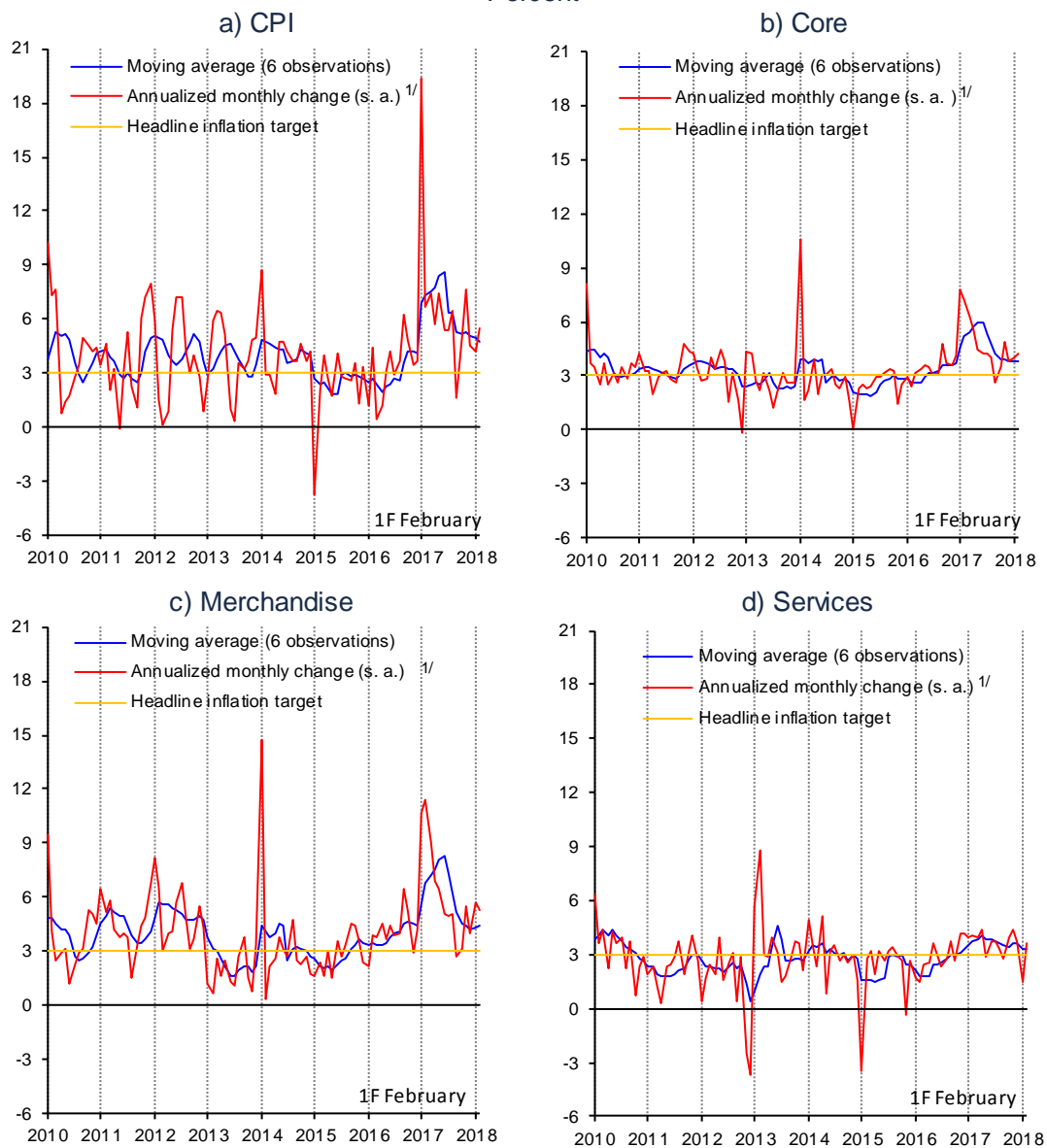
a) CPI

- Moving average (6 observations)
- Annualized monthly change (s. a.) 1/
- Headline inflation target

1F February

b) Core

- Moving average (6 observations)
- Annualized monthly change (s. a.) 1/
- Headline inflation target

1F February

c) Merchandise

- Moving average (6 observations)
- Annualized monthly change (s. a.) 1/
- Headline inflation target

1F February

d) Services

- Moving average (6 observations)
- Annualized monthly change (s. a.) 1/
- Headline inflation target

1F February

s. a. / Seasonally adjusted data.
1/ For the last observation, the annualized biweekly change is used.
Source: Seasonal adjustment prepared by Banco de México with own data and data from INEGI.

Chart 195
Price Indices and Trimmed Mean Indicators [1]
Annual change in percent

a) CPI

b) Core

1/ The Trimmed Mean Indicator excludes the contribution of extreme variations in the prices of some generic items from the inflation of a price index. To eliminate the effect of these changes, the following is done: i) monthly seasonally adjusted changes of the generic items of the price index are arranged from the smallest to the largest value; ii) generic items with the biggest and the smallest variation are excluded, considering in each distribution tail up to 10 percent of the price index basket, respectively; and iii) using the remaining generic items, which by construction lie closer to the center of the distribution, the Trimmed Mean Indicator is calculated.
Source: Prepared by Banco de México with own data and data from INEGI.

3.1.1. Core Inflation

Fundamental Core Inflation allows to better identify pressures that affect inflation, especially those associated with the cyclical performance of the economy, although it also considers pressures related to other factors, such as the impact of the exchange rate and other shocks. This Index is built to better respond to adjustments in economic activity as compared to core inflation (see Box 12). In particular, fluctuations in the cyclical conditions of the economy tend to precede the changes in this indicator's trend. In mid-2017, this inflation measure reached its highest levels since June 2009 (Chart 196). Given that Fundamental Core Inflation better reflects the impact of the cyclical phase of the economy on price formation, the trend that has been exhibited since early 2017 suggests that, in addition to supply factors, and in particular the exchange rate adjustments, the lower slackness in some markets, specifically in the labor market, could have hindered the assimilation of shocks on inflation. However, of the last few months this inflation measure has exhibited a downward trend, which is congruent with the performance, at the margin, of slack indicators, whose tightening seems to be ceding moderately (see Section 2.2.4).

Chart 196
Core Inflation and Fundamental Core Inflation
Annual change in percent

Source: Own estimates with data from Banco de México and INEGI.
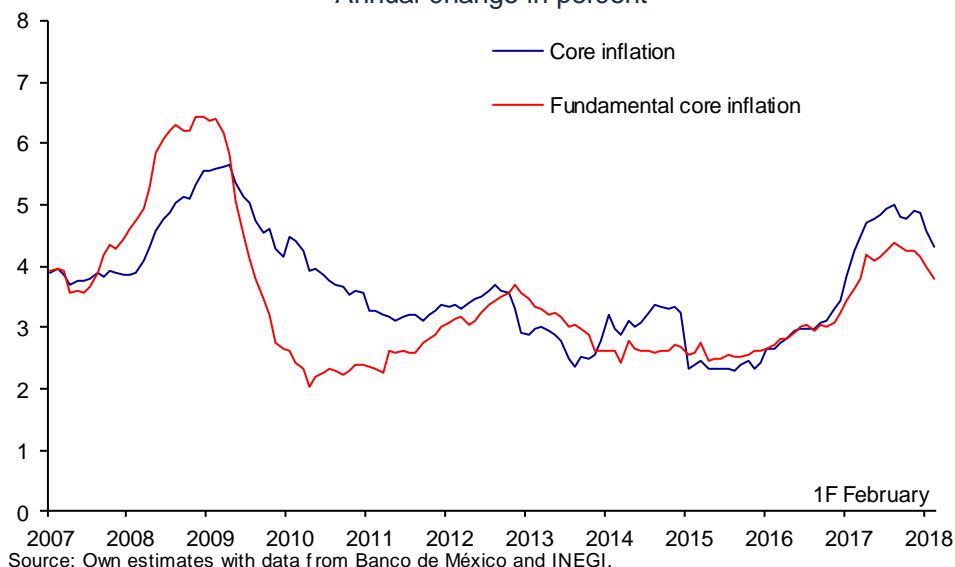
As mentioned above, core inflation has shown a slight decreasing trajectory, although the pace of its decline could be influenced by the cyclical position of the economy. However, although inflation has been subject to a number of shocks, such as higher energy prices, the depreciation of the exchange rate and higher prices of some agricultural products, no second-round effects on the price formation process seem to have been generated in the economy so far. In particular, the increase in the merchandise price index is attributed both to the adjustment in relative prices derived from the depreciation of the exchange rate (which is natural as they are internationally tradable goods) and to the indirect effects caused by higher energy prices and higher prices of agricultural products. Services' prices have also gone up, although at a lower rate as compared to merchandise prices. In particular, its evolution has been congruent with higher input costs, which suggests that no second-round effects have taken place. This is confirmed if the services that indeed respond to the exchange rate are excluded, such as air transportation, travel packages and intercity buses. In particular, it is established that the price dynamics of services for domestic consumption have been closely associated with those of their costs.[55]

In the performance of core inflation, and, in particular, of the accumulated gap between the change of merchandise prices and that of services prices, there is an important adjustment of relative prices, as a result of the depreciation of the real exchange rate in recent years and during the reported period. Specifically, the following should be mentioned:

vii.   Between the third and the fourth quarters of 2017, the average annual change of merchandise prices shifted from 6.37 to 6.11 percent and marked 5.78 percent in January and 5.29 percent in the first fortnight of February. Both the subindex of food and non-food merchandise prices

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[55] This derives from an update to the exercise presented in Box 1 of the Quarterly Report October – December 2016, "Indirect Effects of Energy Price Increments onto the Price formation Process of the Mexican Economy".

showed a decreasing trend in the analyzed period. Indeed, the average annual change of the first item declined from 7.29 to 6.80 percent between the mentioned quarters, and registered 6.50 percent in January 2018 and 6.17 percent in the first fortnight of February. Between the third and the fourth quarter of 2017, the average annual change of non-food merchandise declined from 5.60 to 5.53 percent. In January 2018 the annual change reached 5.17 percent and 4.56 percent in the first fortnight of February (Chart 197a and Chart 197b).

i.   Despite an upward trend in the average annual change of the services' price subindex by the end of 2017, in January and in the first fortnight of February it declined again. In particular, its change shifted from 3.68 percent in the third quarter of 2017 to 3.77 percent in the fourth one, and declined to 3.52 percent in January and to 3.49 percent in the first fortnight of February. A large part of these prices' performance in the last quarter of 2017 is attributed to the arithmetic effect of the services different from education and housing, as reductions in mobile phone tariffs registered over the same period of the previous year did not take place again. Increments in some food services' prices also contributed to the above (Chart 197a). Lower growth rates of the services' price subindex in early 2018 also reflect the fading of the indirect effects of higher input prices, in particular of energy prices, on the services prices during the previous year.

<div align="center">

Chart 197
Core Price Index
Annual change in percent

</div>

a) Merchandise and Services   b) Merchandise
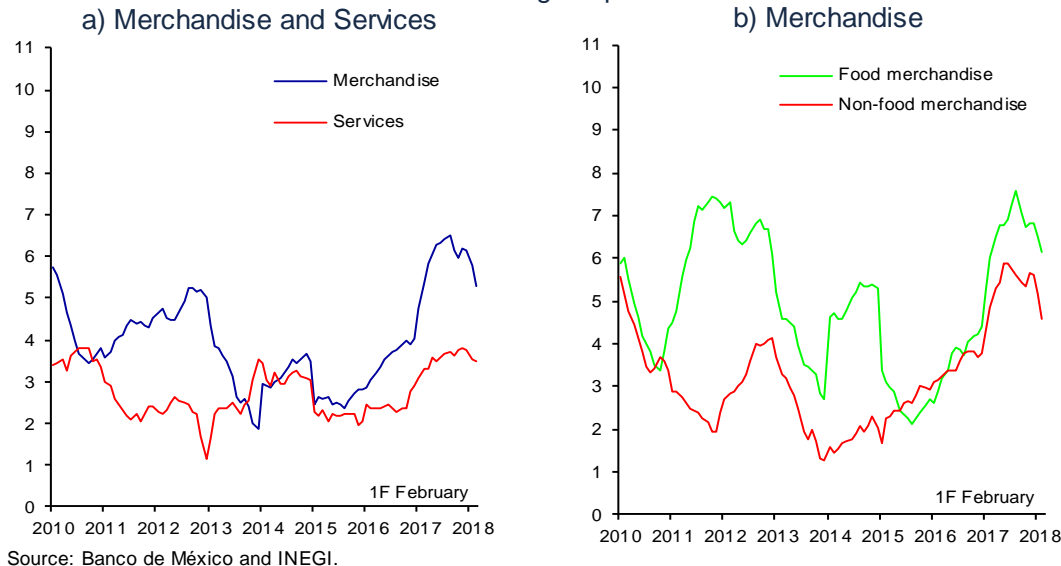
Source: Banco de México and INEGI.

3.1.2.   Non-core Inflation

As regards the performance of non-core inflation, the following is noteworthy:

i.   Between the third and the fourth quarters of 2017, the annual change rate of the agricultural products' price subindex decreased from 12.07 to 8.99 percent. Despite this, by the end of 2017 its increase in some fruits and

vegetables prices with a high share of CPI started to be notable, such as tomato, zucchini, green tomato and onion, among others. This was caused by adverse weather conditions in Mexico and in the U.S., where hurricanes across its different regions led to a lower supply of these goods. In particular, the tomato price shifted form an annual change of 13.26 percent in December 2017 to 43.56 percent in January 2018, and to 33.89 percent in the first fortnight of February. As a result, between November and December the annual change of the subindex of agricultural product prices went up from 8.84 to 9.75 percent and reached 10.76 percent in January and 10.45 percent in the first fortnight of February. Within it, the price of fruits and vegetables adjusted from 14.91 to 18.60 percent between November and December 2017, and marked 20.65 and 17.95 percent in January 2018 and in the first fortnight of February, respectively (Chart 198).

Chart 198
Price Index of Selected Fruits and Vegetables
Annual change in percent
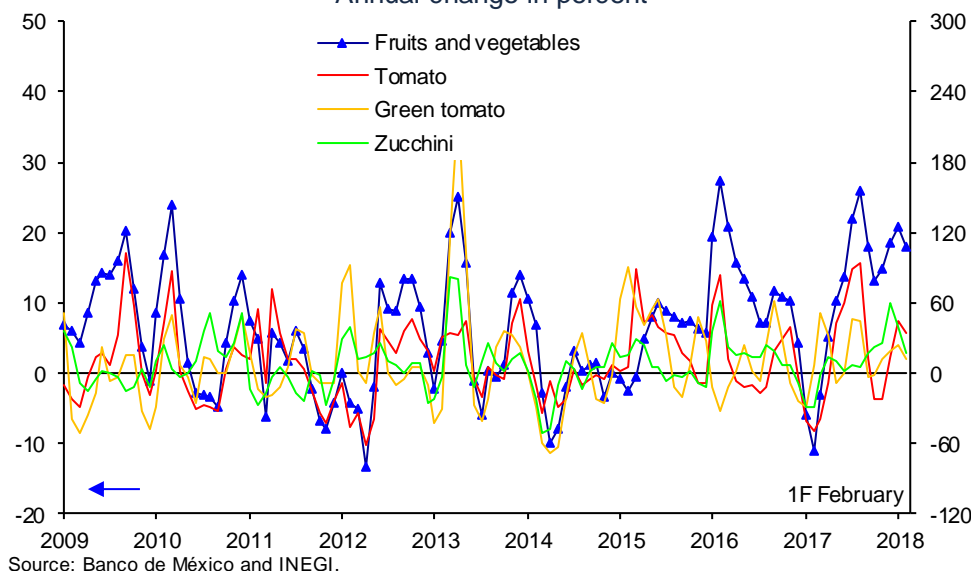
Source: Banco de México and INEGI.

ii.   The average annual growth rate of the energy price subindex and government approved fares increased from 11.14 percent in the third quarter of 2017 to 13.92 percent in the fourth one. In particular, the energy price subindex presented average annual changes of 13.68 and 17.03 percent in the same periods. The above was largely due to higher prices of LP gas since mid-third quarter, which were related to low international inventories and the hurricane Harvey impact on the U.S. supply. Thus, the average annual increase of this energy product shifted from 13.36 percent in the third quarter of 2017 to 39.93 percent in the fourth one. In January 2018, the annual change of the energy price index was considerably more moderated and marked 7.00 percent, while in the first fortnight of February it was 8.14 percent. Nonetheless, the annual change of the LP gas price remained high, reached 25.90 percent in January and 19.66 percent in the first fortnight of February. This contributed to limit the decrease in non-core inflation over these periods (Chart 199).

Chart 199
Price Indices of Selected Energy Products
Annual change in percent

Source: Banco de México and INEGI.
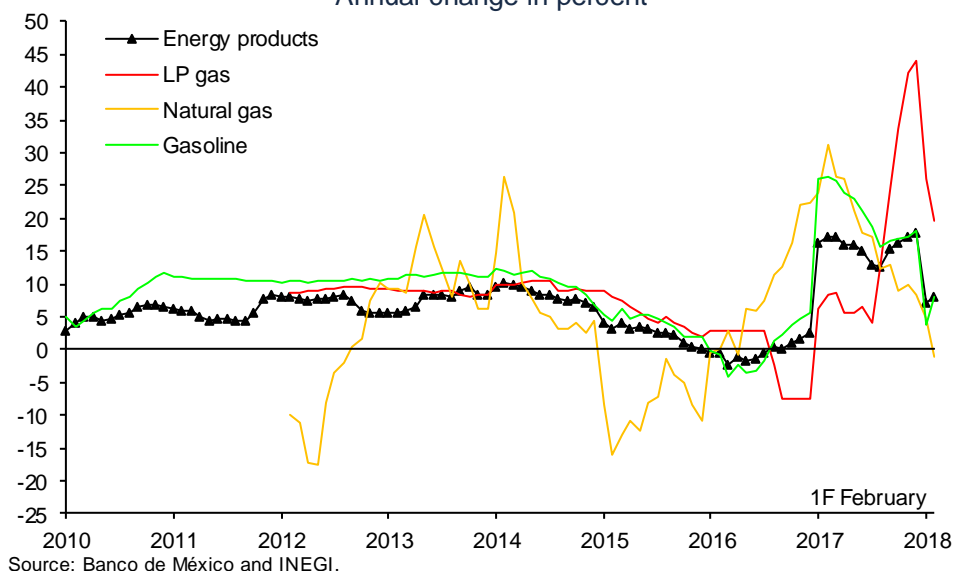
Delving in the above:

- In the fourth quarter of 2017, the average monthly change of gasoline was 0.77 percent, while in the third one it was 0.44 percent. This increase was associated with the additional depreciation of the Mexican peso in the last quarter of 2017, along with increases in this fuel's international references. In January 2018, these factors affected more noticeably the change of gasoline prices, which marked 3.11 percent in its monthly change, while in the first fortnight of February the change was 2.50 percent. It should be kept in mind that on November 30, 2017, the fourth and the last stage of the gasoline price liberalization program entered into force. Therefore, from that date onwards these prices are liberalized across all Mexican states.

- The natural gas price, determined in accordance with its international references, shifted from an average monthly increase of 0.85 percent in the third quarter to 0.02 percent in the fourth one, and registered a monthly change of 0.01 percent in January 2018 and no increase in the first fortnight of February.

- Low consumption electricity tariffs for domestic sector have remained unchanged since the 2 percent reduction at the beginning of 2016. High consumption electricity tariffs for domestic sector (DAC) varied, depending on the input costs required to generate electric power. In October, November and December 2017, DAC tariffs observed monthly changes of 0.6, 1.5 and 0.9 percent, respectively. The monthly changes of these tariffs in January and February 2018 were 2.9 and 1.5 percent.

- Between the third and the fourth quarters of 2017, the average annual change of government approved fares went up from 6.82 to 8.20 percent. It should be noted that in the wake of the earthquake on September 19, there was a free-of-charge period in subway services, as well as the city bus and parkings in Mexico City, along with some highways at the national level, which caused lower annual changes in the third quarter. In January 2018, the annual change of this item declined to 7.31 percent and further to 7.15 percent in the first fortnight of February.

In this context, because of the unforeseeable shocks on some energy prices, principally LP gas, as well as on some fruits and vegetables prices, the incidence of non-core inflation onto headline inflation was growing during the fourth quarter. The contributions of the agricultural products' item, energy products and government approved fares were greater. However, as stated above, since January 2018 the measured annual inflation no longer observes the impact of energy price increases registered over the same period of the previous year, which contributed to reduce the incidence of non-core inflation onto headline inflation (Chart 200).

Chart 200
Consumer Price Index
Annual impact in percentage points [1/]
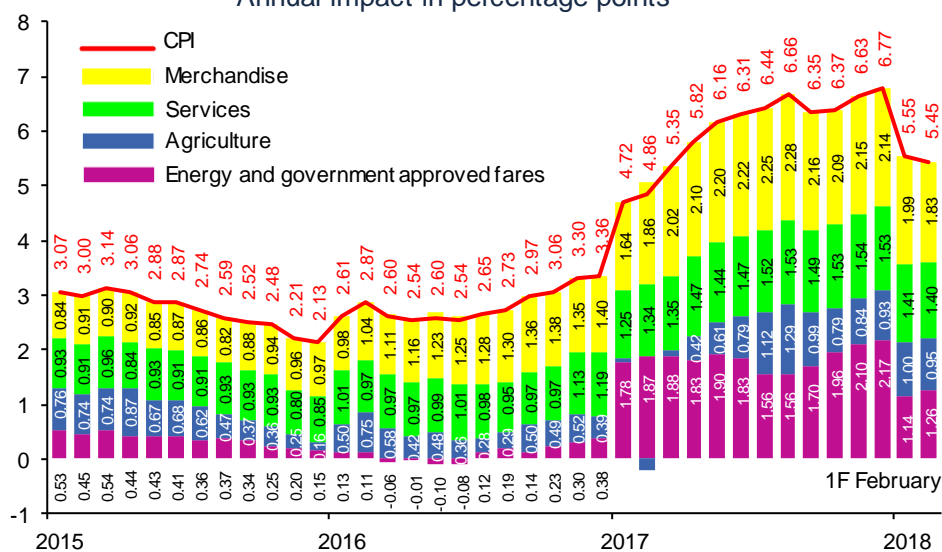
1/ In some cases, the sum of respective components can exhibit some discrepancies due to rounding.
Source: Prepared by Banco de México with data from INEGI.

3.2.   Producer Price Index

Between the third and the fourth quarters of 2017, the Producer Price Index (PPI) of total production, excluding oil, registered a decrease in its average annual change rate from 5.35 to 5.05 percent, and later to 3.38 percent in January 2018 (Chart 45). The PPI component of intermediate goods has presented the largest contribution to the downside over the analyzed quarters, as its change decreased from 6.63 to 5.82 percent and marked 3.89 percent in January 2018. The annual change rate of finished goods' prices also decreased from 4.80 to 4.69 percent between the third and the fourth quarters and reached 3.16 percent in January 2018. Within it, the subindex of finished goods for domestic consumption kept

declining (6.62 and 6.40 percent in the third and the fourth quarters of 2017, respectively, while in January 2018 it marked 5.44 percent). This PPI subindex has the maximum predictive power on the performance of core prices of merchandise destined to consumers.[56]

Chart 201
Producer Price Index [1/]
Annual change in percent
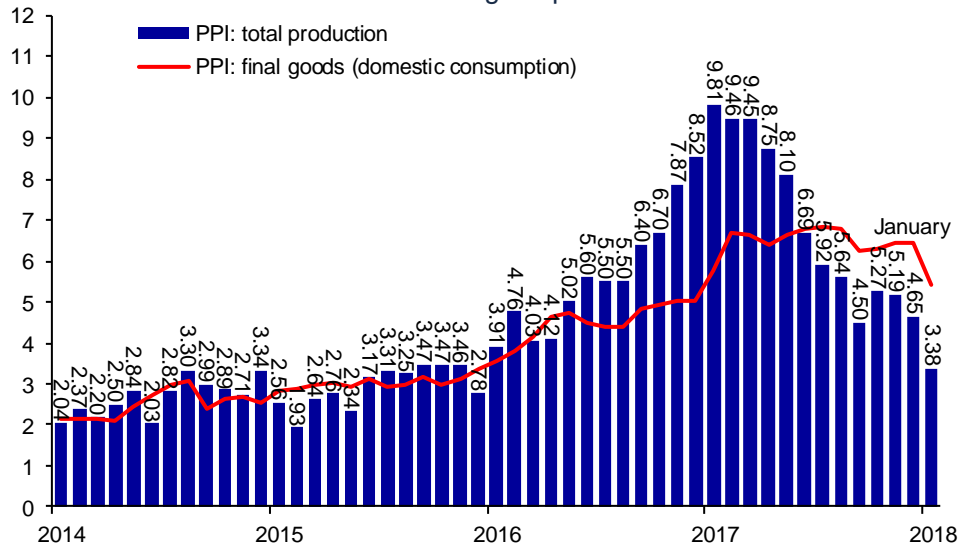
1/ Total Producer Price Index, excluding oil.
Source: Banco de México and INEGI.

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[56] See Box 1 of the Quarterly Report April – June 2016, "Can Inflationary Pressures be Identified when Measured with CPI by means of the Performance of PPI Merchandise Subindices?"

4.   Monetary Policy and Inflation Determinants

To guide its monetary policy actions, the Board of Governors of Banco de México closely monitors the evolution of inflation relative to its expected trajectory, considering the adopted monetary stance and the horizon at which the monetary policy operates, as well as the available information on all inflation determinants and its medium- and long-term expectations, including the balance of risks to them. Going forward, the Board has stressed that it will continue to watch the potential pass-through of exchange rate adjustments onto prices, the monetary stance of Mexico relative to the U.S. and the evolution of slack conditions in the economy. Similarly, given the presence of risks, that, by nature, imply a high degree of uncertainty over their consequences for inflation and its expectations, the monetary policy is adjusted in a timely and firm manner. This contributes to the anchoring of medium- and long-term inflation expectations and to the convergence of inflation to its target (see Box 13.

During the first six months of 2017, the Board of Governors of Banco de México increased the benchmark rate by 125 basis points, raising it to 7 percent in June 2017, in order to face a complex environment of the economy and its consequences to inflation. Nevertheless, Banco de México maintained unchanged the target to the Overnight Interbank Interest Rate between July and November 2017. However, in view of the additional shocks that had affected inflation in late 2017, and in order to maintain a monetary stance that would prevent second-round effects on the price formation process and would reinforce the declining trend in annual headline inflation to its target, in the meetings of December 2017 and February 2018, the Board of Governors voted to raise the target rate by 25 basis points in each meeting, increasing it to a level of 7.50 percent. In the last monetary policy decision, the Board of Governors considered that slack conditions in the economy have been tightening, which could hinder the assimilation of shocks on inflation, and could affect the pace of the core inflation decline, and tighter monetary conditions that are expected in the U.S. economy (Chart 202a). It is worth noting that interest rates have increased to a real ex ante level close to 3.5 percent (Chart 202b). To put this level in perspective, the estimated range for the neutral short-term rate is 1.7 to 3.3 percent, with a medium point of 2.5 percent.[57]

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[57] For a description of the estimation of the short-term neutral interest rate, see Box "Considerations on the Evolution of the Neutral Interest Rate in Mexico", in the Quarterly Report, July - September 2016.

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Box 13
Inflation Targeting Regime and the Role of Forecasts

1. Introduction

In order to comply with its constitutional mandate to procure the stability of the purchasing power of the Mexican peso, in 2001 Banco de México adopted an inflation targeting regime as a framework to conduct its monetary policy, establishing an explicit annual inflation target of 3 percent of the Consumer Price Index (CPI) in 2003.[1] Taking into account the presence of a wide range of factors that are beyond the control of the monetary authority and that in the short run can affect the inflation evolution, Banco de México set a variability interval of plus/minus one percentage point around the referred target. As extensively documented, in addition to the institutional commitment to reach the explicit inflation target, this regime is characterized by the implementation of monetary policy in a framework of transparency and following the principle of clear communication with the public. Considering this, and given that monetary policy affects inflation via a number of transmission channels with lags, in practice the inflation targeting regime forecasts the future inflation trajectory in the horizon in which the monetary policy operates, and that is how it communicates it to the public. Evidently, this derives from the fact that monetary policy actions are adopted such that the monetary stance contributes to achieve the inflation forecast in the horizon in which these actions operate. This Box presents the main features characterizing the inflation targeting regime, emphasizing the role of forecasts, as well as the context in which the monetary policy in Mexico has been operating and will continue to operate under this regime.

2. Inflation Targeting Regime

Under the inflation targeting regime, a central bank's priority is to achieve a quantitative inflation target. To be able to implement measures consistent with the inflation convergence to its target, it is relevant for the central bank to assess, among other factors, the sources of inflation pressures during the decision-making process. In particular, in case of sustained demand-related inflation pressures, which cause inflation to divert from its target, it is considered appropriate for the central bank to take measures to curb these pressures. When supply shocks arise, reflecting an adjustment in relative prices, and generally causing transitory inflation deviations from its target, it is not recommended for the monetary authority to try to offset these pressures in the very short term, leading to reductions in other prices via increments in interest rates, given the costs of this strategy and considering that

the impact of these shocks on inflation tends to be transitory. However, if these shocks happen to be of such magnitude that they may contaminate medium- and long-term inflation expectations, the central bank should assess the pertinence of taking measures to prevent jeopardizing the attainment of the inflation target.

In addition to identifying the source of inflation pressures, a central bank comprehensively assesses the economic juncture, the prevailing monetary and financial conditions, and their outlook in the horizon at which the monetary policy operates. Furthermore, it makes decisions considering the inflation level and its evolution relative to its projections, in addition to inflation expectations, especially medium- and long-term ones. This allows to identify the need to adjust the monetary policy stance when, due to a number of factors, inflation deviates from its expected trajectory, depending on the inflationary shock and its risk to inflation. As mentioned above, considering that inflation can temporarily divert from its target in the presence of transitory shocks, and the lagged effect of monetary policy on inflation, the central bank commitment is that inflation evolves in line with its projection in the horizon in which the monetary policy operates. Thus, central bank's inflation forecasts are an explicit reference, easy to observe and to evaluate by the public, as it can facilitate the central bank's communication and improve the understanding of the monetary policy scope[2]. In this context, the reference rate is set to attain the inflation forecast in the period in which the monetary policy operates. Among other factors, its adjustments can respond to events that cause the observed inflation to divert from the forecast trajectory.

In the particular case of Mexico, Banco de México's Board of Governors evaluates the inflation forecasts, along with other macroeconomic variables and publishes them on a regularly basis. At every moment these forecasts consider a monetary policy congruent with the inflation target. In this context, it is assessed if inflation deviations from the forecast justify adjustments in the monetary policy. All available information is incorporated, including the performance of inflation expectations, the Central Bank's vision of the monetary policy transmission mechanism, as well as the horizon at which it operates, which in the case of Mexico is estimated to be between 4 and 6 quarters.[3] That is, in the monetary policy decisions, Banco de México's Board of Governors considers, among other factors, the evolution of inflation relative to its forecast trajectory, especially for the next 4 to 6 quarters.

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[1] See the Monetary Program 2018 and Box 2 "Recent Changes in the Transmission Mechanism of Monetary Policy in Mexico" in the Quarterly Report January – March 2016.
[2] Svenson (1997), Clinton et. al. (2015).

[3] See Box 2 "Recent Changes in the Transmission Mechanism of Monetary Policy in Mexico" in the Quarterly Report January – March 2016.

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Hence, the implementation of inflation targeting regime is characterized by a series of conditions and instruments:[4] i) the definition of an inflation target; ii) the estimation and the regular publication of inflation forecasts, conditional on the available information, which are key for monetary policy decisions; iii) the balance of risks associated to the inflation forecast; and, iv) an emphasis on the uncertainty around these forecasts, in many cases via fan charts.

3. Monetary Policy Conduct in Mexico in Recent Years

In literature, the relevance of having a transparent communication strategy has been emphasized, which would allow to communicate to the public all the elements considered in each monetary policy decision, including the inflation deviations from its target, the inflation forecast and the associated balance of risks.[5]

In this sense, in addition to the Central Bank's autonomy, the floating exchange rate regime and the absence of fiscal dominance, a key element for the effective inflation targeting regime in Mexico has been a policy of transparency, of constant communication and of accountability to the public. Insofar as a Central Bank has credibility and the economic agents have confidence that it will adjust the monetary stance when facing shocks that could divert inflation from its target in a sustained manner, inflation expectations tend to be better anchored to this target, making the process of convergence to the inflation target more efficient.

Recognizing the importance of all these elements to the monetary policy effectiveness, Banco de México has sought to improve its communication strategy with the public. Among these efforts, the following are noteworthy: the publication of the forecasts of macroeconomic variables, along with the elements in the balance of risks that could affect their trajectory in the future. In addition, to illustrate the probability of the occurrence of different scenarios with respect to the forecast variables, which reflects the uncertainty related to the forecast, starting from the Quarterly Report July – September 2011, the Board of Governors decided to release the forecasts of inflation and of other macroeconomic variables using fan charts. Subsequently, as of the Quarterly Report April – June 2017, it started to complement these charts with the central projection of the corresponding Report, along with that of the previous Report. The Board of Governors considered that this adjustment will contribute to strengthening the Central Bank's role in generating expectations, which in turn will further strengthen the channel of inflation expectations in the monetary policy transmission mechanism, as it will allow to give to the public a more detailed explanation of the forecasts, the associated risks and the possible updates.

In this context, starting from this Report average quarterly inflation forecasts will be published. In particular, the vector corresponding to the central inflation forecasts and those corresponding to the previous Report will be reported. These forecasts will cover 8 quarters, starting from the quarter analyzed in each Report.

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Banco de México. (2016) Box 2 "Recent Changes in the Transmission Mechanism of Monetary Policy in Mexico" in the Quarterly Report January – March 2016.

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Clinton, Kevin, Freedman, Charles, Juillard, Michel Kamenik, Ondra, Laxton, Douglas and Wang, Hou. (2007) "Inflation-Forecast Targeting: Applying the Principle of Transparency" IMF, Working Paper 15/132.

Svensson, Lars E. O. 1997. "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targeting." European Economic Review, 41(6): 1111–46.

Woodford, Michael (2007). "The Case for Forecast Targeting as a Monetary Policy Strategy" Journal of Economic Perspectives. Volume 21, Number 4. Fall 2007.

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[4]   Clinton et al. (2015), Svensson (1997), Woodford (2007).
[5]   Clinton et al. (2015).

Chart 202
Target for the Overnight Interbank Interest Rate, Headline Inflation and Real Ex Ante Rate
Annual percent

a) Target for the Overnight Interbank Interest Rate and Headline Inflation [1]

b) Real Ex Ante Short-term Rate and Estimated Range for Real Neutral Short-term Rate in the Long Term [1]
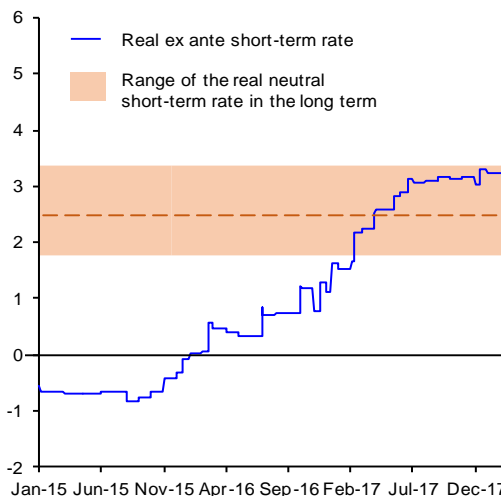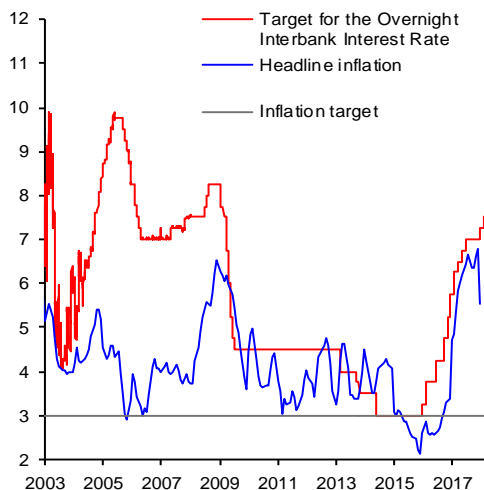
1/ The Overnight Interbank Interest Rate is shown until January 20, 2008. The latest inflation figure corresponds to January.
Source: Banco de México.

1/ Real ex ante short-term rate is calculated as the difference between the target for the Overnight Interbank Interest rate and the mean of inflation expectations for the next 12 months, derived from Banco de México's Survey. The dotted line corresponds to the mid-point of the range.
Source: Banco de México.

Considering the horizon at which the monetary policy operates, the following factors affected the actions taken during the analyzed period: i) the performance of inflation with respect to its estimated trajectory; ii) the behavior of the main inflation determinants; and iii) the evolution of medium- and long-term inflation expectations.

As regards the evolution of inflation with respect to its forecast, using the information available at the moment of the release of the Quarterly Report July – September 2017, annual headline inflation was anticipated to continue with a downward trend in 2017 and this trajectory was estimated to accentuate during 2018, reaching a level close to 3 percent by the year end. However, in view of additional unexpected shocks at the end of the year, inflation increased and closed 2017 at 6.77 percent. This inflation trajectory was higher than anticipated in the referred Report. Subsequently, despite a considerable decline in inflation at the beginning of 2018, the performance of non-core inflation kept perceiving the shocks that had affected it at the end of 2017, so this decrease was smaller than anticipated. Because of these shocks, there was a delay in the estimated trajectory of the annual headline inflation convergence to the 3.0 percent target. Indeed, although in the previous Report it was expected to attain the level by the end of 2018, as a result of the above, currently it is estimated to reach those levels in the first quarter of 2019 (see Chart 206 in Section 5). The expected trajectory of core inflation is expected to continue declining gradually, to reach levels close to 3.0 percent in the first quarter of 2019, and to consolidate at that level during the year. In this sense, the trajectory of core inflation had smaller adjustments with respect to the expected in the previous Report (see Chart 207 in Section 5). The delay in the inflation convergence to its target was one of the elements considered by the Board of Governors in their

decision of the February meeting. In fact, because of the adjustment in the reference rate carried out in that meeting, despite the shocks on inflation at the end of 2017 and in early 2018, inflation is expected to converge to its target in the horizon at which the monetary policy operates. At the same time, the new forecasts consider the impact of the implemented monetary policy actions, which affect inflation with a certain lag.

As regards inflation determinants, the one referring to the potential pass-through of exchange rate adjustments onto prices should be highlighted. It should be remembered that changes in the real exchange rate are a natural adjustment mechanism of the economy in light of different disturbances, and that they lead to changes in the relative prices of merchandise with respect to services. In this context, the role of the monetary authority is to ensure that such adjustments take place in an orderly manner, without generating second-round effects on inflation. In the period analyzed in this Report, the Mexican peso depreciated against the U.S. dollar and its volatility increased considerably, although starting in January 2018 a certain reversal in this trend was observed.

i.   Among the factors that pressured the exchange rate at the end of 2017 was the uncertainty related to: i) the U.S. monetary policy normalization process, the approval of the fiscal package in the U.S., and its final ratification in December 2017; ii) the renegotiation of NAFTA, and iii) a number of domestic events related to the electoral process in Mexico. Hence, the Mexican peso oscillated between MXN/USD 18.00 and MXN/USD 19.70 between the end of September and the end of December 2017. Nonetheless, since early January the Mexican peso has appreciated slightly, and marked MXN/USD 18.6 in late February (Chart 203a and Chart 203b). This was associated with the monetary policy actions implemented by Banco de México, a somewhat improved environment in NAFTA negotiations and the generalized weakness of the U.S. dollar. In this context, survey-based expectations for the exchange rate at the end of 2018 and 2019 have been strongly affected by its recent quote, as it adjusted from September to January from MXN/USD 18.21 to MXN/USD 19.04 for 2018, and from MXN/USD 18.01 to MXN/USD 18.61 for 2019.

ii.   In the presence of factors that affected liquidity in the foreign exchange market and generated higher volatility, in October and December 2017 the Foreign Exchange Commission announced an increase in non-deliverable forward (NDFs) auctions settled in Mexican pesos for an amount of US$4 billion, on October 25, 2017, and of US$500 million on December 26, under the originally announced program.[58] This sought that the foreign exchange market continued to function in an orderly manner in the face of the mentioned factors. Similarly, it ratified its commitment to continue evaluating this market's operating conditions and did not rule out the possibility of taking additional actions, if required. It also stressed that the value of the Mexican peso will continue to be procured mainly by preserving sound economic fundamentals.

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[58] See the Press Release of the Foreign Exchange Commission of October 25, 2017 and December 26, 2017.

Chart 203
Exchange Rate and Implied Volatility

a) Nominal Exchange Rate [1]
MXN/USD
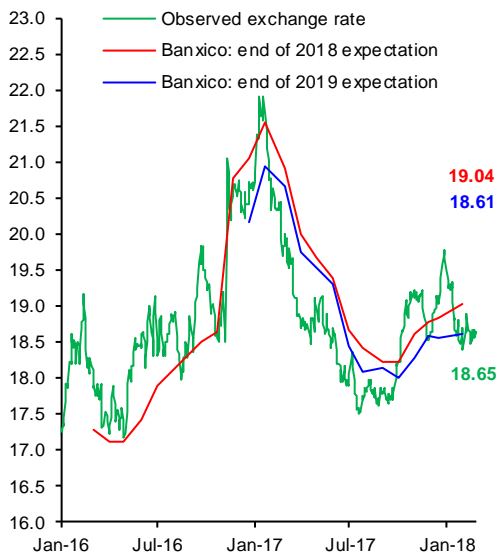
b) Implied Volatility in FIX Options
Percent
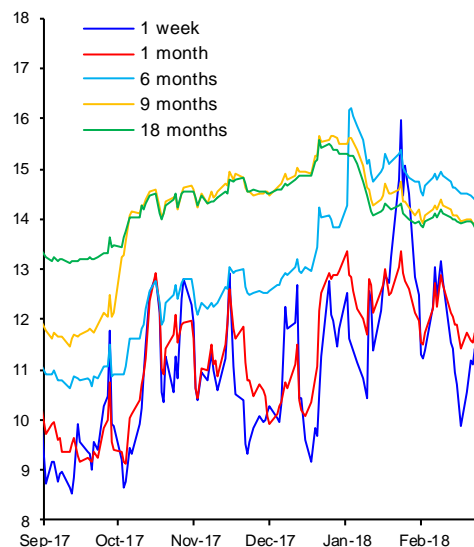
1/ The observed rate is the daily FIX exchange rate. Expectations correspond to the average of the January survey by Banco de México.
Source: Banco de México.

Source: Bloomberg.

Regarding the monetary policy stance of Mexico relative to the U.S., financial markets maintain an expectation of a gradual monetary policy normalization process by the U.S. Federal Reserve, including the program of reducing its balance sheet that started in October 2017. However, the consolidation of the cyclical recovery and the effect of the recently approved U.S. fiscal stimulus could affect inflation, which subsequently could accelerate the monetary policy normalization process, pressure interest rates upwards and propitiate a rebalancing of investment portfolios. As described in Section 2.1, international financial markets have started to acknowledge this risk.

Slack conditions in the economy have remained relatively tight, as mentioned in Section 2.2.4. This has been particularly evident in the labor market. It could hinder the assimilation of shocks on inflation, and, hence, could affect the pace of the core inflation decline. In this context, the monetary policy stance adopted by Banco de México turns especially relevant, to prevent second-round effects on the price formation in the economy.

With respect to inflation expectations, even though the mean of this expectation corresponding to the end of 2018 adjusted from 3.84 to 4.06 percent between September and January, this shift largely reflects the arithmetical effect of the shocks on non-core inflation over the last months (Chart 204a).[59] In contrast, the mean for core inflation was adjusted downwards from 3.72 to 3.63 percent over the same period, while the implicit expectation for the non-core component increased

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[59] The mean for headline inflation expectation for the end of 2018, based on the Citibanamex survey, went up from 3.82 to 4.11 percent between the surveys of September 20, 2017 and February 20, 2018.

from 4.24 to 5.52 percent. The mean of the expectations for the end of 2019 was adjusted upwards from 3.55 to 3.65 percent.[60] The core component remained at 3.43 percent in the same period, while the implicit expectation for the non-core component has risen from 3.98 to 4.38 percent (Chart 204b). Ultimately, medium- and long-term expectations remained stable, although above the target, around 3.5 percent (Chart 204c).[61]

Chart 204
Inflation Expectations
Percent

a) Average Headline, Core and Non-core Inflation Expectations as of End of 2018
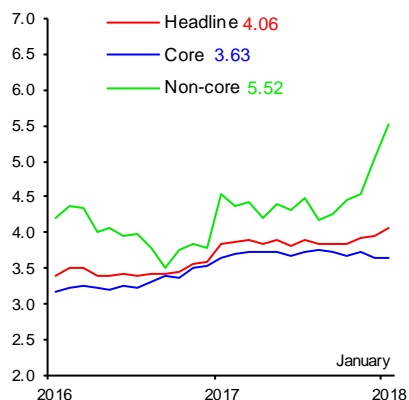
b) Average Headline, Core and Non-core Inflation Expectations as of End of 2019
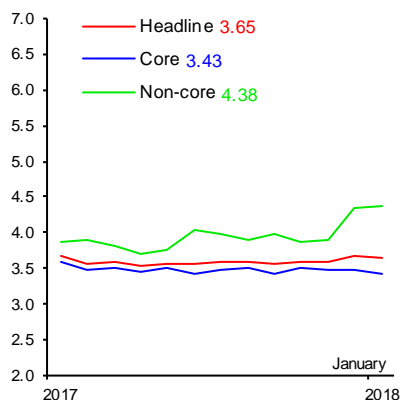
c) Average Headline Inflation Expectations for Different Terms

Source: Banco de México's survey.

Source: Banco de México's survey.
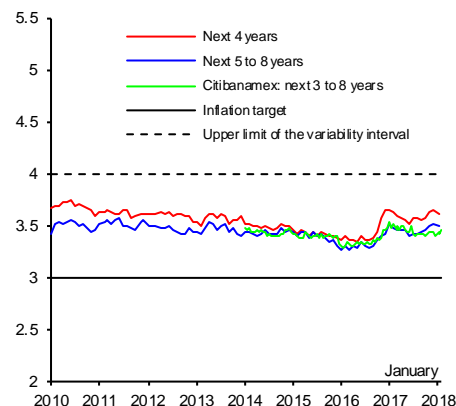
Source: Banco de México's survey and Citibanamex survey.

The break-even inflation (the difference between long-term nominal and real interest rates) rebounded between September and January, shifting from 3.53 to 3.87 percent (Chart 205a). Regarding its components, on the one hand, long-term inflation expectations implicit in market instruments (extracted from government instruments with 10-year maturities) increased slightly from 3.42 percent in September to 3.48 percent in January. These figures stand in contrast with the 3.2 percent attained in 2016. This rise mainly responds to the upward adjustment in shorter-term inflation expectations (1 to 5 years), the estimate of which lies at 3.80 percent, while the longer-term one (6 to 10 years) lies at 3.16 percent (Chart 205b). Meanwhile, the estimate of the 10-year inflation risk premium spiked from 9 to 39 basis points over the same span (Chart 205c).[62]

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[60] The mean of headline inflation expectation for the end of 2019, based on the Citibanamex survey of February 20, 2018 marked 3.64 percent.

[61] Regarding the mean of long-term inflation expectations, based on the Citibanamex survey (for the next 3-8 years), it maintained around 3.5 percent between the surveys of September 20, 2017 and February 20, 2018.

[62] For a description of the estimation of long-term inflation expectations, see Box "Decomposition of the Break-even Inflation" in the Quarterly Report October – December 2013. For this Report, the estimation was updated to include data until November 2017.

Chart 205
Inflation Expectations
Percent

a) Break-even Inflation and Inflation Risk Implicit in Bonds

Source: Estimated by Banco de México with data from Valmer and Bloomberg.

b) Annual Inflation Expectations Implicit in Market Instruments [1]

1/ The inflation expectation is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

c) 10-Year Inflation Risk Premium [1]

1/ The inflation risk premium is calculated based on a similar model using data from Bloomberg, PIP and Valmer, based on Aguilar, Elizondo and Roldán (2016).
Source: Estimated by Banco de México with data from Bloomberg, Valmer and PIP.

Interest rates in Mexico displayed high volatility and increases for all terms in the reference period, especially for 2 years and over. This was observed, above all, by the end of 2017, although the said increases have moderated slightly since the beginning of this year. The adjustments in the yield curve were affected by the reference rate increases in short-term interest rates, and pressures on external interest rates in longer-term ones. In the period analyzed in this Report, the 3-month interest rate increased 50 basis points from 7.1 to 7.6 percent, while the 2-year interest rate and the 10-year interest rate went up 90 basis points from 6.7 to 7.6 percent and from 6.8 to 7.7 percent, respectively (Chart 206a and Chart 206b). This pushed the yield curve upwards, which took place in an orderly manner, in part as a result of monetary policy actions implemented by Banco de México (Chart 206c).

Chart 206
Interest Rates in Mexico

a) Government Bonds Interest Rates
Percent
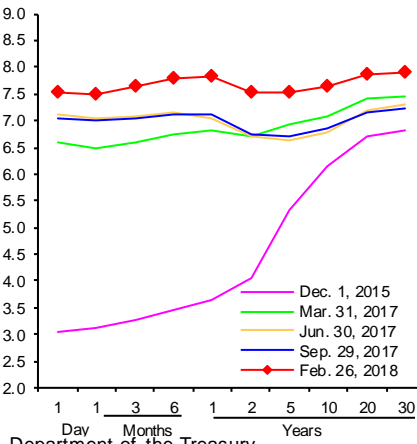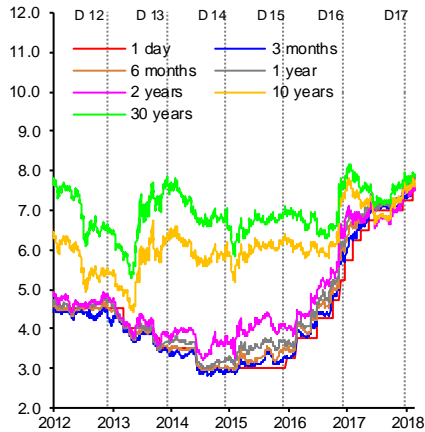
b) Yield Curve
Percent

c) Slope of the Yield Curve
Basis points
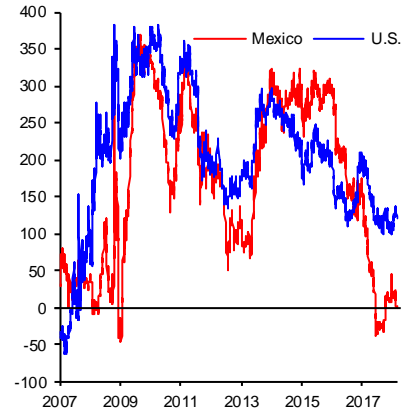
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

During the fourth quarter of 2017 and in early 2018, spreads between Mexican and U.S. interest rates (especially short-term ones) remained high. From January to date, higher long-term interest rates in the U.S. have lowered the spreads of equivalent yield terms, although they still remain above those observed in the Quarterly Report July – September 2017. Thus, the spreads of 3-month and 2-year rates remained unchanged at about 600 and 530 basis points, respectively, as compared to the previous Report, while 10-year spreads increased by 20 basis points and amounted to 480 basis points (Chart 207a and Chart 207b).

Chart 207
Spreads between Mexican and U.S. Interest Rates

a) Spreads between Mexican and U.S.
Interest Rates [1]
Percent
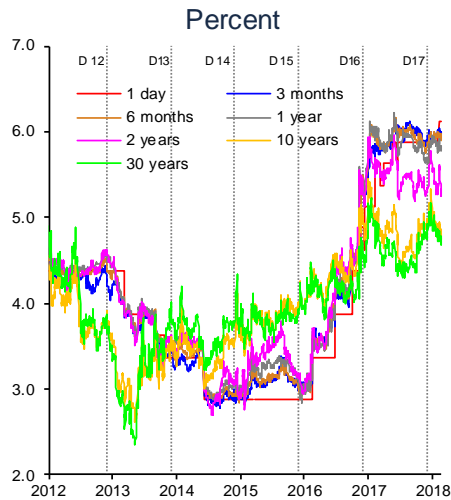
b) Curve of Spreads between Mexican
and U.S. Interest Rates
Percentage points
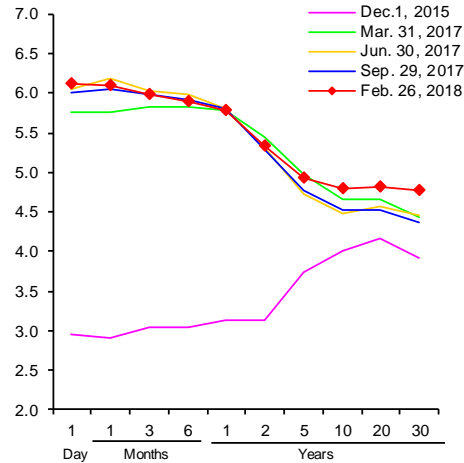
1/ For the U.S. target rate, the average of the interval considered by the Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

Market indicators that measure domestic sovereign credit risk decreased. Notably, these indicators for other emerging markets decreased to a greater degree (Chart 208).

Chart 208
Market Indicators that Measure the Domestic Sovereign Credit Risk [1]
Basis points
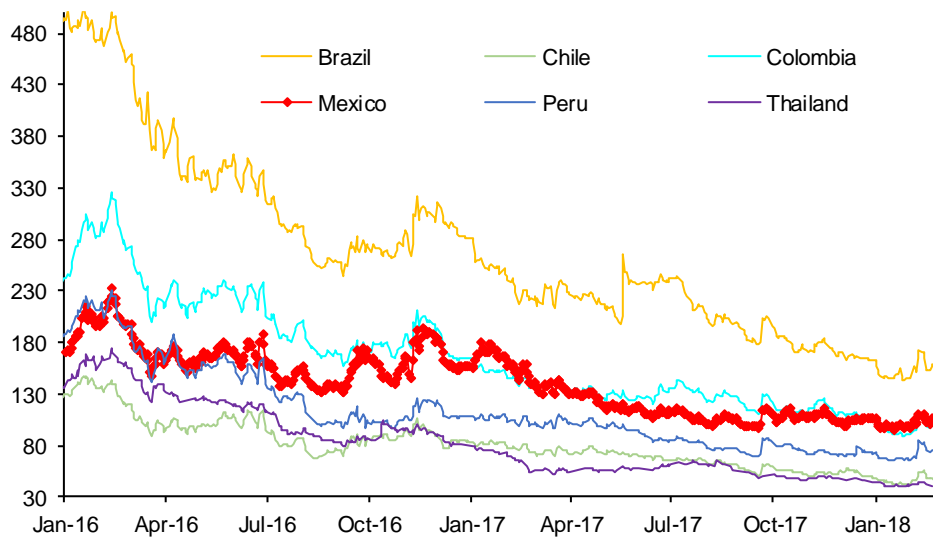
1/ It refers to 5-year Credit Default Swaps.
Source: Bloomberg.

5.   Forecasts and Balance of Risks

5.1.1.   Forecasts for Economic Activity

GDP growth: The forecasts for economic growth in Mexico for 2018 and 2019 remain unchanged with respect to those published in the previous Report. GDP is still estimated to grow between 2.0 and 3.0 percent in 2018. In 2019, the economy is projected to expand between 2.2 and 3.2 percent (Chart 209a). These forecasts consider that, although the foreign demand faced by Mexico could benefit from higher growth expectations for the U.S. industrial production and for global trade, the prevailing uncertainty around the terms that will regulate Mexico's trade relationship in North America could continue to negatively affect the evolution of investment in the country.[63] Notably, slack conditions in the economy have been tightening, especially in the labor market, though recently they seem to have started to cede moderately. In this context, and considering that economic growth is expected to be close to its potential, the cyclical conditions are estimated to remain at levels similar to the current ones (Chart 209b).

Employment: In line with the recent evolution of the economy and the growth forecasts, in 2018 and 2019 the forecasts for the number of IMSS-affiliated jobs remain unchanged relative to the previous Report. Thus, for 2018 an increase of between 680,000 and 780,000 jobs is expected, while for 2019 growth of 690,000 and 790,000 jobs is projected.

Current Account: For 2018, deficits in the trade balance and the current account are anticipated to amount to 1.1 and 2.1 percent of GDP, respectively (US$13.7 billion and US$25.9 billion, in the same order). These forecasts compare to the projections in the previous Report of 1.0 and 2.1 percent of GDP, respectively (US$13.1 billion and US$25.9 billion, in the same order). For 2019, deficits in the trade balance and the current account are estimated to be 1.2 and 2.3 percent of GDP, respectively (US$15.0 billion and US$30.5 billion, in the same order), which compare to 1.1 and 2.3 percent released in the previous Report (US$14.5 billion and US$30.6 billion, respectively).

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[63] The expectations for the U.S. industrial production in 2018 and 2019 were adjusted from 2.3 and 2.1 percent in the previous Report to 3.3 and 2.4 percent, respectively, in the current one, based on the consensus among business analysts surveyed by Blue Chip in February 2018.

Chart 209
Fan Charts: GDP Growth and Output Gap
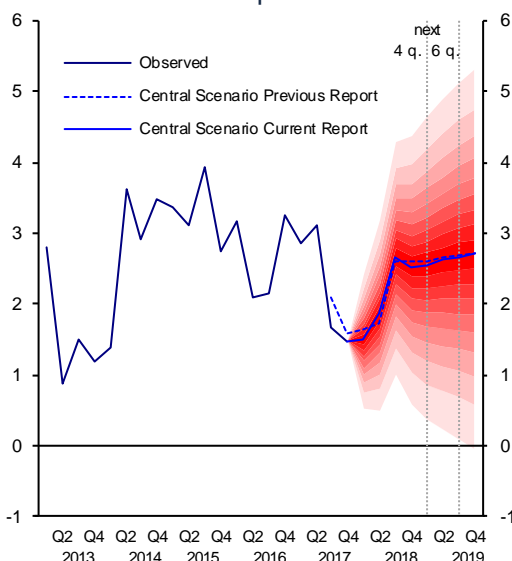
a) GDP Growth, s. a.
Annual percent

b) Output Gap Estimate, s. a.
Percentage of potential output

s. a. /Seasonally adjusted data. The next four and six quarters are indicated, using as a reference the first quarter of 2018; that is, the first and the third quarters of 2019, time intervals over which monetary policy transmission channels fully operate.
Source: INEGI and Banco de México.
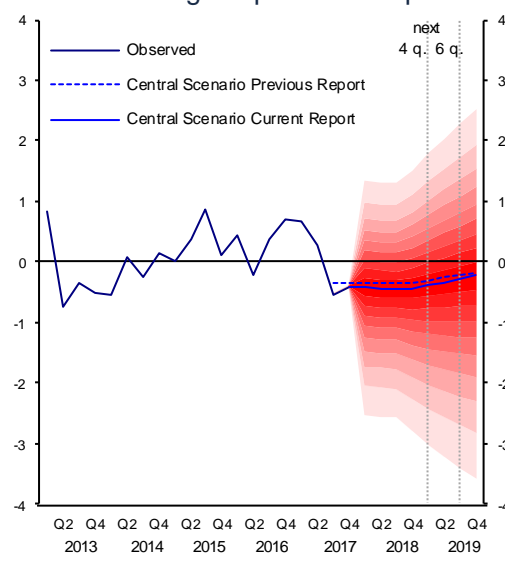
s. a. /Seasonally adjusted data. The next four and six quarters are indicated, using as a reference the first quarter of 2018; that is, the first and the third quarters of 2019, time intervals over which monetary policy transmission channels fully operate.
Source: Banco de México.

The main downward risks to economic activity are:

i.   Delays in the NAFTA renegotiation or that it result in an unfavorable outcome for the Mexican productive sector. In particular, an agreement that would lead to a new pattern of trade relations that affects the formation of global value chains could hurt not only growth in the short term, but also the long-term growth potential of the economy.

ii.   Bouts of volatility in international financial markets, derived from the process of normalization of U.S. monetary policy or from other factors could lead to lower sources of financing.

iii. Volatility increases in domestic financial markets, associated with the electoral process in Mexico.

iv.   Competitiveness of the Mexican economy is affected by several factors (external or domestic), such as corporate tax cuts in the U.S. and public safety issues in Mexico.

The main upward risks to growth are:

i.   Uncertainty over NAFTA renegotiations is resolved, reinvigorating investment, possibly even across the sectors that heretofore have been excluded from the Agreement.

ii.   The implementation of structural reforms yields greater-than-expected results. In this regard, certain progress has been observed, including positive results in rounds of bidding for exploration and extraction of

hydrocarbons, which are expected to lead to greater investment over the coming years and higher production in the medium term.

Despite the moderation in some of the most adverse risks to growth and the resumption of the economic growth in the last quarter of 2017, the balance of risks to growth is still biased to the downside. The downward trajectory of investment that has been observed for several years now, combined with the weakness it may maintain in the future, points to downward risks to economic growth in the medium and long term.

5.1.2.   Inflation Outlook

Inflation: Given the recent performance of inflation, the expected evolution of its determinants, the current monetary policy stance and the horizon at which it operates, headline inflation is forecast to continue to subside, approaching the 3.0 percent target over the course of the year, attaining it by the first quarter of 2019, and staying close to its target in the remainder of 2019. The delay in this trajectory is, in part, associated with the arithmetic effects of price increases in some energy products and fruits and vegetables, which affected non-core inflation in the last few months, along with the cyclical position of the economy, which could be influencing the pace of the core inflation decline. The estimated trajectory of core inflation is expected to continue to subside gradually, attain levels close to 3.0 percent in the first quarter of 2019 and consolidate convergence to that level during the remainder of the year (Table 8). These projections are based on the assumptions of an orderly exchange-rate performance, the absence of labor market-related pressures, and a sharp decline in non-core inflation during 2018, as long as the type of shocks that affected it last year do not take place again (Chart 210 and Chart 211).

Table 8
Headline and Core Inflation Forecasts
Average annual quarterly rate in percent [1]

	2018				2019			
	I	II	III	IV	I	II	III	IV
CPI								
Current report	5.5	4.8	4.3	3.8	3.2	3.0	3.1	3.2
Previous report	4.6	4.1	3.6	3.0	3.1	3.3	3.1	3.0
Core								
Current report	4.4	4.0	3.8	3.6	3.3	3.2	3.1	3.0
Previous report	4.2	3.9	3.6	3.5	3.3	3.2	3.1	3.1

1 Annual inflation for each quarter is estimated by comparing the average index of the quarter to the average index of the same quarter of the previous year. These figures can differ from the simple average of annual inflations of each month in the corresponding quarter.
Source: Prepared by Banco de México.

These forecasts are subject to risks. The main upward risks are:

i.   Currency depreciation in response to, for example, unfavorable outcomes during NAFTA negotiations, negative market reaction to U.S. monetary policy actions, tighter conditions in international financial markets, or volatility related to the 2018 electoral process.

ii. New unfavorable shocks on agricultural product prices.

iii. Spikes in some energy product prices due to increases in international reference prices or to lack of competition in some markets.

iv. Given the absence of slack in the economy, especially in the labor market, the evolution of unit labor costs could put pressure on inflation.

Among downward risks are:

i. Currency appreciation due to a favorable outcome in NAFTA negotiations.

ii. Lower-than-anticipated economic growth.

The balance of risks for inflation maintains an upward bias, associated with the risk scenarios described above, in an environment of high uncertainty.

Chart 210
Fan Chart: Annual Headline Inflation [1/]
Percent
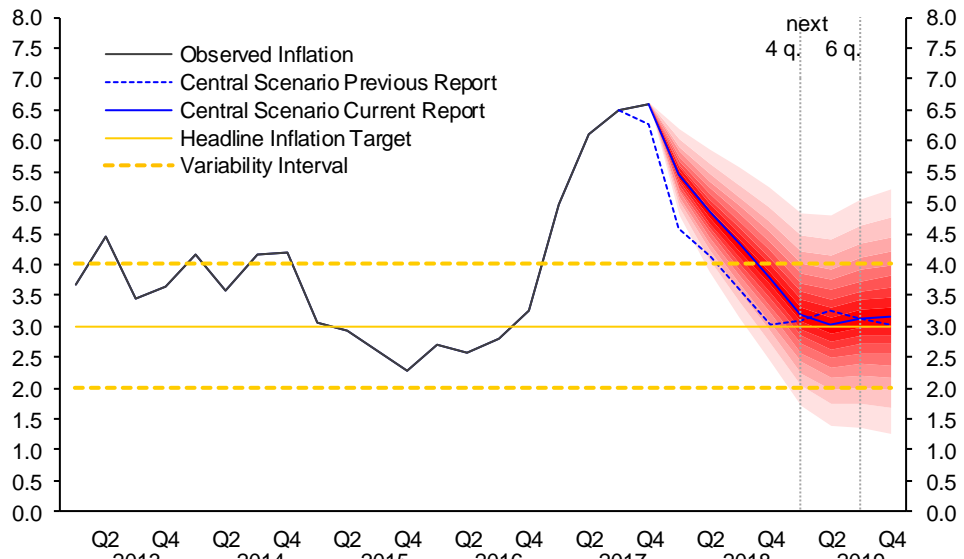
1/ Quarterly average of annual headline inflation. The next four and six quarters are indicated, using as a reference the first quarter of 2018; that is, the first and the third quarters of 2019, time intervals over which monetary policy transmission channels fully operate.
Source: Banco de México and INEGI.

Chart 211
Fan Chart: Annual Core Inflation [1]
Percent
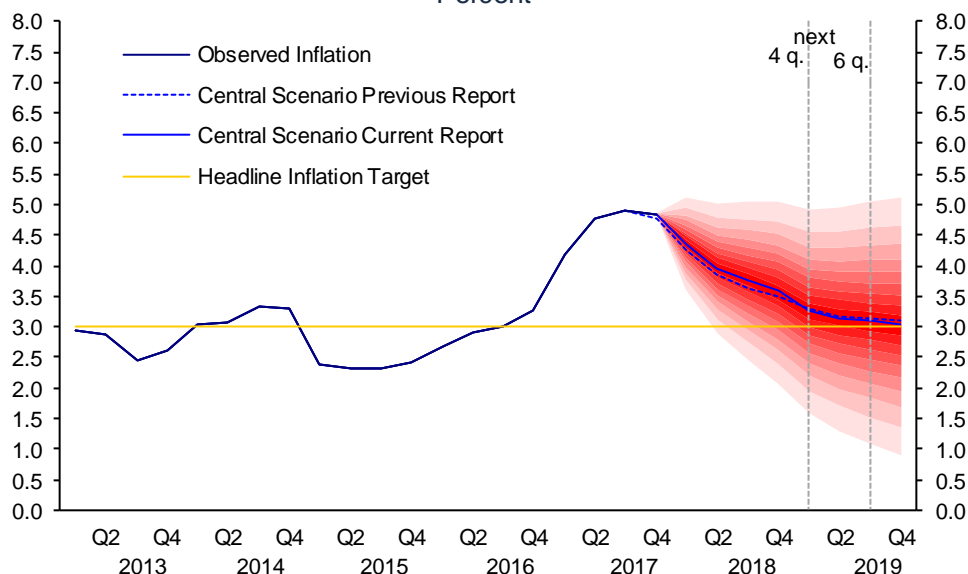
1/ Quarterly average of annual core inflation. The next four and six quarters are indicated, using as a reference the first quarter of 2018; that is, the first and the third quarters of 2019, time intervals over which monetary policy transmission channels fully operate.
Source: Banco de México and INEGI.

In this environment, the Board of Governors will keep monitoring inflation closely with respect to its expected path, taking into consideration the horizon at which the monetary policy operates, as well as the available information on all determinants of inflation, its expectations over the medium and long term, including the potential pass-through of exchange rate fluctuations onto prices, the monetary policy stance of Mexico relative to the U.S. and the evolution of slack conditions in the economy. In the face of risks to inflation and inflation expectations, if required, monetary policy will act in a timely and robust manner to reinforce the anchoring of medium- and long-term inflation expectations and to achieve convergence to the 3 percent target.

Thanks to the monetary policy actions implemented to keep medium- and long-term inflation expectations anchored, combined with the attainment of the fiscal goals in 2017 and the commitment to reach them in 2018, as well as the persistent resilience of the financial system, the Mexican economy is in a better position to face possible adverse scenarios. The early renewal of Mexico's Flexible Credit Line with the International Monetary Fund for the next two years should also be highlighted as recognition of Mexico's solid macroeconomic framework. In the future, in addition to pursuing a prudent and firm monetary policy, it is crucial to implement measures oriented to increase productivity, and that the authorities move forward in the consolidation of sustainable public finances.

In this context, so far, the strengthening of the macroeconomic framework in Mexico has contributed to the continued growth of the Mexican economy, despite a number of severe and simultaneous shocks it has faced. Nonetheless, the Mexican economy continues to face risks in the short and medium terms. To take on the challenges that may arise, it is key for Mexico to adopt the required measures to attain a more efficient allocation of resources and boost its productive capacity. Likewise, actions that help achieve higher productivity and enhance

competitiveness should be sought. Efforts should also be made to revert the downward investment trend and to increase infrastructure development. Additionally, as stated in previous reports, it is important to undertake reforms and broad actions that improve public safety, legal certainty and economic competition, all of which would result in a better environment for investment and economic growth, in lower inflation and a higher welfare for the Mexican population.

Annex

Mexico's Relationship with the International Monetary Fund, the Bank of International Settlements, the Group of Twenty and other Fora

International Monetary Fund

Mexico is a founding member of the International Monetary Fund (IMF) since its creation in 1944. Mexico's quota in this international organization currently amounts to SDR 8.9 billion, with a relative share of 1.87 percent of IMF's total quotas.[64] [65]

During 2017, two issues stood out regarding Mexico's relationship with the IMF: 1) the early renewal of the Flexible Credit Line (FCL) for an additional period of two years, and 2) the consultations under the Article IV of the IMF's Articles of Agreement. Furthermore, Dr. Agustín Carstens, Governor of Banco de México, as Chairman of the International Monetary and Financial Committee (IMFC) of the IMF (between March 23, 2015 and November 30, 2017), chaired two meetings of the aforementioned Committee in 2017, during the Spring and the Annual Meetings of the IMF/World Bank, held in Washington D.C., U.S. in April and October, respectively.[66] [67] [68]

In November 2017, the IMF Executive Board approved the early renewal of Mexico's Flexible Credit Line for two years equivalent to SDR 62.4 billion (approximately USD 88 billion on the date of the approval), as a proof of confidence in the soundness of the Mexican economy.[69] In the context of this approval, the Executive Board stated that Mexico's macroeconomic policies and policy frameworks remain very strong. Moreover, the Executive Board acknowledged that in recent years the Mexican economy has shown resilience, although it anticipated that short-term growth would decline derived from the prolonged uncertainty regarding Mexico's future trade relationships, combined with tighter macroeconomic policies. Hence, a new agreement under the FCL remains important in supporting the authorities' macroeconomic strategy by

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[64] The quota is a member state's total accumulated contribution of resources to the IMF. This quota is the IMF's main source of financing and it determines the voting power of each member country in the IMF's decisions. The member states' quota amounts are based on the relative size of their economies and on the indicators associated with their economic activity levels. The latest contribution of Mexico in February 2016 amounted to SDR 5,287.0 million, after which the total accumulated quota reached the current level of SDR 8,912.7 million.

[65] The Special Drawing Right (SDR) is an international reserve asset, created by the IMF in 1969 to supplement its member countries' official reserves. SDRs can be exchanged for freely usable currencies. The value of the SDR is based on a basket of five reserve asset currencies: the U.S. dollar, the euro, the Chinese renminbi, the Japanese yen, and the British pound sterling.

[66] The IMFC is the primary advisory body for the IMF Board of Governors, which deliberates on the main policy issues that the IMF has to follow. In practice, the IMFC has been a key instrument in providing strategic direction to the IMF. The IMFC, composed of finance ministers and central bank governors, has 24 members, reflecting the composition of the IMF Executive Board. The IMFC functions via consensus, including the process of its Chairman selection. Several international institutions participate as observers in the IMFC meetings.

[67] See the Press Release of the 35th Meeting of the IMFC, of April 22, 2017.

[68] See the Press Release of the 36th Meeting of the IMFC, of October 14, 2017.

[69] See the Press Release of the Foreign Exchange Commission of November 30, 2017.

providing an insurance against external risks and by granting confidence to markets. Since 2009, Mexico has assigned a precautionary nature to this credit line.

Additionally, in November 2017, the IMF announced the results of the consultations to Mexico under the Article IV of the IMF's Articles of Agreement, which represent the surveillance and assessment exercise carried out by the Fund with each member state.[70][71] In its last report regarding the economic and financial conditions in Mexico, the IMF Executive Board highlighted that strong fundamentals and the authorities' persistent commitment to macroeconomic stability have been key for the Mexican economy to show outstanding strength, to continue generating jobs and to successfully go through a complex external environment, characterized by the uncertainty over the North American Free Trade Agreement (NAFTA) renegotiation. The IMF agreed that, in light of external risks, the flexible exchange rate policy has been highly important to adjust shocks from abroad in an orderly manner. It was also stressed that the solid macroeconomic stability is strongly underpinned by: i) the implementation of responsible fiscal and monetary policies, particularly via a continuous process of fiscal consolidation and a cautious monetary policy stance, ii) the early results of the ambitious agenda of structural reforms implemented in Mexico, and iii) the well-capitalized financial system, resilient to market, liquidity and credit risks, and characterized by strong supervision and regulation frameworks.

Bank for International Settlements

The main mission of the Bank for International Settlements (BIS) is to support central banks' efforts in their pursuit of monetary and financial stability, to foster international cooperation in those areas, and to act as a bank for central banks. To fulfil this mission, the BIS: i) encourages dialogue and collaboration among central banks and other authorities responsible for promoting financial stability, via bimonthly meetings and other recurring consultative fora, where the main economic events and the outlook for the world economy and international financial markets are analyzed; ii) conducts research on policy issues confronting central banks and financial supervisory authorities; iii) acts as a prime counterparty for central banks in their financial transactions; and iv) serves as an agent or trustee in connection with international financial operations.

Banco de México became a member of the BIS in 1996. Since then, it has actively participated in its meetings, fora, and committees as well as in some of its governing bodies.

In 2017, the Governor of Banco de México was Chairman of the Economic Consultative Committee (ECC) and in the Global Economic Meeting (GEM) (appointment effective on July 1, 2013, until November 30, 2017). These

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[70] See Press Release of the IMF of November 13, 2017.
[71] To carry out the consultations, an IMF Mission visits the member country, gathers and analyzes its economic and financial data, and meets with the competent authorities to discuss the country's economic situation, its outlook, and the economic policy measures being implemented. Based on these consultations, the IMF technical staff elaborates and submits a country report for discussion to the Executive Board. Afterward, the IMF informs the country's authorities about its conclusions and recommendations.

meetings focus on the analysis of recent economic developments along with the outlook for the world economy and financial markets and are a forum to exchange opinions and experiences on central banks' issues. In particular, the GEM guides and assesses the development, risks, and opportunities of the world economy and financial system. It also guides the work and receives reports from three Basel-based central bank committees that work towards the design and implementation of norms on regulation and supervision and financial stability.[72] Additionally, the ECC is in charge of supporting GEM activities, especially preparing the analysis and the proposals submitted to its consideration. Throughout 2017, the discussion in the meetings of these fora explored recent macroeconomic and financial developments in major advanced and emerging market economies as well as issues of particular interest to central banks.

Banco de México's Governor also took an active role in the work of the BIS' Board of Directors, of which he was a member between January 2011 and November 2017. This body is responsible, among other issues, for determining the strategic and policy direction of this international institution, overseeing its operations and addressing its governance issues, appointing its main executive officers, and supervising their performance. In particular, Governor Carstens participated in the activities of the Banking and Risk Management Committee, one of the advisory committees of this Board in charge of analyzing and evaluating the BIS' financial objectives, the banking operations business model and its risk management framework.

The Governor also participated in the Group of Central Bank Governors and Heads of Supervision (GHOS), which analyzes the initiatives aimed at promoting a resilient international financial system and advance in the agenda of regulatory and supervision reforms to enhance global financial stability. Moreover, this Group establishes guidelines and strategic priorities in the work program of the Basel Committee on Banking Supervision.

Banco de México was also involved in the activities of other recurring consultative fora organized by the BIS, in which more detailed issues or with a particular impact on a specific group of economies or regions are discussed. Among these meetings, the following should be underscored: 1) the Central Bank Governance Group, which goal is the exchange of information and research regarding the design and operation of central banks as public policy institutions, and where criteria and priorities relative to the monetary authorities' governance are established; 2) the Major Emerging Market Economies, where the impact of the international economic juncture on emerging markets and the measures adopted by this group of countries are analyzed; and 3) the Consultative Council for the Americas (CCA), which seeks to strengthen the BIS research agenda with the central banks of the region, in order to take into account topics of their specific interest and concern.

On December 1, 2017, Dr. Agustín Carstens became General Manager of the BIS, after the Board of Directors of this international entity elected him for a period of 5 years.

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[72] The Committee on the Global Financial System (CGFS), the Committee on Payments and Market Infrastructures (CPMI) and the Markets Committee.

Financial Stability Board

The main goal of the Financial Stability Board (FSB) is to coordinate the activities of the national financial authorities and international standard-setting bodies, as well as to promote the implementation of effective financial regulation and supervision policies in order to foster global financial stability.

During 2017, Banco de México actively participated in the Plenary meetings of the FSB's Steering Committee and Regional Consultative Group for the Americas, along with other working groups where the following issues, among other topics, were discussed: potential vulnerabilities and risks that could affect the global financial system and the policy actions needed to address them, FSB's priorities for 2017 and its work plan for 2017-2018. Among the most relevant topics for this forum in 2017, the following stand out: monitoring and reporting to the public on the progress by the members of the Board in relation with the full, timely and consistent implementation of the reforms' agenda agreed upon in the wake of the 2008 crisis, including Basel III; the assessment of the effects of said reforms on financial intermediation, including handling their unintended consequences; the annual reviews of the lists of global systemically important banks and insurance companies; the state of regulations and supervisory practices with respect to cybersecurity in the financial system, as well as existing international guidance in this topic; the implications of the innovation and digitalization of financial services (FinTech) from a banking supervision and a financial stability perspectives; and efforts to strengthen governance frameworks and compensation practices in the financial market and to address misconduct risks from their participants.

The Group of Twenty

The Group of Twenty (G20) is the main forum for international dialogue and cooperation, seeking to contribute to economic and financial growth and stability. Advanced and emerging market economies participate in this forum, representing as a whole around 85 percent of the world's GDP, 75 percent of global trade and 66 percent of total population. The most relevant financial and economic topics are discussed in this forum in order to foster strong, sustainable, balanced and inclusive growth. Likewise, this forum seeks to promote an open and constructive dialogue on the relevant issues related to the global monetary and financial system and to help strengthen the international financial architecture.

During 2017, Germany held the presidency of the G20, and its work agenda was focused on enhancing the economies' stability and resilience, on fostering private investment (particularly in Africa) and on maximizing opportunities and identifying risks derived from the digitalization of the financial services. Additionally, Germany's presidency made an emphasis on implementing the necessary measures to tackle digitalization to preserve financial stability. The action plan adopted during this presidency included macroeconomic measures to boost growth and job creation in the short term, along with structural reforms to increase productivity and welfare in the medium and long terms. Germany's G20 presidency held the Leaders' Summit on July 7 and 8 in Hamburg, Germany.

To fulfill Mexico's commitments before the G20, both the Ministry of Finance (SHCP, for its acronym in Spanish) and Banco de México participated in the meetings of Finance Ministers and Central Bank Governors, as well as in their Deputies' meetings, and in the activities of some working groups of the G20 Finance Track: Framework for Strong, Sustainable and Balanced Growth; International Financial Architecture; Investment; Global Alliance for Financial Inclusion; and Sustainable Finance.

Argentina took on the G20 presidency on December 1, 2017. The priorities of the work agenda of Argentina regarding the Finance Track in this forum are the following: i) the future of work for jobs that are at risk of being replaced by automation, and; ii) develop infrastructure projects as a financial asset class.

Center for Latin American Monetary Studies (CEMLA)

CEMLA was formally established in September 1952. Banco de México was one of the seven founding central banks and one of the main driving forces behind its creation. Currently, the Center has 53 members, 30 of which are Associates (with the right of voice and vote) and 23 Collaborating Members (only with the right of voice).

The main goals of CEMLA are: 1) to promote a better understanding of monetary and banking topics as well as fiscal and exchange rate policy issues in Latin America and the Caribbean; 2) to help improve the training of central banks and other financial bodies' staff in Latin America and the Caribbean by organizing seminars and special training courses, as well as the publication of research studies; 3) to conduct research and systematize the results obtained in the aforementioned areas; and 4) to inform its members regarding topics of international and regional interest related to monetary and financial policies.

As an Associate of this Center, Banco de México participated in different Governors' meetings, as well as the meetings of the Assembly held in 2017. Furthermore, Banco de México is a permanent member of CEMLA's Board of Governors, the Alternates Committee and the Auditing Committee, governing bodies which approve, among other things, the strategic plan, work program, budget, and guidelines to improve the governance of the Center. It should be noted that in its presiding capacity of the Auditing Committee, Banco de México organized the work plan of the Committee during 2017, and hosted the Autumn meeting, held on August 31, 2017, in Mexico City. Banco de México was also in charge of preparing and presenting the Committee's 2017 Annual Report before the Board of Governors.

It is worth mentioning that the meeting of the Board of Governors and the Assembly focused on CEMLA's operational, administrative and good governance issues. Meanwhile, during the meetings of Governors, the following topics were discussed: those related to the international economic and financial outlook, progress in the financial regulation agenda, digitalization and financial inclusion, optimal management of reserves, the reaction of the monetary policy to external events, topics under discussion in the G20, as well as the challenges faced by central banks in Latin America, among others.

In order to support CEMLA's training efforts and to strengthen its human capital, during 2017, Banco de México's staff actively participated in different seminars,

workshops, courses and technical meetings offered by this Center, some of which were even organized by this Central Bank.

Statistical Appendix

Contents

Basic Information

Table A 1
Summary of Selected Indicators

	2013	2014	2015	2016	2017 [p/]
Social and demographic indicators					
Population (millions) [1/]	118.4	119.7	121.0	122.3	123.5
Total population growth rate [1/]	1.1	1.1	1.1	1.0	1.0
Life expectancy [1/]	74.5	74.7	75.0	75.2	75.3
Production and prices					
Gross Domestic Product (GDP) in MXN billion [p/]	16,277	17,471	18,537	20,100	21,767
			Annual change in percent		
GDP at 2008 constant prices [p/]	1.4	2.8	3.3	2.9	2.0
Consumer Price Index (Dec - Dec)	3.97	4.08	2.13	3.36	6.77
Money and finances					
Monetary aggregates [2/]			Real annual change in percent		
Monetary base	2.4	9.1	16.9	12.7	4.6
M1	4.4	9.9	15.0	11.4	5.5
M2	3.6	6.3	5.3	5.2	3.5
M4	9.0	6.8	6.2	1.7	1.6
Interest rates [3/]					
28-day Cetes	3.75	3.00	2.98	4.15	6.69
28-day TIIE (Interbank Equilibrium Interest Rate) [5/]	4.28	3.52	3.32	4.47	7.06
			MXN/USD		
Exchange rate (end of period) [4/]	13.0765	14.7180	17.2065	20.7314	19.7867
Public finances			Percent of GDP		
Public balance [5/]	-2.3	-3.1	-3.4	-2.5	-1.1
Primary balance [5/]	-0.4	-1.1	-1.2	-0.1	1.4
Public Sector Borrowing Requirements	-3.7	-4.5	-4.0	-2.8	-1.1
Net Public Debt [6/]	33.2	37.5	40.5	43.1	41.1
External Sector			Percent of GDP		
Trade balance	-0.1	-0.2	-1.3	-1.2	-0.9
Current account	-2.4	-1.8	-2.5	-2.1	-1.6
Capital account	0.2	0.0	0.0	0.0	0.0
Cuenta Financiera	-3.3	-3.2	-3.7	-2.9	-2.3
Pasivos de Deuda Totales [7/]	44.8	47.1	52.6	55.3	53.7
Débito por Intereses [8/]	1.5	1.6	1.7	1.9	1.9
			Miles de Millones de Dólares		
Reservas Internacionales Brutas (fin de periodo) [8/]	180.2	195.7	177.6	178.0	175.5

1/ 1990-2010 basic demographic indicators and 2010-2050 Mexico's population projections of the National Council of Population (*Consejo Nacional de Población, CONAPO*).
2/ Estimates based on the average of monthly outstanding stocks. The contents of this table differ from those presented in "Compilation of Quarterly Reports Released in 2016" as on January 31, 2018 Banco de México released the redefinition of monetary aggregates statistics.
3/ Average during the period.
4/ Used to settle liabilities in foreign currency.
5/ Based on the revenue-expenditure methodology.
6/ Refers to the broad economic debt, which includes net liabilities of federal government, public entities, public enterprises and official financial intermediaries (development banks and trust funds). Outstanding stocks at end of period. Calculated by Banco de México.
7/ Excludes liabilities of financial derivatives.
8/ Includes both public and private sectors.
p/ Preliminary figures.
Source: CONAPO, Mexico's System of National Accounts (*Sistema de Cuentas Nacionales de México*), INEGI, Banco de México, Mexican Stock Exchange and Ministry of Finance (*Secretaría de Hacienda y Crédito Público*, SHCP).

Table A 2
Socio-Demographic Indicators

	2010	2011	2012	2013	2014	2015	2016	2017
Population (millions) [1]	114.3	115.7	117.1	118.4	119.7	121.0	122.3	123.5
Urban population [2]	76.2	76.1	76.1	76.0	76.1	76.2	76.4	76.5
Rural population [2]	23.8	23.9	23.9	24.0	23.9	23.8	23.6	23.5
Population by sq.km	58.2	58.9	59.6	60.3	61.1	61.8	62.4	63.0
Total population grow th rate [3]	1.3	1.2	1.2	1.1	1.1	1.1	1.0	1.0
National unemployment rate [4]	5.3	5.2	4.9	4.9	4.8	4.3	3.9	3.4
Unemployment rate (in urban areas) [5]	6.4	5.9	5.8	5.7	5.9	5.1	4.7	4.0
Life expectancy (years)	74.0	74.1	74.3	74.5	74.7	75.0	75.2	75.3
Fertility rate [6]	2.3	2.3	2.2	2.2	2.2	2.2	2.2	2.2
Mortality rate (per thousand)	5.2	5.1	5.1	5.3	5.3	5.4	5.5	5.6
Infant mortality rate (per thousand live births)	14.1	13.7	13.3	13.0	12.5	12.5	12.3	12.3
Number of hospital beds (per 100 000 inhabitants) [7]	74.1	74.0	73.2	73.9	74.5	72.5	72.9	73.3
Illiteracy rate (population 15 years or older) [8]	7.0	6.9	6.5	6.2	6.0	5.7	5.0	4.7
Number of students per teacher (grade school) [8]	26.1	26.1	26.0	25.7	25.4	25.0	24.8	24.7
Population w ith access to drinking w ater [2,8]	91.2	91.6	92.0	92.3	92.4	94.3	94.4	94.4

1/ 1990-2010 basic demographic indicators and 2010-2050 Mexico's population projections of the National Council of Population (CONAPO).
2/ Percentage of total population. The estimate of the population by area of residence is based on the population projections by size of locality 2010 - 2030.
   For y ears prior to 2010, there are no av ailable data.
3/ Av erage annual growth rate including the net migration balance.
4/ Ratio of unemployed population to economic active population. The unemployed population is comprised of individuals that were not engaged in working
   activ ities during the ref erence week, but were searching f or work during the last month.
   Figures correspond to the population of 15 y ears and older.
5/ Unemploy ment rate in 32 cities. Figures correspond to the population of 15 y ears and older.
6/ At the end of women's reproductiv e lif e.
7/ Only data f rom public sector institutions. Data estimated in 2017.
8/ Data estimated in 2017.
n.a. Not av ailable.
Source: Annual Gov ernment Report 2017, Mexico's Presidency ; CONAPO and INEGI, Occupation and Employ ment Surv ey .

Table A 3
Infrastructure

	2010	2011	2012	2013	2014	2015	2016	2017
National road network [1/][2/]								
Roads (km)	371,936	374,262	377,660	378,922	389,345	390,267	393,471	393,471
Federal toll roads (km)	8,397	8,459	8,900	9,174	9,457	9,669	9,818	9,818
Federal non-toll roads (km)	40,575	40,643	40,752	40,812	40,783	40,700	40,697	40,697
Paved roads (km) [3/]	138,404	141,361	146,221	148,329	155,239	156,762	164,493	164,493
Railroad transportation [2/]								
Total railroad network (km)	26,715	26,727	26,727	26,727	26,727	26,727	26,727	26,891
Passengers (million passengers/km) [4/]	844	891	970	1,036	1,150	1,411	1,481	771
Commercial cargo (million tons/km) [5/]	78,770	79,728	79,353	77,717	80,683	83,401	84,694	42,945
Air transportation [2/]								
Number of international airports	64	64	64	64	63	63	64	64
Passengers (thousands) [6/]	48,698	50,764	55,153	60,007	65,135	73,265	81,286	44,309
Cargo (thousand tons) [6/]	571	562	559	582	618	655	685	347
Sea transportation [2/]								
Number of ports (sea and river)	116	117	117	117	117	117	117	117
Sea fright (international and domestic cargo, thousand tons)	272,811	282,902	283,462	288,696	286,761	292,646	297,199	150,135
Communications [2/]								
Phones (thousand lines in service)	19,919	19,731	19,791	18,594	18,560	19,335	19,600	20,036
Mobile phones (thousand subscribers)	91,384	94,583	100,727	106,748	104,948	107,688	111,728	112,055
Telegraph services (number of offices)	1,588	1,592	1,615	1,620	1,677	1,683	1,715	1,715
Postal services (locations served)	16,966	17,080	16,903	17,021	16,964	12,311	12,338	12,340
Radio stations [7/]	1,472	1,485	2,147	2,263	1,745	2,130	1,739	1,766
TV stations [7/]	688	693	1,044	1,037	1,072	1,157	894	763
Lodging (number of rooms)	638,494	651,160	660,546	627,296	692,351	736,512	763,990	n.a.
Energy								
Electric power generation (gigawatts/hour) [8/]	274,701	290,755	294,637	296,342	301,467	308,970	318,363	127,076
Oil reserves (million barrels) [9/]	43,075	43,074	43,837	44,530	42,158	37,405	22,223	22,149

1/ It refers to the National Road Inventory of December each year.
2/ Preliminary figures in 2016 and estimates in 2017.
3/ For 2013, it excludes road sections constructed and/or modernized, that are in the process of completion and delivery/reception.
4/ Since June 2008 onwards, figures include intercity and suburban service.
5/ Excluding baggage and express service.
6/ Figures as of December of each year. In 2017 figures are preliminary as of June.
7/ Includes broadcasting, concessions and licenses.
8/ Includes Federal Electricity Commission (*Comisión Federal de Electricidad*, CFE), Central Light and Power Company (*Luz y Fuerza del Centro*, LFC) and external energy producers.
9/ As of January 1st of each year.
n.a. Not available.
Source: Annual Government Report 2017, Mexico's Presidency and PEMEX.

Table A 4
Mexican Financial System

REGULATORY AUTHORITIES

MINISTRY OF FINANCE (*Secretaría de Hacienda y Crédito Público*, SHCP)	BANCO DE MÉXICO
NATIONAL BANKING AND SECURITIES COMMISSION (*Comisión Nacional Bancaria y de Valores*, CNBV)	NATIONAL INSURANCE AND BONDING COMMISSION (*Comisión Nacional de Seguros y Fianzas*, CNSF)
NATIONAL COMMISSION FOR PROTECTION AND DEFENSE OF FINANCIAL SERVICES USERS (*Comisión Nacional para la Protección y Defensa de los Usuarios de Servicios Financieros*)	NATIONAL COMMISSION FOR THE RETIREMENT SAVINGS SYSTEM (*Comisión Nacional de Sistema de Ahorro para el Retiro*)

FINANCIAL INSTITUTIONS

FINANCIAL GROUPS	CREDIT INSTITUTIONS	SECURITIES MARKET	OTHER FINANCIAL INTERMEDIARIES AND CREDIT INFORMATION COMPANIES	
23 Financial holding companies	53 Commercial banks[1/]	1 Mexican stock exchange	100 Insurance corporations[3/]	89 Credit unions
	6 Development banks	36 Brokerage houses	17 General warehousing storage	15 Financial guarantee corporations
	2 Development trust funds	622 Investment corporations [2/]	46 Multiple-purpose non-bank financial corporations, regulated entities	8 Foreign exchange companies
		73 Investment corporations specialized in retirement savings		157 Savings and loan associations
		1 Derivatives exchange		2 Credit bureaus

1/ The number of financial entities refers to those authorized as of December 2017.
2/ Includes stock investment funds, fixed-income investment funds for individuals and enterprises, and equity investment funds.
3/ Includes insurance corporations, pension funds, health insurance corporations, housing finance insurance corporations, and standardized guarantee insurance corporations.
Data as of December 2017.
Source: Banco de México.

Production and Employment

Table A 5
Main Production Indicators
2013 prices
Annual change in percent

	2013	2014	2015	2016	2017 p/
Gross Domestic Product	1.4	2.8	3.3	2.9	2.0
Private consumption	1.8	2.1	3.4	3.7	3.0
Public consumption	0.5	2.9	1.9	2.4	0.1
Private investment	-3.8	4.5	8.9	2.2	-0.6
Public investment	-1.6	-2.4	-10.8	-4.2	-6.4
Exports (goods and services)	1.4	7.0	8.4	3.5	3.8
Imports (goods and services)	2.1	5.9	5.9	2.9	6.4

p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI.

Table A 6
Gross Domestic Product

	MXN million at current prices	Exchange rate 1/	USD million
2012	15,817,754.6	13.1613	1,201,835.3
2013	16,277,187.1	12.7724	1,274,404.0
2014	17,471,466.8	13.3056	1,313,091.2
2015	18,536,531.3	15.8680	1,168,168.2
2016	20,099,594.4	18.6908	1,075,371.8
2017 p/	21,766,927.9	18.9197	1,150,488.6

1/ Exchange rate used to settle liabilities denominated in foreign currency, average of the period.
p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI; Banco de México.

Table A 7
Aggregate Supply and Demand
2013 prices

	Annual change in percent					Percent of GDP	
	2013	2014	2015	2016	2017 p/	2013	2017 p/
Aggregate supply	1.5	3.6	3.9	2.9	3.2	132.5	135.8
GDP	1.4	2.8	3.3	2.9	2.0	100.0	100.0
Imports	2.1	5.9	5.9	2.9	6.4	32.5	35.8
Aggregate demand	1.5	3.6	3.9	2.9	3.2	132.5	135.8
Total consumption	1.6	2.2	3.1	3.5	2.6	78.7	78.9
Private	1.8	2.1	3.4	3.7	3.0	66.5	67.2
Public	0.5	2.9	1.9	2.4	0.1	12.2	11.8
Total investment	-3.4	3.1	5.0	1.1	-1.5	21.3	20.5
Private	-3.8	4.5	8.9	2.2	-0.6	16.8	17.4
Public	-1.6	-2.4	-10.8	-4.2	-6.4	4.4	3.1
Exports	1.4	7.0	8.4	3.5	3.8	31.3	35.0

p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI.

Table A 8
Aggregate Supply and Demand
Annual change in percent with respect to the same period of last year

	2014	2015	2016	2017 p/				
				I	II	III	IV	Annual
Aggregate supply	3.6	3.9	2.9	4.4	2.7	2.6	3.0	3.2
GDP	2.8	3.3	2.9	3.3	1.8	1.6	1.5	2.0
Imports	5.9	5.9	2.9	7.9	5.3	5.5	7.1	6.4
Aggregate demand	3.6	3.9	2.9	4.4	2.7	2.6	3.0	3.2
Total consumption	2.2	3.1	3.5	2.9	2.8	2.5	2.0	2.6
Private	2.1	3.4	3.7	3.1	3.3	3.1	2.5	3.0
Public	2.9	1.9	2.4	1.8	0.0	-1.1	-0.2	0.1
Total investment	3.1	5.0	1.1	0.1	-3.0	-0.6	-2.4	-1.5
Private	4.5	8.9	2.2	1.1	-1.2	0.2	-2.4	-0.6
Public	-2.4	-10.8	-4.2	-5.8	-12.9	-5.0	-2.4	-6.4
Exports	7.0	8.4	3.5	9.1	4.6	-0.4	2.5	3.8

p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI.

Table A 9
Domestic Saving and Investment
Percent of GDP at current prices

Item	2012	2013	2014	2015	2016	2017 p/
Financing of gross capital formation [1]	23.9	22.5	21.9	23.3	23.8	23.2
Financed with external savings [2]	1.5	2.4	1.8	2.5	2.1	1.7
Financed with domestic savings	22.4	20.1	20.1	20.8	21.6	21.5

1/ Includes gross capital formation plus change in inventories.
2/ Current account stocks of the balance of payments, measured in current MXN and as a proportion of GDP.
p/ Preliminary figures.
Source: Prepared by Banco de México with data from Mexico's System of National Accounts, INEGI and Banco de México.

Table A 10
Gross Domestic Product by Sector
2013 prices

	Annual change in percent					Percent of GDP	
	2013	2014	2015	2016	2017 p/	2013	2017 p/
Total	1.4	2.8	3.3	2.9	2.0	100.0	100.0
Primary sector	2.3	3.8	2.1	3.8	3.3	3.1	3.2
Secondary sector	-0.2	2.6	1.1	0.4	-0.6	31.9	29.6
Mining	-0.6	-1.9	-4.4	-4.1	-9.8	7.1	5.2
Electricity, water supply and pipeline gas supply	0.6	8.1	1.7	0.1	-0.2	1.5	1.5
Construction	-1.6	2.7	2.4	2.0	-1.0	7.4	7.1
Manufacturing industry	0.5	4.0	2.7	1.5	2.9	15.8	15.8
Tertiary sector	2.2	2.7	4.3	3.9	3.0	61.1	62.8
Wholesale commerce	0.7	6.1	5.3	2.0	3.0	7.9	8.3
Retail commerce	2.7	1.7	3.4	3.5	3.6	8.9	9.0
Transport, mail and warehousing services	2.5	3.5	4.3	3.1	3.2	6.2	6.4
Mass media services	4.3	4.5	16.9	19.1	6.1	2.0	2.8
Financial and insurance services	16.0	8.6	14.8	12.2	7.8	3.5	4.7
Real estate and leasing services	0.9	1.8	2.5	2.0	2.0	11.4	11.1
Professional, scientific and technical services	-1.2	1.7	4.2	7.5	-0.4	1.9	1.9
Corporate and firm management services	-1.7	7.2	4.3	-0.2	1.1	0.6	0.6
Business support services, waste management and remediation services	4.4	-0.3	1.3	4.3	5.6	3.5	3.5
Educational services	0.5	0.5	-0.1	1.0	0.2	4.1	3.7
Health and social assistance services	1.1	-0.3	-1.8	2.7	2.4	2.3	2.1
Cultural and sport services, and other recreational services	7.0	-4.2	4.1	4.5	3.1	0.5	0.4
Temporary lodging services, and food and beverage-related services	1.1	2.7	7.5	3.2	4.3	2.1	2.3
Other services, except for government-related services	1.8	1.4	2.4	2.6	1.1	2.1	2.0
Government-related activities	-1.4	2.0	2.4	0.3	0.1	4.1	3.9

p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI.

Table A 11
Manufacturing
2013 prices

	Annual change in percent				Percent of GDP	
	2014	2015	2016	2017 p/	2013	2017 p/
Total	4.0	2.7	1.5	2.9	15.8	15.8
Food industry	0.2	2.2	2.7	1.6	3.7	3.5
Beverage and tobacco industries	3.3	5.3	7.6	2.3	0.8	0.9
Textile input manufacturing	-1.9	5.0	-0.7	0.2	0.2	0.1
Textile manufacturing (except for apparel)	5.9	6.9	3.9	-11.7	0.1	0.1
Apparel industry	-0.2	4.1	-1.7	0.4	0.4	0.3
Leather product industry (except for leather clothing)	-0.7	1.9	-0.7	-3.1	0.1	0.1
Timber industry	1.4	3.8	-4.7	5.0	0.1	0.1
Paper industry	2.7	3.5	3.5	2.1	0.3	0.3
Printing and printing-related industries	-0.2	2.0	0.4	-1.8	0.1	0.1
Oil and coal by-product industries	-4.8	-7.1	-13.1	-18.2	0.5	0.3
Chemical industry	-1.3	-3.6	-2.8	-1.1	1.7	1.4
Plastic and rubber industry	2.5	5.8	-0.9	4.1	0.4	0.4
Non-metal mineral products industry	2.8	6.6	2.3	-0.7	0.4	0.4
Basic metal industry	8.1	-5.6	1.9	2.1	1.1	1.0
Metal products industry	5.4	3.4	0.8	0.4	0.5	0.5
Machinery and equipment	9.0	0.9	1.6	9.3	0.7	0.7
Manufacturing of measurement and other equipment, components and accessories	12.7	7.5	6.1	6.8	1.1	1.3
Manufacturing of electric supply equipment and electric devices and accessories	6.8	5.8	4.5	1.1	0.5	0.5
Transport equipment manufacturing	9.6	6.8	1.2	8.7	2.7	3.1
Manufacturing of furniture and furniture-related products	-3.4	7.2	-3.4	-4.1	0.2	0.2
Other manufacturing industries	3.2	3.3	3.9	5.7	0.3	0.3

p/ Preliminary figures.
Source: Mexico's System of National Accounts, INEGI.

Table A 12
Crude Oil, Gas Production and Crude Oil Reserves

Year	Crude oil (Million barrels)		Natural gas (Million cubic feet per day)	Total oil reserves[1] (Billion barrels)
	Total	Daily average	Total	Total
2003	1,230.4	3.371	4,498	50.0
2004	1,238.1	3.383	4,573	48.0
2005	1,216.7	3.333	4,818	46.9
2006	1,188.3	3.256	5,356	46.4
2007	1,122.6	3.076	6,058	45.4
2008	1,021.7	2.792	6,919	44.5
2009	949.5	2.601	7,031	43.6
2010	940.6	2.577	7,020	43.1
2011	931.7	2.553	6,594	43.1
2012	932.5	2.548	6,385	43.8
2013	920.6	2.522	6,370	44.5
2014	886.5	2.429	6,532	42.2
2015	827.4	2.267	6,401	37.4
2016	788.2	2.154	5,792	22.2
2017 [p]	711.1	1.948	5,068	22.1

1/ Figures up to January 1st.
p/ Preliminary figures.
Source: Institutional Database and Oil Statistics (*Indicadores Petroleros*), PEMEX.

Table A 13
Employment: IMSS-insured Workers [1]
Thousands

Year [2]	Permanent	Temporary in urban areas	Total
2012	13,848	2,054	15,902
2013	14,250	2,105	16,356
2014	14,783	2,269	17,052
2015	15,381	2,304	17,685
2016	16,031	2,373	18,404
2017	16,676	2,509	19,184
2016 Jan	15,391	2,342	17,733
Feb	15,492	2,388	17,880
Mar	15,533	2,395	17,928
Apr	15,611	2,412	18,023
May	15,666	2,415	18,082
Jun	15,761	2,426	18,187
Jul	15,783	2,433	18,216
Aug	15,861	2,460	18,321
Sep	15,986	2,486	18,471
Oct	16,109	2,519	18,628
Nov	16,206	2,531	18,737
Dec	16,031	2,373	18,404
2017 Jan	16,047	2,424	18,470
Feb	16,142	2,471	18,612
Mar	16,255	2,496	18,751
Apr	16,285	2,499	18,784
May	16,350	2,510	18,860
Jun	16,448	2,529	18,978
Jul	16,475	2,548	19,023
Aug	16,562	2,578	19,139
Sep	16,665	2,589	19,254
Oct	16,786	2,649	19,435
Nov	16,872	2,669	19,542
Dec	16,676	2,509	19,184

1/ Permanent and temporary workers in urban areas.
2/ Data as of the end of the year.
Source: Mexican Social Security Institute (*Instituto Mexicano del Seguro Social*, IMSS).

Table A 14
Employment and Unemployment Indicators [1]
Percent

		In regard to economic active population			In regard to employed population		
		National unemployment rate [2]	Unemployment rate in urban areas [3]	Partial employment and unemployment rate [4]	Under-employment rate [5]	Informal labor rate [6]	Employment rate in the informal sector [7]
2014		4.8	5.9	11.0	8.1	57.8	27.4
2015		4.3	5.1	10.6	8.4	57.8	27.4
2016		3.9	4.7	9.9	7.7	57.3	27.1
2017		3.4	4.0	9.2	7.1	57.0	26.9
2016	I	4.0	4.7	10.2	7.9	57.4	27.1
	II	3.9	4.7	10.0	7.9	57.2	27.1
	III	4.0	5.0	10.0	7.8	57.4	27.1
	IV	3.5	4.3	9.4	7.1	57.2	27.2
2017	I	3.4	3.8	8.9	7.1	57.2	27.3
	II	3.5	4.0	9.4	7.2	56.5	27.0
	III	3.6	4.3	9.4	7.0	57.2	26.6
	IV	3.3	3.9	9.1	6.8	57.0	26.9

1/ Figures refer to individuals 15 years old and older.
2/ Ratio of unemployed population to economic active population. The unemployed population is composed of individuals that were not engaged in working activities during the reference week, but were looking for a job during the previous month.
3/ Unemployment rate in 32 cities is generated based on data from the monthly National Employment Survey (ENOE).
4/ Percent of economic active population that is not working, plus the individuals that worked less than 15 hours during the reference week.
5/ Employed individuals needing and willing to work more hours than those spent in their current jobs.
6/ It refers to the sum, without duplicating, of the vulnerable individuals in terms of work, due to the nature of the economic unit they work for, with those whose work ties and employee status are not recognized as their source of employment. This rate includes –besides those working in non-registered small businesses or in the informal sector– other analogous modalities, such as self-employed in subsistence agriculture, as well as workers without the social security and whose services are used by registered economic units.
7/ Percent of employed population working in economic non-agricultural units operating with no accounting records and financed with households' funds, or by an individual in charge of the activity, without identifying it as an independent enterprise. Thus, this production unit is not an identifiable entity, independent from the household or an individual in charge of it. Therefore, this production unit ends up operating on a small scale.
Source: National Employment Survey (*Encuesta Nacional de Ocupación y Empleo*, ENOE), INEGI.

Table A 15
Real Exchange Rate Index [1]

Year		Index 1990 = 100			Annual change in percent		
		Bilateral with respect to the U.S.	Multilateral GDP-weighted [2]	Multilateral trade-weighted [3]	Bilateral with respect to the U.S.	Multilateral GDP-weighted [2]	Multilateral trade-weighted [3]
1999		88.0	77.6	84.4	-8.1	-8.1	-8.9
2000		82.2	68.7	77.4	-6.7	-11.5	-8.3
2001		78.5	62.7	72.4	-4.5	-8.8	-6.4
2002		78.4	60.9	71.9	-0.1	-2.7	-0.6
2003		85.7	71.6	80.4	9.3	17.5	11.8
2004		88.0	77.0	84.0	2.6	7.5	4.4
2005		84.4	73.7	81.3	-4.0	-4.3	-3.2
2006		84.1	72.7	81.3	-0.3	-1.2	0.0
2007		83.4	74.8	82.2	-0.8	2.9	1.1
2008		83.8	78.2	84.0	0.4	4.5	2.2
2009		96.5	88.6	95.8	15.1	13.4	14.2
2010		88.0	81.7	88.7	-8.7	-7.9	-7.5
2011		86.3	82.9	88.3	-2.0	1.5	-0.4
2012		89.7	84.0	91.2	4.0	1.3	3.2
2013		85.0	77.6	86.1	-5.2	-7.6	-5.6
2014		86.4	77.0	87.1	1.7	-0.7	1.1
2015		100.5	82.0	98.1	16.2	6.5	12.7
2016		116.5	95.1	113.5	16.0	15.9	15.7
2017		113.8	92.9	112.1	-2.3	-2.4	-1.2
2016	I	112.1	90.8	108.5	19.1	16.5	17.2
	II	113.8	94.0	111.1	16.2	17.4	15.8
	III	117.7	97.2	115.2	12.3	14.2	13.1
	IV	122.5	98.6	119.0	16.6	15.9	16.8
2017	I	123.6	98.2	120.1	10.2	8.2	10.8
	II	112.4	91.0	110.0	-1.2	-3.1	-1.0
	III	107.2	89.1	106.4	-8.9	-8.4	-7.7
	IV	112.1	93.2	112.0	-8.4	-5.5	-5.9

1/ An increase in the index implies a depreciation of the Mexican peso.
2/ The real effective exchange rate is estimated based on consumer prices and with respect to a basket of 111 countries, weighted with the GDP of each one of them.
3/ The real effective exchange rate is estimated based on consumer prices and with respect to a basket of 49 countries, weighted by the participation of each country in trade with Mexico. The trade with these countries represents approximately 98% of total trade of Mexico.
Source: Prepared by Banco de México with data from the IMF, INEGI, OECD and central banks.

Prices, Wages and Productivity

Table A 16
Main Price Indicators
Annual change in percent

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Prices												
Consumer prices												
End-period	4.05	3.76	6.53	3.57	4.40	3.82	3.57	3.97	4.08	2.13	3.36	6.77
Annual average	3.63	3.97	5.12	5.30	4.16	3.41	4.11	3.81	4.02	2.72	2.82	6.04
Producer prices. Finished merchandise excluding oil												
End-period	7.12	3.69	10.48	1.99	4.39	7.19	0.94	0.13	4.24	5.29	10.27	4.39
Annual average	6.12	4.25	7.38	5.91	3.25	5.23	4.56	-0.17	2.29	5.43	7.69	7.34
Producer prices. Finished merchand. and serv. excl. oil												
End-period	5.39	3.57	7.75	3.29	3.70	5.74	1.54	1.71	3.70	4.20	7.73	4.24
Annual average	5.12	3.83	5.79	5.36	3.57	4.21	4.22	1.24	2.53	4.29	6.00	6.01
Producer prices. Finished merchand. and serv. with oil												
End-period	5.50	4.40	6.50	4.34	3.89	6.58	1.01	1.47	1.79	3.03	9.06	4.65
Annual average	5.39	4.05	6.33	4.88	3.82	4.92	4.32	0.99	1.95	2.28	5.77	6.63
Construction cost index (residential)												
End-period	8.50	3.04	9.57	-0.33	4.54	9.28	0.78	-0.06	3.75	6.42	9.95	7.85
Annual average	7.58	3.36	9.70	-0.06	3.84	6.07	4.65	0.15	2.74	4.82	8.21	10.86

Source: Banco de México and INEGI.

Table A 17
Consumer Price Index (CPI)
2F Dec 2010

		Change in percent		
	CPI		**Annual**	
Month	**2F Dec 2010**	**Annual**	**12-month**	**Monthly**
			moving average	
2002 Dec	70.962	5.70	5.03	
2003 Dec	73.784	3.98	4.55	
2004 Dec	77.614	5.19	4.69	
2005 Dec	80.200	3.33	3.99	
2006 Dec	83.451	4.05	3.63	
2007 Dec	86.588	3.76	3.97	
2008 Dec	92.241	6.53	5.12	
2009 Dec	95.537	3.57	5.30	
2010 Dec	99.742	4.40	4.16	
2011 Dec	103.551	3.82	3.41	
2012 Dec	107.246	3.57	4.11	
2013 Dec	111.508	3.97	3.81	
2014 Dec	116.059	4.08	4.02	
2015 Dec	118.532	2.13	2.72	
2016 Jan	118.984	2.61	2.68	0.38
Feb	119.505	2.87	2.67	0.44
Mar	119.681	2.60	2.63	0.15
Apr	119.302	2.54	2.59	-0.32
May	118.770	2.60	2.56	-0.45
Jun	118.901	2.54	2.54	0.11
Jul	119.211	2.65	2.53	0.26
Aug	119.547	2.73	2.54	0.28
Sep	120.277	2.97	2.58	0.61
Oct	121.007	3.06	2.63	0.61
Nov	121.953	3.31	2.72	0.78
Dec	122.515	3.36	2.82	0.46
2017 Jan	124.598	4.72	3.00	1.70
Feb	125.318	4.86	3.17	0.58
Mar	126.087	5.35	3.40	0.61
Apr	126.242	5.82	3.68	0.12
May	126.091	6.16	3.97	-0.12
Jun	126.408	6.31	4.29	0.25
Jul	126.886	6.44	4.60	0.38
Aug	127.513	6.66	4.93	0.49
Sep	127.912	6.35	5.21	0.31
Oct	128.717	6.37	5.48	0.63
Nov	130.044	6.63	5.76	1.03
Dec	130.813	6.77	6.04	0.59

Source: Banco de México and INEGI.

Table A 18
Consumer Price Index (CPI) by Type of Good
Annual change in percent
2F Dec 2010

	Month	CPI	Food, beverages and tobacco	Apparel, footwear and accessories	Housing	Furniture and household goods	Medical and personal care	Transport	Education and entertainment	Other goods and services
2004	Dec	5.19	8.17	1.14	5.04	1.28	2.89	5.38	4.77	4.72
2005	Dec	3.33	2.24	1.26	3.60	1.87	3.87	3.50	5.09	4.46
2006	Dec	4.05	6.27	1.24	3.27	1.75	3.41	3.54	4.41	4.17
2007	Dec	3.76	6.00	1.31	2.32	1.85	4.04	3.16	4.19	4.49
2008	Dec	6.53	10.24	2.30	5.44	6.11	4.83	5.47	5.51	6.51
2009	Dec	3.57	4.24	3.47	0.94	5.51	4.94	5.35	4.04	4.36
2010	Dec	4.40	5.29	3.34	2.92	2.66	4.27	6.88	3.89	4.82
2011	Dec	3.82	6.02	3.43	2.10	2.83	1.94	4.99	3.15	4.47
2012	Dec	3.57	7.20	2.51	-0.68	4.56	5.01	4.54	3.15	5.10
2013	Dec	3.97	4.11	1.52	3.84	0.67	2.27	7.33	3.64	3.52
2014	Dec	4.08	6.54	2.27	2.02	1.58	2.87	4.45	3.85	6.80
2015	Dec	2.13	2.32	2.90	-0.07	2.94	3.33	2.43	3.55	4.51
2016	Jan	2.61	3.59	3.00	0.74	2.89	3.77	1.89	3.54	4.41
	Feb	2.87	4.81	3.05	0.67	3.36	3.46	1.60	3.55	4.53
	Mar	2.60	4.33	3.45	0.73	3.01	3.32	0.37	3.66	4.63
	Apr	2.54	3.78	3.28	0.79	2.72	3.82	0.44	3.80	4.81
	May	2.60	4.28	2.89	0.79	2.77	3.96	-0.18	3.85	5.04
	Jun	2.54	3.89	3.04	0.73	2.75	4.06	0.04	3.95	5.04
	Jul	2.65	3.53	3.19	0.75	2.49	4.30	1.30	3.96	5.02
	Aug	2.73	3.50	3.59	0.44	2.54	4.36	2.24	3.94	4.95
	Sep	2.97	4.54	3.66	0.12	2.43	4.14	2.73	4.15	4.78
	Oct	3.06	4.57	3.54	0.26	2.29	4.19	3.34	4.07	4.61
	Nov	3.31	4.71	3.00	0.85	2.07	4.25	3.85	4.28	4.66
	Dec	3.36	4.31	3.26	1.11	2.19	4.15	4.25	4.23	4.89
2017	Jan	4.72	3.46	3.63	2.40	2.73	4.30	12.21	4.36	5.35
	Feb	4.86	2.88	3.92	2.80	2.68	5.09	12.85	4.59	5.53
	Mar	5.35	4.40	3.96	2.97	3.81	5.74	12.67	4.42	5.60
	Apr	5.82	5.86	4.10	2.69	4.07	5.61	13.28	5.03	5.63
	May	6.16	6.65	4.52	2.78	4.93	5.73	13.88	4.47	5.76
	Jun	6.31	7.47	4.10	2.95	5.23	5.92	13.07	4.37	5.94
	Jul	6.44	9.00	4.15	2.83	5.42	5.74	11.30	4.44	6.05
	Aug	6.66	9.91	4.30	3.40	5.13	5.55	10.34	4.52	6.01
	Sep	6.35	8.31	4.39	3.96	4.89	5.27	10.12	4.46	6.05
	Oct	6.37	7.35	4.41	4.60	4.51	5.31	10.86	4.71	5.97
	Nov	6.63	7.59	4.43	5.05	5.09	5.96	11.05	4.71	5.93
	Dec	6.77	7.92	4.05	5.14	5.06	6.13	11.48	4.59	5.76

Source: Banco de México and INEGI.

Table A 19
Inflation: CPI, Core and Complementary Subindex
Annual change in percent
2F Dec 2010

	Month	CPI	Core [1]	Merchandise	Services	Non-core	Agricultural	Energy products and government approved fares
2008	Dec	6.53	5.54	6.50	4.72	9.80	11.63	8.68
2009	Dec	3.57	4.16	5.57	2.94	1.72	1.66	1.76
2010	Dec	4.40	3.58	3.82	3.36	7.09	6.96	7.16
2011	Dec	3.82	3.35	4.52	2.40	5.34	3.73	6.19
2012	Dec	3.57	2.90	5.00	1.15	5.74	9.18	3.84
2013	Dec	3.97	2.78	1.89	3.54	7.84	6.67	8.65
2014	Dec	4.08	3.24	3.50	3.03	6.70	8.61	5.55
2015	Dec	2.13	2.41	2.82	2.07	1.28	1.72	1.00
2016	Jan	2.61	2.64	2.86	2.46	2.52	5.27	0.84
	Feb	2.87	2.66	3.02	2.36	3.49	8.08	0.71
	Mar	2.60	2.76	3.23	2.37	2.12	6.21	-0.37
	Apr	2.54	2.83	3.37	2.37	1.66	4.46	-0.09
	May	2.60	2.93	3.55	2.41	1.55	5.10	-0.71
	Jun	2.54	2.97	3.61	2.44	1.16	3.87	-0.56
	Jul	2.65	2.97	3.71	2.36	1.65	2.97	0.81
	Aug	2.73	2.96	3.76	2.29	1.99	3.09	1.29
	Sep	2.97	3.07	3.92	2.36	2.65	5.34	0.94
	Oct	3.06	3.10	3.97	2.36	2.95	5.25	1.52
	Nov	3.31	3.29	3.91	2.77	3.34	5.56	1.99
	Dec	3.36	3.44	4.05	2.92	3.13	4.15	2.49
2017	Jan	4.72	3.84	4.75	3.07	7.40	0.53	11.80
	Feb	4.86	4.26	5.39	3.29	6.71	-2.14	12.48
	Mar	5.35	4.48	5.85	3.32	8.02	1.02	12.56
	Apr	5.82	4.72	6.05	3.59	9.25	4.36	12.44
	May	6.16	4.78	6.29	3.50	10.60	6.43	13.41
	Jun	6.31	4.83	6.33	3.56	11.09	8.42	12.86
	Jul	6.44	4.94	6.42	3.68	11.27	11.98	10.81
	Aug	6.66	5.00	6.51	3.72	11.98	13.89	10.76
	Sep	6.35	4.80	6.17	3.63	11.28	10.40	11.86
	Oct	6.37	4.77	5.97	3.75	11.40	8.37	13.36
	Nov	6.63	4.90	6.19	3.79	11.97	8.84	13.94
	Dec	6.77	4.87	6.17	3.76	12.62	9.75	14.44

1/ Core inflation is obtained by eliminating from the CPI calculation the goods and services with more volatile prices, otherwise its determination process does not correspond to market conditions. Thus, the groups excluded from the core component are the following: agricultural and energy products and fares approved by government.
Source: Banco de México and INEGI.

Table A 20
Producer Price Index (PPI) Excluding Oil
June 2012 = 100

Period	Finished merchandise			Services			Finished merchandise and services		
	Index	Percentage change		Index	Percentage change		Index	Percentage change	
		Annual	Monthly		Annual	Monthly		Annual	Monthl6y
2002 Dec	59.934	6.29	0.31	68.010	5.19	0.31	64.061	5.67	0.31
2003 Dec	63.673	6.24	0.85	70.142	3.13	0.27	66.960	4.52	0.53
2004 Dec	68.747	7.97	-0.29	73.828	5.25	0.41	71.328	6.52	0.08
2005 Dec	70.438	2.46	0.45	77.225	4.60	0.34	73.886	3.59	0.39
2006 Dec	75.454	7.12	0.30	80.202	3.85	0.14	77.865	5.39	0.21
2007 Dec	78.235	3.69	0.00	82.976	3.46	0.31	80.643	3.57	0.16
2008 Dec	86.436	10.48	0.33	87.342	5.26	0.42	86.896	7.75	0.38
2009 Dec	88.156	1.99	-0.05	91.306	4.54	0.80	89.756	3.29	0.39
2010 Dec	92.026	4.39	0.72	94.102	3.06	0.65	93.080	3.70	0.68
2011 Dec	98.640	7.19	0.73	98.215	4.37	1.01	98.424	5.74	0.87
2012 Dec	99.570	0.94	-0.36	100.488	2.31	-0.15	99.937	1.54	-0.27
2013 Dec	99.704	0.13	0.08	104.548	4.04	0.52	101.642	1.71	0.26
2014 Dec	103.934	4.24	1.43	107.614	2.93	0.66	105.406	3.70	1.11
2015 Jan	104.650	4.21	0.69	106.893	2.38	-0.67	105.548	3.46	0.13
Feb	104.996	4.00	0.33	107.367	2.26	0.44	105.945	3.29	0.38
Mar	105.813	4.75	0.78	108.138	2.78	0.72	106.743	3.94	0.75
Apr	105.952	5.09	0.13	108.130	2.50	-0.01	106.823	4.02	0.08
May	105.704	4.77	-0.23	108.166	2.61	0.03	106.689	3.88	-0.13
Jun	106.242	5.63	0.51	108.471	2.64	0.28	107.134	4.40	0.42
Jul	107.000	5.99	0.71	108.993	2.67	0.48	107.797	4.62	0.62
Aug	107.751	6.15	0.70	109.291	2.99	0.27	108.367	4.85	0.53
Sep	108.422	6.60	0.62	109.672	2.96	0.35	108.922	5.11	0.51
Oct	108.587	6.38	0.15	109.729	2.87	0.05	109.044	4.94	0.11
Nov	108.907	6.28	0.29	109.691	2.60	-0.03	109.220	4.77	0.16
Dec	109.432	5.29	0.48	110.440	2.63	0.68	109.835	4.20	0.56
2016 Jan	110.987	6.06	1.42	110.951	3.80	0.46	110.973	5.14	1.04
Feb	112.372	7.03	1.25	111.373	3.73	0.38	111.972	5.69	0.90
Mar	112.136	5.98	-0.21	111.661	3.26	0.26	111.946	4.87	-0.02
Apr	112.478	6.16	0.31	111.467	3.09	-0.17	112.074	4.91	0.11
May	113.492	7.37	0.90	111.886	3.44	0.38	112.849	5.77	0.69
Jun	114.862	8.11	1.21	112.388	3.61	0.45	113.872	6.29	0.91
Jul	115.376	7.83	0.45	112.729	3.43	0.30	114.317	6.05	0.39
Aug	115.679	7.36	0.26	112.691	3.11	-0.03	114.484	5.64	0.15
Sep	117.238	8.13	1.35	113.387	3.39	0.62	115.698	6.22	1.06
Oct	117.444	8.16	0.18	113.581	3.51	0.17	115.899	6.29	0.17
Nov	119.445	9.68	1.70	113.835	3.78	0.22	117.201	7.31	1.12
Dec	120.671	10.27	1.03	114.812	3.96	0.86	118.327	7.73	0.96
2017 Jan	123.557	11.32	2.39	115.395	4.01	0.51	120.291	8.40	1.66
Feb	124.093	10.43	0.43	115.859	4.03	0.40	120.799	7.88	0.42
Mar	123.560	10.19	-0.43	116.256	4.12	0.34	120.638	7.76	-0.13
Apr	122.963	9.32	-0.48	116.468	4.49	0.18	120.364	7.40	-0.23
May	123.330	8.67	0.30	116.503	4.13	0.03	120.599	6.87	0.20
Jun	122.689	6.81	-0.52	116.612	3.76	0.09	120.257	5.61	-0.28
Jul	122.303	6.00	-0.31	116.895	3.70	0.24	120.140	5.09	-0.10
Aug	122.521	5.91	0.18	117.090	3.90	0.17	120.348	5.12	0.17
Sep	122.706	4.66	0.15	117.270	3.42	0.15	120.531	4.18	0.15
Oct	124.285	5.82	1.29	117.889	3.79	0.53	121.726	5.03	0.99
Nov	125.680	5.22	1.12	118.587	4.17	0.59	122.842	4.81	0.92
Dec	125.972	4.39	0.23	119.417	4.01	0.70	123.350	4.24	0.41

Source: Banco de México and INEGI.

Table A 21
Producer Price Index (PPI) Excluding Oil
Classified by finished goods' end use
Annual change in percent in December of each year

Item	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PPI finished merchandise and services	**3.57**	**7.75**	**3.29**	**3.70**	**5.74**	**1.54**	**1.71**	**3.70**	**4.20**	**7.73**	**4.24**
Domestic demand	3.67	7.24	3.32	3.44	5.45	2.49	2.51	3.32	3.13	5.80	5.21
Consumption	3.70	6.24	4.07	3.33	4.75	2.88	3.35	2.95	2.33	4.67	5.16
Investment	2.81	12.55	-0.53	3.58	8.78	0.65	-0.16	4.52	5.74	9.33	5.36
Exports	2.81	11.61	3.11	5.61	7.77	-2.12	-0.94	5.02	7.79	13.93	1.36
PPI finished merchandise	**3.69**	**10.48**	**1.99**	**4.39**	**7.19**	**0.94**	**0.13**	**4.24**	**5.29**	**10.27**	**4.39**
Domestic demand	3.90	10.07	1.92	4.05	6.90	2.83	0.95	3.75	3.57	7.65	6.45
Consumption	4.60	8.42	3.64	4.40	5.68	4.66	1.86	3.46	2.80	6.45	6.40
Investment	2.75	12.77	-0.76	3.48	8.87	0.42	-0.25	4.14	4.61	9.23	6.52
Exports	2.79	12.25	2.30	5.79	8.36	-3.33	-1.35	5.16	8.45	14.88	1.00
PPI services	**3.46**	**5.26**	**4.54**	**3.06**	**4.37**	**2.31**	**4.04**	**2.93**	**2.63**	**3.96**	**4.01**
Domestic demand	3.49	5.04	4.46	2.96	4.29	2.16	4.10	2.89	2.69	3.95	3.93
Consumption	3.20	5.02	4.32	2.72	4.21	1.83	4.26	2.65	2.04	3.60	4.40
Investment	4.59	5.89	6.84	6.67	6.20	6.09	0.69	8.20	16.23	10.17	-4.16
Exports	2.88	9.40	5.99	4.97	5.76	5.06	3.04	3.72	1.41	4.21	5.47

Source: Banco de México and INEGI.

Table A 22
Producer Price Index (PPI) Excluding Oil
Classified by origin of finished goods
Annual change in percent in December of each year

Item	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
PPI finished merchandise and services	**3.57**	**7.75**	**3.29**	**3.70**	**5.74**	**1.54**	**1.71**	**3.70**	**4.20**	**7.73**	**4.24**
Agriculture, livestock, forest use, fishing and hunting	4.45	14.16	-0.51	13.20	3.46	5.76	-0.10	4.65	1.52	10.69	6.64
Mining	10.39	-3.82	31.26	17.60	9.17	-2.60	-0.35	9.20	16.06	14.29	-4.35
Electricity, water supply and pipeline gas supply	4.07	11.70	-0.33	4.90	5.30	3.68	4.25	3.58	-2.77	3.38	2.80
Construction	2.90	13.08	-0.95	3.89	9.29	0.41	-0.69	4.46	4.38	8.71	7.91
Manufacturing industry	3.82	9.03	3.38	3.23	6.81	1.30	0.28	4.17	6.06	10.65	3.41
Transport, mail and warehousing	2.73	6.07	6.86	2.73	5.74	2.99	4.20	2.57	2.96	4.25	6.15
Mass media services	--	--	--	--	2.67	-13.84	13.08	-3.81	-14.38	-1.99	1.16
Real estate and leasing services	2.72	3.62	2.16	2.24	1.96	2.04	2.11	2.03	1.89	2.78	2.22
Professional, scientific and technical services	--	--	--	--	5.69	2.85	2.47	4.23	3.13	2.50	4.62
Business support services, waste management and remediation services	--	--	--	--	2.14	5.09	4.38	4.45	7.22	7.27	4.39
Educational services	--	--	--	--	4.37	6.91	4.53	4.37	4.36	4.34	4.83
Health and social assistance services	--	--	--	--	3.75	3.03	3.91	3.45	3.65	4.05	4.86
Cultural and sport services, and other recreational services	--	--	--	--	2.91	4.19	2.18	2.93	3.63	3.54	5.08
Temporary lodging services and food and beverage-related services	3.96	6.02	3.55	3.69	4.74	4.03	3.06	5.11	3.93	5.58	5.25
Other services excluding government activity services	--	--	--	--	3.28	3.25	2.91	2.97	2.83	3.84	4.10

Source: Banco de México and INEGI.

Table A 23
Construction Cost Index
Annual change in percent in December of each year

Item	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
General index	**2.90**	**13.08**	**-0.95**	**4.80**	**9.29**	**0.41**	**-0.69**	**4.46**	**4.38**	**8.71**	**7.91**
Construction materials index	2.55	15.47	-1.84	5.16	10.56	-0.16	-1.39	4.54	4.41	9.82	8.67
Non-metal minerals	4.88	7.78	2.58	3.16	4.81	4.98	4.30	5.10	5.30	9.10	11.76
Cement and concrete	4.71	8.72	0.14	5.37	9.04	1.24	-1.97	5.58	10.14	12.44	9.95
Cementing materials	3.38	10.40	3.26	5.01	5.91	4.98	0.63	4.75	7.21	12.81	10.87
Clay materials	3.67	6.30	0.21	2.85	1.68	1.48	2.84	2.15	6.95	7.80	8.36
Concrete products	3.18	5.06	0.98	1.82	3.16	2.44	1.64	3.18	7.67	9.89	12.97
Concrete structures	4.35	11.35	-0.25	3.24	6.75	1.72	1.15	2.85	6.68	5.35	10.93
Other concrete products	1.47	8.19	0.70	2.51	3.95	1.96	-0.26	5.13	3.27	4.56	10.33
Other non-metal minerals products	0.53	7.77	-3.32	3.05	6.32	7.47	-2.03	3.53	4.96	6.05	9.02
Timber products	3.38	7.27	1.80	3.03	2.86	5.04	1.48	1.83	7.44	7.47	7.38
Paint and similar materials	0.85	19.19	-0.27	5.01	14.83	1.27	2.91	0.17	7.41	3.41	7.13
Plastic products	-1.68	8.36	-4.76	5.37	3.26	2.39	-0.56	3.47	7.82	5.39	8.32
Other chemical products	0.98	49.02	-10.00	7.40	15.62	-5.34	-6.52	13.68	-19.64	-10.73	8.86
Metal products	0.90	26.13	-7.13	5.54	11.50	-1.55	-4.30	4.53	1.42	11.76	6.58
Wire products	-3.55	24.34	-8.83	5.22	36.15	-10.69	-8.24	-1.20	4.17	22.86	-1.39
Electric equipment	6.04	15.68	2.24	1.71	6.22	5.28	-0.15	1.39	6.23	12.44	5.55
Electric accessories	0.54	-4.09	6.34	15.71	5.63	1.22	-5.74	-0.33	4.75	9.74	14.90
Furniture and accessories	4.56	11.52	3.14	2.39	4.24	5.14	3.80	1.71	10.31	9.12	6.97
Other materials and accessories	2.84	16.92	-0.36	7.70	7.51	2.55	1.57	6.45	5.65	9.96	7.37
Rented machinery and equipment subindex	2.89	6.89	1.82	3.24	5.26	-0.24	1.43	5.14	6.77	7.91	3.00
Worker earnings' subindex	4.35	3.55	3.07	3.32	3.80	3.21	2.87	3.91	3.78	2.85	4.40

Source: Banco de México and INEGI.

Table A 24
Contractual Wages

Period		Total			Manufactures		
		Annual increase (percent)	Number of workers (thousand)	Number of firms	Annual increase (percent)	Number of workers (thousand)	Number of firms
2006	Average	4.1	1,684.2	5,819	4.4	482.7	2,433
2007	Average	4.2	1,858.1	6,251	4.4	566.8	2,546
2008	Average	4.4	1,909.6	6,308	4.7	557.5	2,768
2009	Average	4.4	1,824.3	6,645	4.4	511.5	2,930
2010	Average	4.3	1,882.0	6,825	4.8	560.0	3,268
2011	Average	4.3	1,970.7	7,192	4.7	612.8	3,445
2012	Average	4.4	2,072.6	7,442	4.8	638.1	3,405
2013	Average	4.3	2,071.6	7,802	4.6 [1]	669.0 [1]	3,403 [1]
2014	Average	4.1	2,197.8	8,250	4.5	708.7	3,584
2015	Average	4.1	2,229.5	8,336	4.6	760.5	3,728
2016	Average	4.0	2,258.6	7,975	4.6	766.3	3,838
2017	Average	4.4	2,308.5	8,556	5.3	815.3	3,889
2014	Jan	3.8	186.8	707	4.5	51.3	308
	Feb	4.4	205.6	822	4.5	97.3	408
	Mar	4.4	181.4	1,014	4.5	110.3	499
	Apr	4.0	275.7	762	4.6	74.7	367
	May	4.4	100.2	638	4.2	58.9	334
	Jun	4.4	82.1	650	4.4	42.7	339
	Jul	4.1	240.7	436	4.3	26.1	190
	Aug	4.5	113.7	734	4.8	56.3	297
	Sep	4.2	87.8	588	4.2	44.2	258
	Oct	3.7	611.1	625	4.5	105.4	256
	Nov	4.3	48.1	378	4.5	15.7	164
	Dec	3.9	64.6	896	4.7	25.7	164
2015	Jan	4.3	192.2	530	4.6	65.3	262
	Feb	4.4	211.7	822	4.4	103.8	427
	Mar	4.3	225.0	1,174	4.6	122.8	591
	Apr	4.1	241.6	751	4.8	80.3	375
	May	4.4	158.0	762	4.9	62.2	353
	Jun	4.4	108.4	795	4.3	47.7	352
	Jul	4.8	43.4	377	4.7	30.4	206
	Aug	4.4	86.9	718	4.7	51.2	307
	Sep	4.1	251.0	574	4.2	34.9	256
	Oct	3.6	597.7	578	4.6	108.6	240
	Nov	4.1	75.1	474	4.5	37.3	237
	Dec	4.3	38.4	781	4.3	16.1	122
2016	Jan	4.0	186.2	571	4.4	49.7	288
	Feb	4.1	235.7	954	4.5	110.0	460
	Mar	4.5	148.7	796	4.4	72.1	406
	Apr	4.8	201.8	1,035	4.5	97.3	493
	May	4.0	228.3	838	4.6	75.8	369
	Jun	4.5	118.7	836	4.5	70.7	429
	Jul	4.4	80.2	417	4.7	50.3	212
	Aug	3.7	245.8	707	4.6	48.7	318
	Sep	4.1	104.3	500	4.4	61.2	270
	Oct	3.4	564.8	482	5.0	74.8	226
	Nov	4.5	79.4	466	4.9	41.8	220
	Dec	4.1	64.7	373	4.5	14.0	147
2017 [p]	Jan	4.1	126.8	536	5.2	49.1	268
	Feb	4.6	254.3	858	5.0	95.4	391
	Mar	4.7	288.8	1,170	5.0	145.8	571
	Apr	4.0	193.5	740	4.8	65.0	424
	May	4.7	194.5	755	5.6	85.3	413
	Jun	5.4	132.3	889	5.7	51.7	383
	Jul	5.8	56.5	706	6.2	34.9	198
	Aug	4.2	290.6	1054	5.4	81.0	408
	Sep	5.1	37.0	294	5.3	21.0	117
	Oct	3.8	616.0	749	5.6	115.3	345
	Nov	5.1	63.4	494	5.6	37.2	199
	Dec	5.3	54.9	311	5.3	33.4	172

1/ Data of Manufacturing as of 2013 correspond to the classification of the Industrial Classification System of North America (2007).
p/ Preliminary figures starting from the indicated date.
Note: Annual wage increase figures correspond to weighted averages of monthly figures. Annual figures of the number of workers and number of firms correspond to total monthly figures.
Source: Ministry of Labor.

Table A 25
Nominal Earnings and Output per Worker (ENOE)
Annual change in percent

Period		Average monthly earnings	Output per worker	
			Total	**Manufactures**
2013	Average	2.8	0.3	-3.0
2014	Average	-0.9	2.5	1.6
2015	Average	4.6	0.8	-0.2
2016	Average	4.4	1.0	-2.0
2017	Average	5.0	0.6	-0.4
2013	I	5.0	-0.7	-3.4
	II	2.9	1.5	-2.5
	III	2.6	1.4	-2.6
	IV	0.8	-1.1	-3.4
2014	I	-1.3	1.2	-0.8
	II	-0.3	2.3	0.6
	III	-0.8	2.6	2.1
	IV	-1.1	3.7	4.6
2015	I	2.6	2.0	2.2
	II	2.9	0.9	-0.2
	III	6.9	1.3	0.2
	IV	6.1	-0.8	-2.7
2016	I	4.5	1.0	-3.3
	II	4.5	1.1	-1.6
	III	3.4	-0.5	-2.9
	IV	5.2	2.2	-0.4
2017	I	4.9	1.1	2.1
	II	6.9	0.3	-2.2
	III	4.7	0.8	-0.6
	IV	3.4	0.1	-0.8

Source: Prepared by Banco de México with data from INEGI.

Table A 26
Minimum Wage
MXN per day

Start date	National average [1]	Geographic area [2]		
		A	B	C
1996 April 1	20.66	22.60	20.95	19.05
1996 December 3	24.30	26.45	24.50	22.50
1997 January 1	24.30	26.45	24.50	22.50
1998 January 1	27.99	30.20	28.00	26.05
1998 December 3	31.91	34.45	31.90	29.70
1999 January 1	31.91	34.45	31.90	29.70
2000 January 1	35.12	37.90	35.10	32.70
2001 January 1	37.57	40.35	37.95	35.85
2002 January 1	39.74	42.15	40.10	38.30
2003 January 1	41.53	43.65	41.85	40.30
2004 January 1	43.30	45.24	43.73	42.11
2005 January 1	45.24	46.80	45.35	44.05
2006 January 1	47.05	48.67	47.16	45.81
2007 January 1	48.88	50.57	49.00	47.60
2008 January 1	50.84	52.59	50.96	49.50
2009 January 1	53.19	54.80	53.26	51.95
2010 January 1	55.77	57.46	55.84	54.47
2011 January 1	58.06	59.82	58.13	56.70
2012 January 1	60.50	62.33	60.57	59.08

	National average [1]	Geographic area [2][3]	
		A	B
2012 November 27	60.75	62.33	59.08
2013 January 1	63.12	64.76	61.38
2014 January 1	65.58	67.29	63.77
2015 January 1	68.34	70.10	66.45
2015 April 1	69.26	70.10	68.28

	General minimum wage [4]
2015 October 1	70.10
2016 January 1	73.04
2017 January 1 [5]	80.04
2017 December 1 [6]	88.36
2018 January 1	88.36

1/ Country's average weighted by the number of wage earners in each region.
2/ States and municipalities are classified by regions to show country's different costs of living.
3/ From November 27, 2012, the Council of Representatives of the Minimum Wage Commission (CONASAMI) decided to unify the previous geographic areas 'A' and 'B' within the same minimum wage. In turn, the previously known as geographic area 'C' was denominated 'B'.
4/ Starting from October 1, 2015, the Council of Representatives established a general minimum wage across the country.
5/ On December 1, 2016, the Council of Representatives of the Minimum Wage Commission (CONASAMI) resolved to increase the general minimum wage by MXN 4.00 (raising it from MXN 73.04 to MXN 77.04). In addition to the above, based on MXN 77.04, the CONASAMI granted an increase of 3.9 percent to the general minimum wage.
6/ On November 21, 2017, the Council of Representatives of the Minimum Wage Commission (CONASAMI) decided to increase by 5.00 pesos the general minimum wage (from 80.04 to 85.04 daily pesos). Based on the amount of 85.04 daily pesos, an increase of 3.9 percent to the general minimum wage was granted.
Source: Minimum Wage Commission.

Monetary and Financial Indicators

Table A 27
Main Monetary and Financial Indicators

	2014	2015	2016	2017
Monetary aggregates [1]	Real annual change in percent			
Monetary base	9.09	16.92	12.72	4.62
M1	9.91	15.02	11.41	5.53
M2	6.25	5.30	5.19	3.54
M4	6.76	6.15	1.75	1.62
	Percent of GDP [2]			
Monetary base	5.15	5.82	6.23	6.38
M1	14.61	16.27	17.19	17.76
M2	34.67	35.34	35.26	35.75
M4	51.92	53.35	51.48	51.22
Nominal interest rates [3]	Annual rates in percent			
28-day TIIE	3.52	3.32	4.47	7.06
28-day Cetes	3.00	2.98	4.15	6.69
CPP	2.41	2.18	2.67	4.25
CCP	3.23	3.03	3.76	5.81
Exchange rate [4]	MXN/USD			
To settle liabilities denominated in foreign currency	14.7180	17.2065	20.7314	19.7867
Mexican stock exchange [4]	Index base Oct 1978=100			
Stock exchange benchmark index	43,146	42,978	45,643	49,354

1/ Based on the average of monthly stocks. The contents of this table differ from those presented in "Compilation of Quarterly Reports Released in 2016" as on January 31, 2018 Banco de México released the redefinition of monetary aggregates statistics.
2/ GDP (base 2013) annual average.
3/ Average of daily or weekly observations.
4/ At end of period.
Source: Banco de México Mexican Stock Exchange (*Bolsa Mexicana de Valores*, BMV).

Table A 28
Monetary Aggregates
Stocks in MXN billion

End of period	Monetary base	M1	M2	M3	M4
			Nominal stocks		
2004	340.2	946.3	2,493.3	2,715.6	2,809.0
2005	380.0	1,068.1	2,847.6	3,033.1	3,169.0
2006	449.8	1,218.2	3,203.2	3,499.7	3,676.0
2007	494.7	1,349.8	3,559.3	3,808.1	4,069.6
2008	577.5	1,482.7	3,972.4	4,340.1	4,660.5
2009	632.0	1,613.5	4,130.8	4,616.4	4,988.9
2010	693.4	1,831.6	4,442.0	4,886.4	5,618.3
2011	763.5	2,081.5	4,960.1	5,548.0	6,696.7
2012	846.0	2,278.2	5,306.8	6,004.5	7,814.3
2013	917.9	2,511.4	5,872.3	6,608.0	8,648.4
2014	1,062.9	2,876.5	6,356.2	7,231.7	9,631.0
2015	1,241.7	3,348.7	6,769.7	7,778.6	10,127.7
2016	1,420.3	3,868.3	7,670.0	8,588.5	10,818.1
2017　Jan	1,382.8	3,811.4	7,614.2	8,576.3	10,842.4
Feb	1,367.9	3,798.0	7,603.1	8,557.0	10,875.2
Mar	1,370.1	3,782.4	7,541.1	8,582.0	10,930.2
Apr	1,378.9	3,812.3	7,565.1	8,608.2	10,958.6
May	1,375.2	3,739.9	7,568.3	8,556.4	10,877.0
Jun	1,371.2	3,805.7	7,682.0	8,737.9	11,073.8
Jul	1,370.6	3,822.4	7,768.6	8,910.8	11,212.2
Aug	1,354.5	3,777.4	7,731.8	8,829.6	11,126.6
Sep	1,357.3	3,859.4	7,873.5	9,002.7	11,354.9
Oct	1,372.1	3,920.9	7,982.0	9,040.3	11,356.7
Nov	1,408.3	3,994.8	8,061.9	9,162.3	11,477.1
Dec	1,545.9	4,264.0	8,387.4	9,488.3	11,705.6
			Average stocks as percentage of GDP[1]		
2011	4.46	12.33	31.29	34.76	41.21
2012	4.71	13.02	32.23	36.36	45.64
2013	4.87	13.72	33.67	38.14	50.18
2014	5.15	14.61	34.67	39.30	51.92
2015	5.82	16.27	35.34	40.42	53.35
2016	6.23	17.19	35.26	40.18	51.48
2017	6.38	17.76	35.75	40.60	51.22

Note: The contents of this table differ from those presented in "Compilation of Quarterly Reports Released in 2016" as on January 31, 2018 Banco de México released the redefinition of monetary aggregates statistics.
The Monetary Base includes banknotes and coins in circulation plus bank deposits in Banco de México's current account.
M1 is composed by highly liquid instruments held by money-holding resident sectors. In particular, it includes currency and coins issued by Banco de México, along with demand deposits in banks and in popular credit and savings intermediaries.
M2 equals M1 plus terms monetary instruments held by money-holding resident sectors. In particular, it includes short-term deposits with a maturity of up to 5 years in banks and in popular credit and savings intermediaries; debt investment funds, and creditors from repo operations.
M3 equals M2 plus securities issued by the federal government, BREMS and IPAB held by money-holding resident sectors.
M4 consists of M3 plus non-resident holdings of all instruments included in M3.
1/ GDP (2013 base) annual average.
Source: Banco de México.

Table A 29
Monetary Base
Stocks in MXN billion

End of period	Monetary base	Liabilities		Assets	
		Banknotes and coins in circulation [1]	Bank depotis	Net domestic credit	Net international assets [2]
2003	303.614	303.614	0.000	-360.043	663.657
2004	340.178	340.178	0.000	-375.992	716.170
2005	380.034	380.034	0.000	-408.133	788.167
2006	449.821	449.821	0.000	-375.146	824.967
2007	494.743	494.743	0.000	-457.484	952.227
2008	577.543	577.542	0.000	-739.750	1,317.293
2009	632.032	631.938	0.095	-672.860	1,304.892
2010	693.423	693.423	0.000	-796.192	1,489.615
2011	763.492	763.491	0.001	-1,318.080	2,081.572
2012	846.019	845.396	0.624	-1,320.331	2,166.351
2013	917.876	917.875	0.001	-1,440.338	2,358.214
2014	1,062.893	1,062.892	0.001	-1,822.202	2,885.095
2015	1,241.685	1,239.327	2.358	-1,822.182	3,063.867
2016					
Jan	1,203.744	1,203.744	0.000	-2,004.745	3,208.490
Feb	1,190.669	1,190.668	0.001	-2,039.487	3,230.156
Mar	1,214.342	1,214.341	0.001	-1,883.829	3,098.171
Apr	1,200.802	1,200.802	0.000	-1,927.938	3,128.740
May	1,223.289	1,221.643	1.646	-2,079.486	3,302.775
Jun	1,237.332	1,235.274	2.059	-2,065.297	3,302.629
Jul	1,253.084	1,251.300	1.784	-2,122.062	3,375.146
Aug	1,245.686	1,243.634	2.051	-2,109.115	3,354.800
Sep	1,252.267	1,251.258	1.009	-2,246.002	3,498.269
Oct	1,267.091	1,266.175	0.916	-2,074.049	3,341.140
Nov	1,307.077	1,306.230	0.847	-2,302.485	3,609.562
Dec	1,420.269	1,419.754	0.515	-2,251.156	3,671.425
2017					
Jan	1,382.791	1,382.791	0.000	-2,291.336	3,674.127
Feb	1,367.861	1,367.860	0.001	-2,226.956	3,594.817
Mar	1,370.072	1,369.315	0.758	-1,989.334	3,359.407
Apr	1,378.916	1,378.915	0.001	-1,972.703	3,351.619
May	1,375.218	1,374.296	0.922	-1,917.142	3,292.360
Jun	1,371.217	1,371.217	0.000	-1,797.416	3,168.633
Jul	1,370.625	1,369.987	0.639	-1,761.223	3,131.848
Aug	1,354.488	1,353.026	1.461	-1,758.352	3,112.840
Sep	1,357.349	1,352.869	4.480	-1,819.017	3,176.366
Oct	1,372.081	1,368.872	3.209	-2,006.942	3,379.023
Nov	1,408.264	1,405.915	2.348	-1,832.125	3,240.388
Dec	1,545.934	1,542.611	3.323	-1,904.486	3,450.420

1/ Currency outside banks and in banks' vaults.
2/ Net international assets are defined as gross reserves plus credit agreements with central banks with maturity of more than six months, minus total liabilities with the IMF and with foreign central banks with maturity of less than six months.
Source: Banco de México.

Table A 30
Monetary Aggregates M1, M2, M3 and M4
Stocks in MXN billion

	2012	2013	2014	2015	2016	2017
1. Currency outside banks [1/]	733.5	792.3	928.1	1,087.3	1,261.7	1,372.9
2. Demand deposits [2/]	1,544.7	1,719.1	1,948.5	2,261.5	2,606.6	2,891.1
In domestic currency	1,378.9	1,527.6	1,710.0	1,922.7	2,126.2	2,333.3
In foreign currency	165.8	191.5	238.4	338.8	480.4	557.8
3. M1=(1+2)	**2,278.2**	**2,511.4**	**2,876.5**	**3,348.7**	**3,868.3**	**4,264.0**
4. Term deposits in banks [3/]	1,154.4	1,225.8	1,248.7	1,384.2	1,529.6	1,699.3
In domestic currency	1,108.5	1,183.5	1,182.2	1,302.1	1,389.6	1,481.5
In foreign currency	45.9	42.3	66.5	82.0	140.0	217.8
5. Term deposits in other non-bank entities [4/]	79.5	96.5	104.7	114.9	130.5	143.6
6. Shares of debt investment funds	1,093.0	1,155.6	1,290.0	1,301.2	1,347.6	1,432.4
7. Securities' repo operations [5/]	701.7	883.1	836.3	620.6	794.0	848.4
8. M2=(3+4+5+6+7)	**5,306.8**	**5,872.3**	**6,356.2**	**6,769.7**	**7,670.0**	**8,387.7**
9. Public securities held by non-residents	697.8	735.7	875.5	1,008.9	918.5	1,100.9
Federal government securities	568.6	606.9	759.4	853.8	830.3	976.6
IPAB securities	129.2	128.8	116.0	155.0	88.1	124.3
10. M3=(8+9)	**6,004.5**	**6,608.0**	**7,231.7**	**7,778.6**	**8,588.5**	**9,488.6**
11. Demand deposits held by non-residents [6/]	43.0	60.9	50.9	30.1	42.3	33.5
12. Term deposits held by non-residents [3/]	42.5	40.1	45.8	37.6	47.4	48.7
13. Shares of debt investment funds held by non-residents	10.4	12.4	18.0	4.3	7.0	6.2
14. Securities' repo operations held by non-residents [5/]	8.7	10.1	8.6	5.1	5.6	8.3
15. Public securities held by non-residents	1,705.2	1,916.8	2,275.9	2,272.1	2,127.4	2,120.4
16. M4=(10+11+12+13+14+15)	**7,814.3**	**8,648.4**	**9,631.0**	**10,127.7**	**10,818.1**	**11,705.8**

Note: Stocks may not coincide with components' totals due to rounding.
The contents of this table differ from those presented in "Compilation of Quarterly Reports Released in 2016" as on January 31, 2018 Banco de México released the redefinition of monetary aggregates statistics.
1/ Banknotes and coins held by the public are obtained by excluding those held by the banks and popular savings and credit sector from all banknotes and coins in circulation.
2/ It includes checking accounts and deposits in the current accounts of banks and popular savings and credit sector (savings and loan associations, popular financial companies and savings and credit cooperative societies).
3/ It includes deposits and debt securities (stock exchange certificates and bank bonds) issued by a bank with a maturity lower or equal to 5 years.
4/ It includes savings and loan companies, and credit unions.
5/ It refers to financial resources received by the banks in repo operations with money-holding sectors.
6/ It includes checking accounts and deposits in banks' current accounts.

Table A 31
Credit Market Conditions Survey: Financing [1]

Item	Total					Q4 2017				
	2016	2017				By size of firm		By economic activity [2]		
	Q4	Q1	Q2	Q3	Q4	From 11 up to 100 workers	Over 100 workers	Manufactures	Services and commerce	Other
TOTAL FINANCING										
Percentage of firms										
Firms using financing: [3]	**85.3**	**84.5**	**82.8**	**85.1**	**83.4**	**81.2**	**84.7**	**87.6**	**85.1**	**55.2**
Source: [4]										
Suppliers	76.8	75.9	74.6	76.5	73.5	72.9	73.9	82.3	75.3	27.5
Commercial banks	38.5	36.5	36.0	34.1	35.5	25.3	41.7	37.5	34.8	33.7
Foreign banks	5.9	5.3	5.7	5.7	5.6	2.9	7.1	8.9	4.5	0.5
Firms of the corporate group/headquarters	20.7	18.8	17.6	18.6	17.5	11.7	21.0	21.7	16.9	6.0
Development banks	5.6	5.1	6.2	6.3	6.3	2.2	8.8	5.8	6.8	4.3
Via bond issuance	0.4	1.3	2.5	2.1	2.3	0.0	3.7	3.0	2.3	0.0
Firms granting financing: [3]	**80.3**	**80.6**	**78.4**	**81.3**	**81.8**	**80.4**	**82.6**	**89.3**	**82.1**	**50.8**
Destined for: [4]										
Clients	77.7	78.1	76.3	78.9	80.3	78.9	81.2	87.3	81.2	47.6
Suppliers	14.7	13.3	16.4	13.7	17.6	11.9	21.0	19.7	17.3	11.5
Other firms of the same corporate group	15.4	11.3	12.9	9.3	9.8	6.0	12.0	12.7	8.9	4.8
Other	0.4	0.4	0.2	0.4	0.4	0.0	0.6	1.0	0.0	1.1
Average maturity of financing (in days) granted to:										
Clients	60	58	59	61	59	46	67	54	63	50
Suppliers	49	50	51	54	51	45	53	53	50	46
Other firms of the same corporate group	61	66	66	60	59	43	63	61	54	92
Firms expecting to request a credit in the following three months: [3]	**38.0**	**38.0**	**34.6**	**34.5**	**32.3**	**22.1**	**38.4**	**34.7**	**34.4**	**8.5**

1/ Sample with a nationwide coverage of at least 450 firms. Responses are voluntary and confidential.
2/ Manufacturing sector and services and commerce sector are the only representative at the national level.
3/ Since the press release of the first quarter of 2010, the results are presented as a percentage of the total of firms. In the previous press releases this information was presented as a percentage of responses.
4/ The total percentage may be above 100 since firms may choose more than one option.
Source: Banco de México.

Table A 32
Credit Market Conditions Survey: Bank Credit [1]

Item	Total					Q4 2017				
	2016	2017				By size of firm		By economic activity [2]		
	Q4	Q1	Q2	Q3	Q4	From 11 up to 100 workers	Over 100 workers	Manufactures	Services and commerce	Other
BANK CREDIT MARKET [3]										
Percentage of firms										
Firms with bank liabilities at the beginning of the quarter:	**49.8**	**47.6**	**47.9**	**47.7**	**42.9**	**33.3**	**48.6**	**45.5**	**41.0**	**46.9**
Firms that received new bank credits: [4]	**25.9**	**22.6**	**27.0**	**24.0**	**22.5**	**17.0**	**25.8**	**23.8**	**22.0**	**20.8**
Destined for: [5]										
Working capital	75.5	80.1	80.5	80.3	83.7	86.2	82.7	90.1	82.3	66.1
Liability restructuring	11.3	17.7	13.9	15.0	14.1	9.8	15.8	10.5	17.4	4.8
Foreign trade transactions	0.5	3.2	0.8	0.1	1.4	0.0	1.9	4.0	0.0	0.0
Investment	21.8	15.6	22.1	13.3	12.8	7.0	15.1	10.3	12.9	23.1
Other purposes	2.1	0.6	5.5	0.3	0.8	0.9	0.8	0.0	0.0	10.7
Perception of access conditions to bank credit:										
Diffusion index [6]										
Amounts offered	53.4	52.0	47.8	57.1	51.8	48.2	53.0	51.1	52.2	56.3
Terms offered	44.9	53.0	53.3	59.1	50.9	48.8	51.7	49.3	51.5	72.8
Collateral requirements	42.3	44.7	44.6	49.3	43.1	38.1	44.8	43.5	42.8	44.6
Credit resolution time	40.0	43.9	44.1	46.0	46.2	60.7	42.4	48.8	44.6	37.3
Conditions to refinance credits	47.2	48.9	45.3	53.0	50.4	60.7	47.7	51.2	50.0	45.9
Other bank requirements	45.6	43.1	41.1	45.4	41.4	47.4	39.7	45.3	38.7	45.9
Perception of conditions of bank credit costs:										
Diffusion index [7]										
Bank interest rates	17.8	21.2	15.8	26.7	29.6	23.5	31.7	26.4	31.6	30.9
Commissions and other spendings	30.2	32.8	35.2	41.8	41.0	32.5	43.9	42.0	40.3	41.6
Firms that did not receive new bank credits: [4]	**74.1**	**77.4**	**73.0**	**76.0**	**77.5**	**83.0**	**74.2**	**76.2**	**78.0**	**79.2**
Applied for and are going through the authorization process	1.7	3.6	2.7	1.2	1.5	1.6	1.4	3.3	0.4	2.5
Applied for and were rejected	1.7	1.5	1.3	1.5	1.3	0.9	1.5	0.0	1.8	2.8
Applied for but rejected it, because it was too expensive	0.0	0.6	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.1
Did not apply	70.8	71.7	68.7	73.1	74.7	80.5	71.2	72.8	75.8	73.8
Limiting factors to apply for or receive new credits: [8]										
General economic situation	49.8	51.6	50.2	44.3	42.1	48.9	37.6	40.1	42.7	45.7
Access to public support	36.3	43.8	42.3	37.8	31.8	38.0	27.6	33.5	29.9	38.8
Sales and profitability of the firm	40.6	43.4	39.9	35.8	33.7	41.8	28.3	34.2	32.5	40.2
Firm's capitalization	39.1	43.2	39.2	32.1	27.6	34.9	22.9	29.7	25.7	33.9
Firm's credit history	26.2	29.4	23.9	21.2	23.2	29.1	19.3	20.0	23.7	31.1
Banks' disposition to grant credits	42.4	43.5	38.3	35.2	34.2	39.7	30.5	33.5	34.2	36.5
Difficulties to pay the services of the performing bank debt	35.9	36.5	29.4	25.5	22.6	32.3	16.2	18.6	24.0	28.1
Interest rates of the bank credit market	53.0	54.8	51.7	44.3	41.1	50.4	34.8	39.6	40.8	48.3
Access conditions to bank credit	47.6	46.5	45.5	38.9	34.7	40.7	30.6	34.5	33.9	40.9
Amounts required as collateral to access bank credit	46.4	48.5	49.3	35.1	35.6	41.0	32.0	36.2	34.8	38.9
Total firms:										
Conditions of access and the market cost of the bank credit are limiting the firm's operation:										
Major constraint	19.6	16.2	17.5	16.7	15.6	18.3	13.9	18.0	14.0	17.7
Minor constraint	27.1	30.4	31.5	29.9	30.8	33.1	29.4	28.9	30.7	38.6
No constraint	53.3	53.3	51.0	53.4	53.7	48.5	56.7	53.1	55.4	43.7

1/ Sample with a nationwide coverage of at least 450 firms. Responses are voluntary and confidential.
2/ Manufacturing sector and services and commerce sector are the only representative at the national level.
3/ The bank credit market includes commercial banks, development banks and foreign banks.
4/ Since the press release of the first quarter of 2010 the results are presented as a percentage of the total of firms. In the previous press releases, this information was presented as a percentage of responses. Figures may not add up due to rounding.
5/ The total percentage may be above 100 since firms may choose more than one option.
6/ Diffusion index is defined as the sum of the percentage of firms that mentioned that there were more accessible conditions, plus the half of the total percentage of firms that indicated that there were no changes in the access conditions. Under this metrics, when the value of the diffusion index is superior (inferior) to 50, it means that more firms pointed out that they perceived conditions as more accessible (less accessible) in the relevant variable, as compared to the situation observed in the previous quarter.
7/ Diffusion index is defined as the sum of the total percentage of firms that mentioned that there were less expensive conditions, plus the half of the total percentage of firms that indicated that there was no change. Under this metrics, when the value of the diffusion index is superior (inferior) to 50, it means that more firms pointed out that they perceived less expensive (more expensive) conditions in the relevant variable, as compared to the situation observed in the previous quarter.
8/ From a set of possible constraints, each firm marks each factor's share (very limiting, relatively limiting or not limiting), reason for which total percentage of factors can be above 100. The percentage of each factor includes the total of very limiting and relatively limiting grades.
Source: Banco de México.

Table A 33
Total Financing to Non-financial Private Sector
Quarterly data
Stocks in MXN billion

		External financing			Domestic financing				
	Total financing	**External credit 1/**	**External debt issuance 2/**	**Commercial banks 3/**	**Development banks 3/**	**Non-bank financial intermediaries 3/**	**Domestic debt issuance 4/**	**Infonavit 5/**	**Fovissste 6/**
2014									
Mar	5,805,584	472,520	951,872	2,595,977	218,023	106,140	351,060	968,476	141,517
Jun	5,969,392	503,011	1,013,871	2,662,949	225,982	109,821	347,567	964,300	141,890
Sep	6,134,355	518,561	1,057,915	2,710,161	240,718	114,968	354,532	985,945	151,555
Dec	6,402,847	608,531	1,150,241	2,797,717	263,460	110,713	339,552	991,881	140,752
2015									
Mar	6,555,221	584,834	1,158,668	2,848,641	270,649	129,548	358,016	1,050,677	154,188
Jun	6,771,825	618,895	1,237,084	2,921,066	286,548	132,815	373,633	1,051,845	149,939
Sep	7,209,353	703,186	1,320,405	3,051,507	305,807	203,019	398,364	1,074,072	152,994
Dec	7,409,552	714,707	1,352,888	3,172,801	330,417	210,243	399,806	1,074,863	153,828
2016									
Mar	7,714,768	724,658	1,395,884	3,235,909	331,062	327,235	401,203	1,140,308	158,510
Jun	8,051,546	785,752	1,485,476	3,364,118	350,129	346,306	404,197	1,147,828	167,740
Sep	8,357,768	821,960	1,528,107	3,500,887	368,924	369,670	419,332	1,175,200	173,689
Dec	8,648,034	884,355	1,583,917	3,628,738	391,156	393,480	420,618	1,168,733	177,037
2017									
Mar	8,526,897	779,115	1,456,486	3,683,985	381,110	402,581	418,226	1,230,560	174,835
Jun	8,617,819	781,727	1,402,540	3,797,304	378,003	402,701	436,037	1,238,548	180,960
Sep	8,909,408	802,475	1,484,916	3,902,470	388,657	416,761	461,942	1,269,230	182,957
Dec	9,349,053	842,421	1,640,735	4,062,601	418,356	436,738	482,173	1,277,181	188,847

1/ Includes credit from foreign commercial banks, foreign suppliers of national companies and other creditors. In February 2018, data of the External Credit were revised retroactively as of March 2004. Source: data on foreign supplier credit is obtained from the balance sheets of the issuing firms listed on the Mexican Stock Exchange, while credit from foreign commercial banks is obtained from Banco de México's Survey: "Outstanding Consolidated Claims on Mexico".

2 Commercial paper, bonds and securities issued by Mexican companies abroad. In February 2018, the external issuance data were revised retroactively as of March 2004.

3/ It includes total loan portfolio (performing and non-performing) of commercial banks and Sofomes ER subsidiaries of bank entities and financial groups (see the explanatory note of the press release of Monetary Aggregates and Financial Assets as of August 31, 2016).

4/ Calculated by Banco de México based on data from S.D. INDEVAL S.A. de C.V.

5/ Non-performing and performing mortgage portfolio from the National Employees' Housing Fund (*Instituto del Fondo Nacional de la Vivienda para los Trabajadores*, Infonavit). Source: Minimum Catalogue of the National Banking and Securities Commission (CNBV, for its acronym in Spanish).

6/ Non-performing and performing mortgage portfolio from the Public Employees' Housing Fund (*Fondo de Vivienda del Instituto de Seguridad y Servicios Sociales de los Trabajadores del Estado*, Fovissste). Source: Minimum Catalogue of the National Banking and Securities Commission (CNBV, for its acronym in Spanish).

Note: Figures are subject to revision. The total stocks may not coincide with the sum of their components due to the rounding of the figures.

Table A 34
Financial System Flow of Funds Matrix, January - December 2017 [1]
Flows revalued as a percentage of GDP [2]

	Resident private sector[3]			States and municipalities[4]			Public sector[5]			Banking sector[6]			External sector		
	Use of funds (assets)	Source of funds (liab.)	Net financing received	Use of funds (assets)	Source of funds (liab.)	Net financing received	Use of resources (assets)	Source of funds (liab.)	Net financing received	Use of funds (assets)	Source of funds (liab.)	Net financing received	Use of funds (assets)	Source of funds (liab.)	Net financing received
	a	b	c = b - a	d	e	f = e - d	g	h	i = h - g	j	k	l = k - j	m	n	o = n - m
1. Change in domestic financial instruments (2 + 7 + 8 + 9)	5.7	3.5	**-2.2**		0.0	**0.0**	1.4	2.4	**1.0**	2.0	1.8	**-0.2**	-1.5		**1.5**
2. Financial instruments	5.7	0.4	**-5.3**		0.0	**0.0**	0.1	2.2	**2.2**	-0.1	0.7	**0.8**	-2.3		**2.3**
3. Currency (banknotes and coins)	0.5		**-0.5**								0.5	**0.5**			
4. Checkable, time and savings deposits	2.3		**-2.3**				0.1		**-0.1**		0.1	**0.1**	-2.3		**2.3**
4.1 Non-financial enterpr. and other instit. [7]	1.1		**-1.1**				0.1		**-0.1**		-1.1	**-1.1**	-2.3		**2.3**
4.2 Individuals	1.2		**-1.2**								1.2	**1.2**			
5. Securities issued [8]	2.4	0.0	**-2.4**		0.0	**0.0**		2.2	**2.2**	-0.1	0.1	**0.2**	0.0		**0.0**
6. Retirement and housing funds [9]	0.4	0.4	**0.0**					0.0	**0.0**						
7. Financing							1.1	0.3	**-0.8**	0.3	1.1	**0.8**			
7.1 Non-financial enterpr. and other instit.[10]							1.1	0.3	**-0.8**	0.3	1.1	**0.8**			
7.2 Households															
8. Shares and other equity		0.9	**0.9**										0.9		**-0.9**
9. Other financial system items [11]		2.1	**2.1**				0.2	-0.1	**-0.3**	1.8		**-1.8**			
10. Change in external financial instruments (11 + 12 + 13 + 14 + 15)	-2.7	4.3	**7.0**				0.0	1.0	**1.0**	-0.2	0.0	**0.2**	5.3	-2.9	**-8.2**
11. Foreign direct investment		2.7	**2.7**										2.7		**-2.7**
12. External financing		2.2	**2.2**					1.0	**1.0**		0.0	**0.0**	3.3		**-3.3**
13. Financial assets held abroad	-2.7		**2.7**				0.0		**0.0**	0.0		**0.0**		-2.7	**-2.7**
14. Banco de México international reserves										-0.2		**0.2**		-0.2	**-0.2**
15. Errors and omissions (balance of payments)		-0.6	**-0.6**										-0.6		**0.6**
16. Statistical discrepancy [12]		-5.1	**-5.1**										-5.1		**5.1**
17. Total change in financial instruments (1+ 10 +16)	3.0	2.6	**-0.4**		0.0	**0.0**	1.4	3.4	**2.0**	1.8	1.8	**0.0**	-1.2	-2.9	**-1.6** [13]

1/ Preliminary figures. Figures may not add up due to rounding.
2/ Excludes the effect of exchange rate fluctuations (MXN/USD).
3/ Private sector includes firms, individuals, non-bank financial intermediaries.
4/ States and municipalities show their position in relation to the banking sector and the debt market.
5/ Public sector measured as the change in the financial position of the public sector at market value.
6/ Banking sector includes Banco de México, development banks and commercial banks (including agencies abroad). By construction, this sector has a total net position of zero (line item 17), which has to do with financial intermediaries. Statistics on assets and liabilities from commercial banks, development banks and Banco de México were used to consolidate banking sector's financial flows.
7/ In addition to firms, private sector includes non-bank financial intermediaries.
8/ Includes government securities, IPAB securities, BREMS, private securities and state and municipal securities, and securities held by Siefores.
9/ Includes retirement saving funds from both the Public Employees' Social Service Institute (Ins*tituto de Seguridad y Servicios Sociales para los Trabajadores del Estado*, ISSSTE) and the Social Security Institute (*Instituto Mexicano del Seguro Social*, IMSS) held by Banco de México, and housing funds.
10/ In addition to firms, private sector includes individuals with business activities, and non-bank financial intermediaries and securities associated to restructuring programs.
11/ Includes non-classified assets, real estate assets and others, as well as banking sector's capital accounts and balance sheets.
12/ Difference between financial data and data drawn from the balance of payments.
13/ Corresponds to the balance of payments' current account. A negative figure implies external financing to the domestic economy (external sector surplus), which is equivalent to Mexico's current account deficit.
Source: Banco de México.

Table A 35
Banco de México's Bonds (BONDES D)
One year
Weekly auction results

		Amount in MXN million			Price			
	Maturity (days)	Offered	Allotted	Tendered	Weighted placement	Maximum	Minimum allotted	Minimum
05/01/2017	364	1,000	1,000	13,050	99.86310	99.86330	99.86229	99.84268
12/01/2017	357	1,000	1,000	19,220	99.87562	99.87692	99.87547	99.86486
19/01/2017	350	1,000	1,000	24,550	99.88805	99.88810	99.88710	99.86298
26/01/2017	343	1,000	1,000	16,400	99.90205	99.90210	99.90110	99.87000
02/02/2017	336	1,000	1,000	5,370	99.90926	99.90926	99.90926	90.00000
09/02/2017	329	1,000	1,000	78,920	99.91666	99.91708	99.91577	90.00000
16/02/2017	322	1,000	1,000	6,500	99.92700	99.92700	99.92700	99.92052
23/02/2017	315	1,000	1,000	10,600	99.93511	99.93511	99.93511	99.00000
02/03/2017	308	1,000	1,000	5,500	99.93407	99.93407	99.93407	99.92072
09/03/2017	301	1,000	1,000	47,650	99.93925	99.93990	99.93895	99.93471
16/03/2017	294	1,000	1,000	78,200	99.94826	99.95018	99.94627	90.00000
23/03/2017	287	1,000	1,000	3,100	99.95099	99.95099	99.95099	99.94771
30/03/2017	280	1,000	0	1,000	0.00000	0.00000	0.00000	90.00000
06/04/2017	364	1,500	1,500	10,050	99.90359	99.90388	99.90300	98.00000
12/04/2017	358	1,500	1,500	45,551	99.88899	99.90355	99.88038	98.00000
20/04/2017	350	1,500	1,500	17,700	99.91687	99.92447	99.91570	98.00000
27/04/2017	343	1,500	1,500	1,605	99.92429	99.93057	99.92308	99.92308
04/05/2017	336	1,500	1,500	9,180	99.92467	99.92742	99.91200	98.00000
11/05/2017	329	1,500	1,500	4,050	99.92666	99.92880	99.92310	99.91911
18/05/2017	322	1,500	1,500	22,400	99.93015	99.93034	99.93008	98.50000
25/05/2017	315	1,500	1,500	2,230	99.93098	99.93274	99.92976	99.92976
01/06/2017	308	1,500	1,500	2,654	99.93075	99.93173	99.92972	98.00000
08/06/2017	301	1,500	1,500	3,700	99.93173	99.93238	99.93156	98.00000
15/06/2017	294	1,500	1,300	55,701	99.93336	99.93391	99.93319	98.00000
22/06/2017	287	1,500	1,500	4,500	99.93614	99.93776	99.93590	99.89112
29/06/2017	280	1,500	1,500	9,351	99.93595	99.93899	99.92141	99.88000
06/07/2017	364	1,500	1,500	4,900	99.91616	99.91685	99.91500	99.88400
13/07/2017	357	1,500	1,500	20,600	99.91660	99.92092	99.91300	99.88480
20/07/2017	350	1,500	1,500	6,650	99.91135	99.91573	99.90600	99.89640
27/07/2017	343	1,500	1,500	6,160	99.92363	99.92611	99.92353	99.90331
03/08/2017	336	1,500	1,500	6,600	99.92547	99.92587	99.92460	99.90524
10/08/2017	329	1,500	1,500	6,400	99.92960	99.92991	99.92955	99.90871
17/08/2017	322	1,500	1,500	5,410	99.93371	99.93484	99.93363	99.92181
24/08/2017	315	1,500	1,500	23,200	99.93342	99.93380	99.93298	99.89000
31/08/2017	308	1,500	1,500	5,700	99.93558	99.93558	99.93558	99.92926
07/09/2017	301	1,500	1,500	3,800	99.93240	99.93383	99.92660	99.91874
14/09/2017	294	1,500	1,500	2,500	99.92032	99.92841	99.91450	99.89502
21/09/2017	287	1,500	1,500	5,900	99.91246	99.91452	99.90690	99.87380
28/09/2017	280	1,500	1,500	4,950	99.92404	99.93000	99.92383	99.90229
05/10/2017	273	1,500	1,500	9,650	99.93939	99.94078	99.93812	99.91200
12/10/2017	364	1,500	1,500	8,200	99.92021	99.92021	99.92021	99.89050
19/10/2017	357	1,500	1,500	4,500	99.92128	99.92128	99.92128	99.91389
26/10/2017	350	1,500	1,500	6,500	99.92765	99.92765	99.92765	99.89743
01/11/2017	344	1,500	1,500	4,000	99.92775	99.92775	99.92775	99.91238
09/11/2017	336	1,500	1,500	5,120	99.92815	99.92860	99.92760	99.91046
16/11/2017	329	1,500	1,500	5,200	99.92950	99.92950	99.92950	99.90712
23/11/2017	322	1,500	1,500	8,000	99.93000	99.93000	99.93000	99.91310
30/11/2017	315	1,500	1,500	5,000	99.93535	99.93535	99.93535	99.93135
07/12/2017	308	1,500	1,500	7,040	99.93814	99.93842	99.93800	99.91771
14/12/2017	364	1,500	1,500	9,700	99.90658	99.91252	99.89170	99.87000
21/12/2017	357	1,500	1,500	15,900	99.91502	99.91502	99.91502	99.90892
28/12/2017	350	1,500	1,500	7,190	99.92982	99.92982	99.92982	99.91780

Continues

Banco de México's Bonds (BONDES D)
Three years
Weekly auction results

	Maturity (days)	Amount in MXN million			Price			
		Offered	Allotted	Tendered	Weighted placement	Maximum	Minimum allotted	Minimum
05/01/2017	1,064	1,000	1,000	8,850	99.47800	99.47800	99.47800	99.43000
12/01/2017	1,057	1,000	1,000	29,720	99.49240	99.49240	99.49240	97.00000
19/01/2017	1,050	1,000	1,000	45,200	99.51690	99.51690	99.51690	99.40001
26/01/2017	1,043	1,000	1,000	20,300	99.53000	99.53000	99.53000	97.00000
02/02/2017	1,092	1,000	1,000	9,600	99.52180	99.52182	99.52159	99.48552
09/02/2017	1,085	1,000	1,000	5,668	99.53433	99.53441	99.53198	99.51790
16/02/2017	1,078	1,000	1,000	15,387	99.55383	99.55387	99.55087	90.00000
23/02/2017	1,071	1,000	1,000	6,600	99.57013	99.57116	99.56910	99.45000
02/03/2017	1,064	1,000	1,000	111,900	99.57092	99.57119	99.56847	90.00000
09/03/2017	1,057	1,000	1,000	6,500	99.58485	99.58491	99.58436	99.54420
16/03/2017	1,050	1,000	1,000	5,700	99.59966	99.59979	99.59844	99.54804
23/03/2017	1,043	1,000	1,000	16,000	99.60248	99.60248	99.60248	90.00000
30/03/2017	1,036	1,000	1,000	71,700	99.53288	99.59172	99.52634	99.47000
06/04/2017	1,092	1,500	1,500	4,950	99.51877	99.53621	99.51000	99.45182
12/04/2017	1,086	1,500	1,500	15,101	99.47600	99.47700	99.47400	98.00000
20/04/2017	1,078	1,500	1,500	13,024	99.49795	99.51033	99.49670	98.00000
27/04/2017	1,071	1,500	1,500	12,500	99.50682	99.50682	99.50682	98.00000
04/05/2017	1,064	1,500	1,500	10,100	99.52684	99.52697	99.52500	98.00000
11/05/2017	1,057	1,500	1,500	124,816	99.54297	99.54444	99.54150	99.49000
18/05/2017	1,050	1,500	1,500	59,831	99.55222	99.55364	99.54939	99.46620
25/05/2017	1,043	1,500	1,500	133,432	99.56515	99.56701	99.56328	99.47930
01/06/2017	1,092	1,500	1,500	5,300	99.54115	99.54115	99.54115	99.45238
08/06/2017	1,085	1,500	1,500	15,626	99.55155	99.55228	99.55000	98.00000
15/06/2017	1,078	1,500	1,500	8,498	99.54951	99.55126	99.54721	99.41111
22/06/2017	1,071	1,500	1,500	6,234	99.55703	99.55742	99.55520	99.47440
29/06/2017	1,064	1,500	1,500	234,798	99.57136	99.57241	99.56926	99.45178
06/07/2017	1,057	1,500	1,500	111,800	99.58706	99.58709	99.58700	99.53545
13/07/2017	1,050	1,500	1,500	23,680	99.59407	99.59494	99.59130	99.49920
20/07/2017	1,043	1,500	1,500	15,193	99.59481	99.59615	99.59300	99.50229
27/07/2017	1,036	1,500	1,500	14,813	99.60033	99.60100	99.59861	99.40000
03/08/2017	1,092	1,500	1,500	12,500	99.56361	99.56500	99.56308	99.50000
10/08/2017	1,085	1,500	1,500	22,042	99.60101	99.60176	99.59950	99.53804
17/08/2017	1,078	1,500	1,500	9,570	99.61223	99.61250	99.61200	99.54783
24/08/2017	1,071	1,500	1,500	11,400	99.61107	99.61330	99.61062	99.56780
31/08/2017	1,064	1,500	1,500	11,700	99.58857	99.59931	99.57936	99.49270
07/09/2017	1,057	1,500	1,500	7,099	99.57928	99.58726	99.57690	99.52320
14/09/2017	1,050	1,500	1,500	13,000	99.57462	99.57700	99.57130	99.55443
21/09/2017	1,043	1,500	1,500	9,500	99.56658	99.57192	99.56100	99.47570
28/09/2017	1,092	1,500	1,500	13,700	99.52803	99.55023	99.51580	99.40000
05/10/2017	1,085	1,500	1,500	114,100	99.55365	99.55714	99.55180	99.00000
12/10/2017	1,078	1,500	1,500	10,200	99.56140	99.56150	99.56007	99.20000
19/10/2017	1,071	1,500	1,500	28,300	99.56672	99.56757	99.56500	99.25000
26/10/2017	1,064	1,500	1,500	10,920	99.57980	99.58000	99.57700	99.40000
01/11/2017	1,058	1,500	1,500	13,299	99.58290	99.58294	99.58277	99.46900
09/11/2017	1,050	1,500	1,500	7,100	99.58940	99.58967	99.58836	99.57387
16/11/2017	1,043	1,500	1,500	8,200	99.59955	99.59998	99.59869	99.57931
23/11/2017	1,036	1,500	1,500	14,100	99.60800	99.60800	99.60800	99.58606
30/11/2017	1,092	1,500	1,500	10,458	99.58800	99.58800	99.58800	99.54384
07/12/2017	1,085	1,500	1,500	7,840	99.59009	99.59250	99.58900	99.24000
14/12/2017	1,078	1,500	1,500	10,200	99.59100	99.59100	99.59100	99.19296
21/12/2017	1,071	1,500	1,500	53,000	99.59652	99.59652	99.59652	99.46529
28/12/2017	1,064	1,500	1,500	9,799	99.61430	99.61430	99.61430	99.59625

Continues

Banco de México's Bonds (BONDES D)
Five years
Weekly auction results

		Amount in MXN million			Price			
	Maturity (days)	Offered	Allotted	Tendered	Weighted placement	Maximum	Minimum allotted	Minimum
05/01/2017	1,778	1,000	1,000	6,800	99.03428	99.03428	99.03428	98.97000
12/01/2017	1,771	1,000	1,000	165,470	99.08446	99.08446	99.08446	97.00000
19/01/2017	1,820	1,000	1,000	30,800	99.05901	99.06000	99.05705	90.00000
26/01/2017	1,813	1,000	1,000	72,000	99.08902	99.08902	99.08902	97.00000
02/02/2017	1,806	1,000	1,000	5,320	99.12930	99.13110	99.12511	99.07700
09/02/2017	1,799	1,000	1,000	15,024	99.13201	99.13274	99.13010	99.07000
16/02/2017	1,792	1,000	1,000	155,900	99.16357	99.16373	99.16340	97.00000
23/02/2017	1,785	1,000	1,000	13,500	99.17848	99.19000	99.17354	99.10000
02/03/2017	1,778	1,000	1,000	11,989	99.18295	99.18990	99.17600	99.00000
09/03/2017	1,771	1,000	1,000	5,169	99.19063	99.19213	99.19000	99.15550
16/03/2017	1,764	1,000	1,000	7,900	99.18131	99.19716	99.17682	99.16170
23/03/2017	1,820	1,000	1,000	6,100	99.15679	99.16338	99.15020	99.11522
30/03/2017	1,813	1,000	1,000	7,280	99.11465	99.15778	99.09600	90.00000
06/04/2017	1,806	1,500	1,500	9,701	99.08223	99.08434	99.08000	98.00000
12/04/2017	1,800	1,500	1,500	7,800	99.04441	99.04476	99.04300	98.00000
20/04/2017	1,792	1,500	1,500	16,000	99.05735	99.05735	99.05735	98.00000
27/04/2017	1,785	1,500	1,500	65,400	99.08995	99.09132	99.08758	98.00000
04/05/2017	1,778	1,500	1,500	9,800	99.11718	99.11718	99.11718	99.09400
11/05/2017	1,771	1,500	1,500	8,574	99.15437	99.15500	99.15395	99.00000
18/05/2017	1,820	1,500	1,500	67,309	99.14140	99.14425	99.13993	99.01271
25/05/2017	1,813	1,500	1,500	20,073	99.16395	99.16442	99.16301	99.11905
01/06/2017	1,806	1,500	1,500	156,295	99.15554	99.15760	99.15347	99.02612
08/06/2017	1,799	1,500	1,500	23,764	99.16496	99.16591	99.16091	99.15300
15/06/2017	1,792	1,500	1,500	7,096	99.17230	99.17314	99.16686	98.00000
22/06/2017	1,785	1,500	1,500	58,801	99.19847	99.19929	99.19517	99.01230
29/06/2017	1,778	1,500	1,500	112,899	99.22603	99.22630	99.22590	99.04330
06/07/2017	1,771	1,500	1,500	8,000	99.22902	99.23000	99.22791	99.18986
13/07/2017	1,764	1,500	1,500	2,200	99.25258	99.25557	99.25100	99.25100
20/07/2017	1,820	1,500	1,500	12,850	99.21537	99.21600	99.21505	99.15000
27/07/2017	1,813	1,500	1,500	25,141	99.21985	99.22054	99.21725	99.10097
03/08/2017	1,806	1,500	1,500	14,350	99.24770	99.24770	99.24770	99.10000
10/08/2017	1,799	1,500	1,500	9,811	99.30751	99.30900	99.30400	99.28400
17/08/2017	1,792	1,500	1,500	8,150	99.32131	99.32131	99.32131	99.30833
24/08/2017	1,785	1,500	1,500	7,900	99.30648	99.31650	99.29784	99.28948
31/08/2017	1,778	1,500	1,500	7,200	99.28355	99.28680	99.27110	99.23037
07/09/2017	1,771	1,500	1,500	17,499	99.23474	99.23815	99.23180	99.15940
14/09/2017	1,820	1,500	1,500	60,600	99.16000	99.16042	99.15917	99.14860
21/09/2017	1,813	1,500	1,500	8,100	99.36272	99.83555	99.12630	98.98460
28/09/2017	1,806	1,500	1,500	11,030	99.15957	99.15957	99.15957	99.11328
05/10/2017	1,799	1,500	1,500	4,900	99.20264	99.20520	99.20200	99.18145
12/10/2017	1,792	1,500	1,500	10,750	99.23021	99.23190	99.22942	99.14981
19/10/2017	1,785	1,500	1,500	9,550	99.23227	99.23520	99.23080	99.17034
26/10/2017	1,778	1,500	1,500	4,600	99.25331	99.25363	99.25015	99.20586
01/11/2017	1,772	1,500	1,500	4,400	99.25732	99.25832	99.25653	99.25625
09/11/2017	1,764	1,500	1,500	4,030	99.24561	99.24700	99.24315	99.21145
16/11/2017	1,820	1,500	1,500	7,500	99.22556	99.23345	99.22500	99.16531
23/11/2017	1,813	1,500	1,500	4,333	99.22885	99.23010	99.22720	99.21031
30/11/2017	1,806	1,500	1,500	9,177	99.23984	99.23985	99.23984	99.11370
07/12/2017	1,799	1,500	1,500	4,735	99.23239	99.23710	99.22955	99.15000
14/12/2017	1,792	1,500	1,500	8,914	99.23350	99.23350	99.23350	98.74966
21/12/2017	1,785	1,500	1,500	9,740	99.24302	99.24302	99.24302	99.15000
28/12/2017	1,778	1,500	1,500	19,648	99.25145	99.25145	99.25145	99.09000

Source: Banco de México.

Table A 36
Representative Interest Rates: Cetes and Fixed Rate Bonds
Yield on public securities
Annual rates in percent [1]

		CETES [2]			Fixed rate bonds					
	28 days	91 days	182 days	364 days	3 years (1092 days)	5 years (1820 days)	7 years (2520 days)	10 years (3640 days)	20 years (7280 days)	30 years (10800 days)
2006	7.19	7.30	7.41	7.51	7.71	7.86	8.19	8.39	8.55	8.08
2007	7.19	7.35	7.48	7.60	7.60	7.70		7.77	7.83	7.83
2008	7.68	7.89	8.02	8.09	8.00	8.24		8.36	8.55	8.44
2009	5.43	5.52	5.60	5.83	6.51	7.41		7.96	8.48	8.79
2010	4.40	4.57	4.68	4.86	5.59	6.35		6.95	7.60	7.85
2011	4.24	4.35	4.51	4.66	5.38	5.93		6.65	7.85	8.00
2012	4.24	4.38	4.51	4.63	4.89	5.09		5.60	6.79	6.80
2013	3.75	3.81	3.90	3.98	4.42	4.70		5.63	6.42	6.67
2014	3.00	3.12	3.23	3.35	4.72	4.88		6.01	6.74	7.02
2015	2.98	3.14	3.29	3.54	4.90	5.31		5.96	6.56	6.62
2016	4.15	4.34	4.50	4.61	5.47	5.73		6.18	6.70	6.77
2017	6.69	6.88	7.02	7.12	6.99	7.04		7.20	7.48	7.51
2015										
Jan	2.67	2.91	3.01	3.23	4.69	4.58			6.37	6.00
Feb	2.81	2.94	3.09	3.21	4.93	5.05		5.31	6.24	
Mar	3.04	3.12	3.32	3.53	5.26	5.15		6.04		6.42
Apr	2.97	3.09	3.24	3.50	4.88	5.18		5.83	6.43	6.38
May	2.98	3.09	3.20	3.51	5.07	5.26			6.61	6.69
Jun	2.96	3.12	3.25	3.54	5.01	5.33		6.25	6.73	
Jul	2.99	3.13	3.28	3.63	4.89	5.46		6.07		6.76
Aug	3.04	3.35	3.45	3.70	5.01	5.59			6.56	6.68
Sep	3.10	3.33	3.46	3.72	4.80	5.67		6.07	6.72	
Oct	3.02	3.13	3.26	3.53	4.60	5.37			6.56	6.90
Nov	3.02	3.22	3.42	3.70	4.83	5.46		6.18		6.89
Dec	3.14	3.29	3.51	3.68	4.80	5.64			6.81	6.90
2016										
Jan	3.08	3.30	3.46	3.58	5.11	5.53		6.23	6.88	
Feb	3.36	3.53	3.66	3.53	5.05	5.68		6.07		6.86
Mar	3.80	3.91	4.03	4.11	5.25	5.42		6.03	6.73	6.99
Apr	3.74	3.83	3.94	4.04	5.06	5.28			6.46	6.55
May	3.81	3.94	4.00	4.47	5.00	5.50		5.91	6.80	
Jun	3.81	4.14	4.32	4.47	5.27	5.64		6.08		6.85
Jul	4.21	4.39	4.59	4.79	5.41	5.59			6.41	6.37
Aug	4.24	4.36	4.63	4.76	5.34	5.60		6.01	6.25	
Sep	4.28	4.48	4.70	4.87	5.63	5.52		5.99	6.47	6.29
Oct	4.69	4.85	5.03	5.23	5.50	5.82		6.09		6.55
Nov	5.15	5.47	5.57	5.31	6.57	5.98			6.68	7.67
Dec	5.61	5.87	6.09	6.21	6.45	7.14		7.25	7.60	
2017										
Jan	5.83	6.25	6.54	6.68	7.39	7.36		7.60		7.96
Feb	6.06	6.37	6.64	6.94	6.94	7.24			7.96	7.71
Mar	6.32	6.56	6.74	6.92	7.04	7.08		7.40	7.73	7.52
Apr	6.50	6.66	6.79	6.99	6.97	6.95		7.24	7.64	
May	6.56	6.82	6.97	7.25	7.01	7.04		7.32		7.61
Jun	6.82	7.05	7.20	7.20	6.97	7.05			7.25	7.17
Jul	6.99	7.08	7.17	7.25	6.82	6.63		6.88	7.13	
Aug	6.94	7.11	7.16	7.22	6.72	6.77		6.89	7.16	7.25
Sep	6.99	7.09	7.15	7.20	6.72	6.78		6.79		7.19
Oct	7.03	7.09	7.19	7.18	7.06	6.71			7.44	7.60
Nov	7.02	7.13	7.23	7.29	7.05	7.10		7.19	7.52	
Dec	7.17	7.31	7.41	7.33	7.17	7.75		7.53		7.62

1/ Simple average.
2/ Primary auction placement rate for 28, 91, 182 and 364 days, respectively.
Source: Banco de México.

Continues

Representative Interest Rates
Yields on public securities
Annual rates in percent [1]

		UDIBONOS [2]			Surtax		
					BPAs [3/ 4/]	BPATs [3/ 5/]	BPA 182 [3/ 6/]
	3 years	10 years	20 years	30 years	3 years	5 years	7 years
	(1092 days)	(3640 days)	(7280 days)	(10800 days)	(1092 days)	(1820 days)	(2548 days)
2006		4.17	4.34	4.41	0.20	0.20	0.20
2007	3.40	3.63	3.58	3.61	0.14	0.11	0.13
2008	3.48	4.04	3.75	4.21	0.22	0.18	0.19
2009	2.53	3.84		4.40	0.44	0.37	0.35
2010	1.47	2.79		3.66	0.26	0.22	0.22
2011	1.47	2.59		3.91	0.31	0.28	0.24
2012	0.99	1.97		3.12	0.38	0.36	0.25
2013	0.88	1.86		3.10			0.20
2014	0.92	2.56		3.55			0.00
2015	2.03	2.91		3.52			0.00
2016	2.30	2.97		3.64			-0.01
2017	3.08	3.32		3.72			0.06
2015							
Jan	1.84	2.52		3.24			-0.12
Feb	2.00	2.62		3.10			-0.07
Mar	2.40	2.82		3.35			0.04
Apr	2.15	2.86		3.49			0.11
May	2.30	2.88		3.52			0.10
Jun	2.00	2.99		3.51			0.04
Jul	1.82	2.91		3.61			0.00
Aug	2.02	3.00		3.57			-0.04
Sep	1.74	2.99		3.60			-0.01
Oct	1.56	2.99		3.64			-0.02
Nov	1.94	3.02		3.68			-0.05
Dec	2.62	3.27		3.89			-0.01
2016							
Jan	2.59	3.22		3.94			0.02
Feb	1.98	3.20		3.90			-0.07
Mar	2.35	3.02		3.82			-0.03
Apr	2.09	3.07		3.69			0.04
May	2.25	3.13		3.85			0.00
Jun	2.15	3.13		3.70			-0.01
Jul	1.91	2.57		3.30			-0.02
Aug	2.04	2.62		3.30			-0.01
Sep	2.24	2.70		3.36			0.00
Oct	2.22	2.74		3.46			0.00
Nov	3.20	3.08		3.58			0.01
Dec	2.58	3.18		3.79			0.01
2017							
Jan	2.62	3.02		3.89			-0.11
Feb	2.80	3.28		3.87			-0.30
Mar	2.92	3.42		3.77			-0.05
Apr	3.23	3.46		3.86			0.17
May	3.11	3.36		3.78			0.18
Jun	3.17	3.24		3.49			0.16
Jul	3.07	3.31		3.60			0.12
Aug	3.09	3.19		3.58			0.07
Sep	3.00	3.20		3.56			0.12
Oct	3.20	3.23		3.74			0.13
Nov	3.36	3.45		3.74			0.14
Dec	3.38	3.68		3.73			0.14

1/ Simple average.
2/ Federal government development bonds denominated in UDIs paying a fixed real interest rate.
3/ Savings protection bonds issued by the Institute for the Protection of Bank Savings (*Instituto de Protección al Ahorro Bancario*, IPAB).
4/ Spread in percentage points over the coupon paying the 28-day Cetes primary auction interest rate.
5/ Spread in percentage points over the coupon paying the 91-day Cetes primary auction interest rate.
6/ Spread in percentage points over the coupon paying the 182-day Cetes primary auction interest rate.
Source: Banco de México.

Table A 37
Representative Exchange Rates
Costs of bank deposits (CCP and CPP), interbank interest rate,
overnight interest rate and short-term private securities
Annual rates in percent [1]

		Target rate [2]	Weighted funding rate		Interbank rates			Cost of bank deposits					Short-term private securities [3]
			Bank	Government	28-day TIIE	91-day TIIE	91-day Mexibor [4]	CCP	CCP-USD	CCP-Udis	CPP	CCP development banks	
2006			7.23	7.07	7.51	7.69	7.38	6.06	4.05	5.45	5.14	7.55	7.51
2007			7.23	7.12	7.66	7.78	7.24	5.99	4.44	4.93	5.00	7.47	7.56
2008		7.84	7.82	7.67	8.28	8.35		6.73	3.27	4.74	5.69	7.94	8.71
2009		5.59	5.62	5.55	5.93	5.93		5.07	2.62	4.67	4.25	6.06	7.07
2010		4.50	4.59	4.55	4.91	5.00		4.17	2.18	4.20	3.41	4.87	5.29
2011		4.50	4.48	4.46	4.82	4.86		4.18	2.15	3.89	3.34	4.67	4.92
2012		4.50	4.49	4.50	4.79	4.81		4.20	2.79	4.37	3.25	4.79	4.73
2013		3.97	3.98	4.00	4.28	4.29		3.86	3.57	4.30	2.97	4.52	4.25
2014		3.22	3.22	3.25	3.52	3.53		3.23	3.78	4.29	2.41	3.99	3.55
2015		3.01	3.05	3.08	3.32	3.34		3.03	3.71	4.33	2.18	3.91	3.42
2016		4.15	4.16	4.18	4.47	4.57		3.76	3.71	4.37	2.67	4.75	4.72
2017		6.68	6.71	6.73	7.06	7.12		5.81	4.11	4.45	4.25	6.72	7.34
2015													
	Jan	3.00	3.01	3.04	3.30	3.31		3.01	3.42	4.32	2.20	3.83	3.33
	Feb	3.00	3.03	3.06	3.30	3.31		3.01	3.77	4.32	2.24	3.82	3.36
	Mar	3.00	3.05	3.08	3.30	3.33		3.00	3.59	4.32	2.21	3.82	3.45
	Apr	3.00	3.02	3.04	3.30	3.31		3.02	3.66	4.31	2.23	3.84	3.41
	May	3.00	3.00	3.02	3.30	3.31		3.02	3.67	4.32	2.24	3.87	3.53
	Jun	3.00	3.07	3.10	3.30	3.31		3.03	3.82	4.32	2.23	3.86	3.28
	Jul	3.00	3.07	3.10	3.30	3.32		3.03	3.74	4.33	2.15	3.96	3.36
	Aug	3.00	3.03	3.08	3.32	3.35		3.03	3.78	4.33	2.13	3.98	3.32
	Sep	3.00	3.03	3.06	3.33	3.36		3.04	3.69	4.33	2.16	4.03	3.46
	Oct	3.00	3.02	3.04	3.31	3.32		3.03	3.73	4.34	2.16	3.98	3.39
	Nov	3.00	3.05	3.07	3.32	3.38		3.02	3.88	4.34	2.13	3.95	3.58
	Dec	3.11	3.21	3.24	3.42	3.50		3.06	3.77	4.35	2.11	4.02	3.60
2016													
	Jan	3.25	3.27	3.28	3.56	3.59		3.13	3.80	4.35	2.19	4.11	3.64
	Feb	3.47	3.48	3.48	3.75	3.78		3.20	4.00	4.35	2.24	4.19	3.87
	Mar	3.75	3.77	3.79	4.06	4.11		3.40	3.80	4.36	2.40	4.42	4.26
	Apr	3.75	3.74	3.76	4.06	4.12		3.48	3.41	4.36	2.47	4.46	4.12
	May	3.75	3.77	3.80	4.08	4.14		3.54	3.41	4.36	2.53	4.49	4.17
	Jun	3.77	3.80	3.83	4.10	4.21		3.59	3.43	4.36	2.57	4.59	4.30
	Jul	4.25	4.24	4.27	4.56	4.66		3.75	3.46	4.36	2.67	4.77	4.71
	Aug	4.25	4.27	4.29	4.59	4.69		3.88	3.62	4.36	2.75	4.86	4.80
	Sep	4.28	4.30	4.33	4.61	4.72		3.94	3.75	4.36	2.82	4.87	4.86
	Oct	4.75	4.75	4.77	5.11	5.19		4.15	3.89	4.39	2.98	5.17	5.33
	Nov	4.98	4.98	5.00	5.34	5.59		4.32	3.98	4.41	3.11	5.33	5.64
	Dec	5.52	5.57	5.57	5.84	6.02		4.69	3.94	4.41	3.28	5.71	6.92
2017													
	Jan	5.75	5.77	5.77	6.13	6.28		5.08	4.07	4.41	3.60	5.97	6.63
	Feb	6.11	6.12	6.14	6.44	6.57		5.20	4.24	4.28	3.72	6.21	7.04
	Mar	6.27	6.29	6.31	6.63	6.78		5.41	3.96	4.28	3.93	6.41	7.20
	Apr	6.50	6.55	6.57	6.87	6.93		5.60	4.10	4.48	4.07	6.57	7.27
	May	6.61	6.62	6.63	6.98	7.05		5.74	4.01	4.48	4.18	6.64	7.30
	Jun	6.83	6.83	6.85	7.21	7.31		5.90	3.98	4.48	4.31	6.82	7.40
	Jul	7.00	7.05	7.06	7.37	7.38		6.00	4.10	4.48	4.33	6.97	7.27
	Aug	7.00	7.03	7.04	7.38	7.39		6.12	4.06	4.48	4.48	6.98	7.47
	Sep	7.00	7.03	7.04	7.38	7.39		6.14	4.22	4.48	4.51	6.99	7.48
	Oct	7.00	7.02	7.04	7.38	7.40		6.16	4.14	4.48	4.56	6.98	7.48
	Nov	7.00	7.02	7.03	7.38	7.41		6.15	4.26	4.48	4.66	6.98	7.45
	Dec	7.14	7.21	7.22	7.51	7.56		6.16	4.22	4.53	4.62	7.06	8.08

1/ Simple average.
2/ Banco de México's target for the interest rate on overnight operations in the interbank funding market (operational target).
3/ 28-day interest rate calculated based on Indeval data.
4/ The Mexibor rate stopped being calculated on March 13, 2007 as stated in Nacional Financiera, S.N.C. press release in Mexico's Official Gazette (*Diario Oficial de la Federación*) of that day.
Source: Prepared by Banco de México, based on data from Indeval.

Table A 38
Representative Exchange Rates
MXN/USD

| | | Exchange rate to settle liabilities payable in foreign currency in Mexico [1] | | 48-hour interbank exchange rate Closing references [2] | | | |
| | | | | Buy | | Sell | |
		End of period	Average of period	End of period	Average of period	End of period	Average of period
2012		13.0101	13.1695	12.8684	13.1570	12.8704	13.1599
2013		13.0765	12.7720	13.0850	12.7699	13.0900	12.7728
2014		14.7180	13.2925	14.7445	13.3048	14.7475	13.3075
2015		17.2065	15.8483	17.2050	15.8685	17.2120	15.8728
2016		20.7314	18.6641	20.6320	18.6867	20.6400	18.6925
2017		19.7867	18.9265	19.6515	18.9139	19.6595	18.9202
2014							
	Jan	13.3671	13.1981	13.3120	13.2172	13.3160	13.2207
	Feb	13.2992	13.2888	13.2420	13.2750	13.2460	13.2784
	Mar	13.0837	13.2154	13.0620	13.2004	13.0640	13.2036
	Apr	13.1356	13.0681	13.0830	13.0623	13.0850	13.0650
	May	12.8660	12.9479	12.8525	12.9215	12.8560	12.9242
	Jun	13.0323	12.9832	12.9850	12.9921	12.9865	12.9945
	Jul	13.0578	12.9734	13.2030	12.9873	13.2050	12.9894
	Aug	13.0811	13.1490	13.0680	13.1430	13.0700	13.1452
	Sep	13.4541	13.2002	13.4215	13.2378	13.4235	13.2398
	Oct	13.4239	13.4768	13.4690	13.4785	13.4715	13.4807
	Nov	13.7219	13.5819	13.9055	13.6261	13.9080	13.6284
	Dec	14.7180	14.4266	14.7445	14.5160	14.7475	14.5198
2015							
	Jan	14.6878	14.6757	14.9470	14.6927	14.9500	14.6964
	Feb	14.9228	14.9167	14.9255	14.9138	14.9295	14.9184
	Mar	15.1542	15.2003	15.2560	15.2276	15.2610	15.2323
	Apr	15.2225	15.2228	15.3755	15.2338	15.3795	15.2380
	May	15.3581	15.2555	15.3850	15.2591	15.3890	15.2629
	Jun	15.5676	15.4562	15.6900	15.4803	15.6950	15.4842
	Jul	16.2140	15.8881	16.1230	15.9392	16.1260	15.9430
	Aug	16.8863	16.4880	16.6795	16.5420	16.6825	16.5459
	Sep	17.0073	16.8372	16.9300	16.8546	16.9330	16.8593
	Oct	16.4503	16.6020	16.5040	16.5767	16.5070	16.5810
	Nov	16.5492	16.6348	16.5705	16.6323	16.5735	16.6367
	Dec	17.2065	17.0019	17.2050	17.0703	17.2120	17.0750
2016							
	Jan	18.4530	17.9780	18.1420	18.0904	18.1460	18.0956
	Feb	18.1680	18.4837	18.0970	18.4759	18.1030	18.4817
	Mar	17.4015	17.7383	17.2800	17.6156	17.2900	17.6207
	Apr	17.3993	17.4924	17.2180	17.4773	17.2230	17.4829
	May	18.4527	18.0405	18.4655	18.1565	18.4695	18.1616
	Jun	18.9113	18.6471	18.2535	18.6301	18.2575	18.6351
	Jul	18.8602	18.5699	18.7635	18.5876	18.7685	18.5932
	Aug	18.5773	18.4760	18.8440	18.4880	18.8490	18.4930
	Sep	19.5002	19.1386	19.3740	19.1761	19.3820	19.1822
	Oct	18.8443	18.9480	18.9010	18.8879	18.9060	18.8940
	Nov	20.5521	19.9425	20.4995	20.1302	20.5065	20.1375
	Dec	20.7314	20.5137	20.6320	20.5249	20.6400	20.5326
2017							
	Jan	21.0212	21.3732	20.8125	21.3918	20.8165	21.3991
	Feb	19.8335	20.3812	20.0880	20.2627	20.0960	20.2695
	Mar	18.8092	19.4067	18.7225	19.2814	18.7275	19.2880
	Apr	19.1119	18.7584	18.8610	18.7749	18.8660	18.7799
	May	18.5121	18.7862	18.6385	18.7528	18.6435	18.7599
	Jun	17.8973	18.1901	18.1360	18.1369	18.1430	18.1421
	Jul	17.6886	17.8513	17.8350	17.8113	17.8410	17.8171
	Aug	17.8760	17.8078	17.7735	17.7893	17.7795	17.7955
	Sep	18.1300	17.7991	18.1725	17.8306	18.1785	17.8366
	Oct	19.1474	18.7247	19.1485	18.8261	19.1545	18.8325
	Nov	18.5848	18.9770	18.6545	18.9139	18.6605	18.9200
	Dec	19.7867	19.0625	19.6515	19.1952	19.6595	19.2020

1/ The FIX exchange rate is determined by Banco de México as an average of wholesale foreign exchange references for transactions payable in 48 hours. It is published in Mexico's Official Gazette (*Diario Oficial de la Federación*) one banking business day after its setting date. It is used to settle liabilities denominated in foreign currency payable in Mexico the day after its publishing.

2/ Representative exchange rate for wholesale transactions (among banks, securities firms, foreign exchange firms and other major financial and non-financial companies). Payable two banking business days after it has been settled.

Source: Banco de México.

Table A 39
Mexican Stock Exchange Market Capitalization
MXN million, according to the last listed price

	Overall total	Mining	Manufacturing	Construction	Retail and commerce	Communications and transport	Services	Other 1/
				Previous methodology: indices by sector according to the previous classification of the Mexican Stock Exchange				
2006	3,771,498	142,574	572,818	497,754	650,601	1,395,233	271,454	241,064
2007	4,340,886	273,841	586,815	453,355	644,805	1,772,050	390,211	219,810
2008	3,220,900	141,652	516,354	217,308	632,165	1,239,684	313,449	160,088

New methodology: Mexican Stock Exchange classified by sector 2/3/

	Overall total	Energy 4/	Material	Industrial	Services and non-basic consumer goods	Frequently consumed goods	Healthcare	Financial services	Telecom services	FIBRAS	Information technology 4/
2010	5,603,894		890,805	553,538	308,804	1,537,221	59,004	501,174	1,753,348		
2011	5,703,430		909,660	460,721	539,049	1,758,093	57,958	438,519	1,529,373	10,057	
2012	6,818,386		1,267,993	659,865	390,524	2,214,939	62,058	783,784	1,385,379	53,843	
2013	7,043,213	60,205	1,039,869	860,115	418,190	2,232,512	75,314	825,960	1,377,166	153,881	
2014	7,336,864	85,167	984,285	924,660	457,026	2,246,540	67,821	821,792	1,491,430	258,143	
2015	7,203,516	83,482	833,209	952,513	606,535	2,394,341	50,433	840,806	1,155,469	249,684	37,044
2016	7,507,510	138,568	1,303,284	949,523	475,892	2,243,169	56,385	863,498	1,199,855	240,245	37,092
2017	8,515,921	164,012	1,340,972	1,107,722	529,897	2,643,727	57,853	912,573	1,435,731	273,999	49,434
2014											
Jan	6,745,930	66,449	1,010,350	856,099	407,281	2,106,766	71,163	762,936	1,308,901	155,984	
Feb	6,431,865	66,772	991,813	819,837	387,493	1,992,329	69,408	747,600	1,202,138	154,476	
Mar	6,647,774	77,966	1,005,022	836,382	395,267	2,088,690	68,781	782,663	1,235,441	157,562	
Apr	6,683,452	78,612	994,592	842,110	385,942	2,131,358	72,089	773,308	1,243,023	162,418	
May	6,774,676	81,705	1,039,175	865,548	368,110	2,172,098	73,005	816,567	1,195,876	162,592	
Jun	7,094,308	83,067	1,074,320	900,109	379,468	2,236,613	76,061	847,135	1,275,526	222,009	
Jul	7,332,979	86,090	1,099,026	921,602	386,292	2,229,861	77,658	850,950	1,437,428	244,072	
Aug	7,597,031	90,533	1,123,270	982,008	415,821	2,308,542	77,287	879,460	1,470,777	249,332	
Sep	7,561,524	94,584	1,093,032	1,007,846	417,146	2,242,174	74,236	865,209	1,515,218	252,079	
Oct	7,514,646	95,115	1,080,866	991,567	429,961	2,209,706	75,113	881,296	1,493,430	257,591	
Nov	7,422,661	94,111	1,063,316	960,588	454,375	2,196,287	70,161	821,496	1,498,836	263,491	
Dec	7,336,864	85,167	984,285	924,660	457,026	2,246,540	67,821	821,792	1,491,430	258,143	
2015											
Jan	7,057,264	82,143	913,489	875,864	452,639	2,142,591	62,266	813,673	1,452,554	262,044	
Feb	7,476,394	90,429	1,000,238	918,219	456,558	2,381,674	49,002	858,132	1,461,721	260,420	
Mar	7,426,036	96,061	948,921	906,372	456,274	2,444,069	47,142	851,635	1,422,709	252,853	
Apr	7,473,975	103,031	984,674	911,496	451,466	2,401,227	52,536	831,586	1,490,225	247,733	
May	7,496,304	95,172	1,000,503	885,303	439,735	2,447,346	52,092	820,165	1,507,888	248,101	
Jun	7,542,803	89,829	991,684	899,611	457,383	2,443,441	50,506	820,294	1,546,646	243,410	
Jul	7,637,495	90,810	985,777	957,664	531,760	2,498,740	48,910	826,715	1,451,341	245,778	
Aug	7,508,133	85,675	957,096	960,178	502,656	2,549,147	47,217	786,512	1,388,872	230,779	
Sep	7,451,590	79,674	910,200	975,194	550,540	2,611,782	46,506	790,611	1,250,657	236,426	
Oct	7,478,926	91,918	900,661	1,000,372	607,383	2,427,815	44,253	827,067	1,333,550	245,906	
Nov	7,323,575	83,909	860,224	994,268	615,199	2,411,820	47,360	824,882	1,238,676	247,236	
Dec	7,203,516	83,482	833,209	952,513	606,535	2,394,341	50,433	840,806	1,155,469	249,684	37,044
2016											
Jan	7,240,754	81,924	792,352	934,556	596,121	2,497,823	47,426	810,202	1,203,060	240,960	36,330
Feb	7,261,910	82,016	870,668	938,303	574,200	2,474,920	45,245	829,116	1,165,675	249,436	32,331
Mar	7,572,081	81,509	964,166	1,011,167	587,846	2,467,731	46,741	872,636	1,245,212	261,978	33,095
Apr	7,574,156	77,585	1,029,580	1,000,548	584,808	2,474,455	52,384	870,402	1,177,297	272,269	34,827
May	7,466,497	84,325	985,172	995,938	564,301	2,519,177	48,685	856,801	1,110,936	261,891	39,273
Jun	7,556,846	88,894	1,060,067	1,013,726	528,609	2,557,676	48,969	867,510	1,095,000	259,082	37,313
Jul	7,556,538	87,406	1,160,525	1,013,592	528,735	2,478,975	51,576	873,977	1,066,345	257,985	37,422
Aug	7,688,500	83,690	1,186,421	1,016,726	554,220	2,477,843	54,066	902,847	1,122,054	254,136	36,498
Sep	7,612,893	87,475	1,195,707	1,000,052	545,210	2,466,094	53,146	879,809	1,099,156	250,241	36,003
Oct	7,775,773	128,367	1,213,298	1,011,381	547,225	2,429,879	52,229	919,334	1,172,979	265,044	36,036
Nov	7,413,475	138,998	1,299,728	938,492	467,453	2,259,391	53,237	824,102	1,149,717	242,692	39,666
Dec	7,507,510	138,568	1,303,284	949,523	475,892	2,243,169	56,385	863,498	1,199,855	240,245	37,092
2017											
Jan	7,627,360	141,207	1,443,131	940,478	463,870	2,232,741	54,249	850,964	1,226,199	234,360	40,161
Feb	7,690,589	131,819	1,375,776	961,008	464,185	2,397,717	56,806	827,242	1,205,357	232,729	37,950
Mar	8,023,330	136,866	1,336,601	1,008,542	532,510	2,552,384	57,996	889,177	1,224,288	244,904	40,062
Apr	8,120,785	134,902	1,322,875	1,009,725	564,060	2,552,284	60,917	901,181	1,285,036	250,865	38,940
May	8,038,382	133,460	1,234,133	992,652	592,378	2,535,870	57,090	886,550	1,312,807	254,831	38,610
Jun	8,177,382	148,417	1,266,065	1,015,236	598,065	2,546,408	57,660	952,994	1,284,156	264,423	43,956
Jul	8,367,820	154,798	1,334,206	997,930	604,633	2,537,036	58,485	985,162	1,386,829	265,312	43,428
Aug	8,507,176	170,708	1,343,421	990,005	610,070	2,567,404	58,456	985,796	1,468,994	265,363	46,959
Sep	8,383,148	171,079	1,304,933	960,020	616,145	2,513,298	60,066	1,015,057	1,430,117	266,298	46,134
Oct	8,229,319	165,691	1,341,616	935,211	549,055	2,477,548	59,994	941,071	1,436,776	275,629	46,728
Nov	8,202,827	171,369	1,274,907	1,049,040	556,684	2,489,567	59,451	917,726	1,358,564	276,812	48,708
Dec	8,515,921	164,012	1,340,972	1,107,722	529,897	2,643,727	57,853	912,573	1,435,731	273,999	49,434

1/ Mainly holding companies.
2/ The new BMV methodology of classifying by sector is in force since March 2009.
3/ From January 2013, the Mexican Stock Exchange places FIBRAs in a separate sector.
4/ During 2013 and 2015, the Mexican Stock Exchange incorporated this sector, due to the placement of securities by a firm of the referred sector.
Source: Mexican Stock Exchange (*Bolsa Mexicana de Valores*, BMV).

Table A 40
Mexican Stock Exchange Main Benchmark Index
End of period
October 1978 = 100

			Previous methodology: indices by sector according to the previous classification of the Mexican Stock Exchange				
	Overall total	Mining	Manufacturing	Construction	Retail and commerce	Communications and transport	Services	Other [1]
2007	29,537	62,127	7,604	34,786	44,610	155,119	4,128	7,094
2008	22,380	30,885	5,894	16,985	36,242	117,947	3,340	4,395

			New methodology: Mexican Stock Exchange classification by sector [2]				
	Overall total	Materials	Industrial	Services and non-basic consumer goods	Frequently consumed goods	Healthcare	Financial services	Telecom services
2009	32,120	461	106	310	360	338	59	709
2010	38,551	635	135	329	423	477	70	720
2011	37,078	597	120	351	462	467	52	657
2012	43,706	797	169	407	623	496	75	664
2013	42,727	662	198	532	642	603	90	734
2014	43,146	625	221	521	674	552	98	806
2015	42,978	547	243	684	787	423	102	783
2016	45,643	824	240	609	756	505	94	814
2017	49,354	861	238	807	860	487	95	949
2014								
Jan	40,880	645	199	511	599	570	86	775
Feb	38,783	629	192	503	575	555	85	743
Mar	40,462	632	200	540	606	581	85	776
Apr	40,712	634	202	525	618	577	85	760
May	41,363	655	207	522	639	584	86	767
Jun	42,737	679	214	537	663	609	88	799
Jul	43,818	692	217	531	664	622	90	819
Aug	45,628	701	230	532	683	619	93	833
Sep	44,986	697	239	521	665	594	95	836
Oct	45,028	685	238	530	663	611	96	830
Nov	44,190	663	227	538	664	571	95	819
Dec	43,146	625	221	521	674	552	98	806
2015								
Jan	40,951	581	208	504	644	507	90	780
Feb	44,190	617	219	551	698	441	97	803
Mar	43,725	599	218	548	714	426	97	829
Apr	44,582	628	221	566	707	471	98	827
May	44,704	648	219	561	717	467	98	839
Jun	45,054	642	218	571	708	455	100	853
Jul	44,753	618	231	601	732	444	105	830
Aug	43,722	605	231	584	744	431	99	789
Sep	42,633	568	236	604	756	425	96	766
Oct	44,543	574	245	642	800	409	100	782
Nov	43,419	548	242	679	786	398	101	787
Dec	42,978	547	243	684	787	423	102	783
2016								
Jan	43,631	529	241	691	826	399	93	789
Feb	43,715	568	240	700	830	382	90	792
Mar	45,881	629	258	722	830	394	95	843
Apr	45,785	672	256	718	831	442	95	805
May	45,459	643	255	696	845	442	93	763
Jun	45,966	694	258	659	861	445	94	752
Jul	46,661	763	258	663	846	467	95	745
Aug	47,541	776	258	671	843	457	98	774
Sep	47,246	781	253	661	838	449	95	758
Oct	48,009	787	255	665	824	470	100	801
Nov	45,286	835	237	610	759	478	89	778
Dec	45,643	824	240	609	756	505	94	814
2017								
Jan	47,001	922	238	612	758	487	92	833
Feb	46,857	877	243	626	776	479	90	841
Mar	48,542	858	256	726	827	488	97	851
Apr	49,261	849	256	820	826	512	98	886
May	48,788	792	252	884	818	482	96	902
Jun	49,857	813	258	887	824	486	99	884
Jul	51,012	856	253	902	816	492	102	949
Aug	51,210	862	251	872	830	492	102	980
Sep	50,346	837	243	891	809	505	106	954
Oct	48,626	861	234	829	800	505	98	956
Nov	47,092	818	230	845	807	500	95	901
Dec	49,354	861	238	807	860	487	95	949

1/ Main holding companies.
2/ The new BMV methodology of classification by sector is in force since March 2009.
Source: Mexican Stock Exchange (Bolsa Mexicana de Valores, BMV).

Public Finances

Table A 41
Public Finance Indicators: 2012-2017
Percent of GDP

Item	2012	2013	2014	2015	2016	2017 [p]
Budgetary revenues	22.2	23.3	22.8	23.0	24.1	22.7
Net paid expenditure	24.8	25.7	25.9	26.4	26.6	23.8
Budgetary balance	-2.6	-2.3	-3.1	-3.4	-2.5	-1.1
Balance of EUIBC[1]	0.0	0.0	0.0	-0.1	0.0	0.0
Public balance [2]	-2.5	-2.3	-3.1	-3.4	-2.5	-1.1
Primary balance [3]	-0.6	-0.4	-1.1	-1.2	-0.1	1.4
Public Sector Borrowing Requirements	-3.7	-3.7	-4.5	-4.0	-2.8	-1.1
Accrued operational balance [4]	-2.7	-0.4	-3.3	-2.0	-1.1	0.2
Net public debt [5]	32.3	33.2	37.5	40.5	43.1	41.1
Budgetary public sector financial cost [6]	1.9	1.9	2.0	2.2	2.4	2.5

1/ EUIBC = Entities under Indirect Budgetary Control. It includes non-budgetary balance and the difference with sources of financing.
2/ It includes total budgetary balance and the balance of EUIBC.
3/ Defined as the public sector balance less the budgetary financial cost and that of EUIBC.
4/ Defined as public sector accrued economic balance less the inflationary component of the financial cost. Measured by Banco de México.
5/ Includes net liabilities of federal government, public entities and official financial intermediaries (development banks and trust funds). Stocks at end of period. Measured by Banco de México.
6/ Excludes financial cost of public entities under indirect budgetary control.
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Ministry of Finance (SHCP) and Banco de México.

Table A 42
Public Sector Revenues, Expenditures and Balances in 2016 and 2017

Item	2016 Observed		2017 Programmed		2017 Observed p/		Real growth % 2017-2016
	MXN billion	Percentage of GDP	MXN billion	Percentage of GDP 1/	MXN billion	Percentage of GDP	
Budgetary revenues	**4,845.5**	**24.1**	**4,360.9**	**21.5**	**4,947.2**	**22.7**	**-3.7**
Federal government	**3,571.3**	**17.8**	**3,263.8**	**16.1**	**3,837.6**	**17.6**	**1.3**
Tax revenues	2,716.2	13.5	2,739.4	13.5	2,849.3	13.1	-1.1
ISR-IETU-IDE	1,420.7	7.1	1,422.7	7.0	1,565.7	7.2	3.9
Income tax (ISR)	1,426.0	7.1	1,425.8	7.0	1,568.2	7.2	3.7
ISR	1,425.8	7.1	1,425.8	7.0	1,573.7	7.2	4.1
ISR (contractors and legatees)	0.2	0.0	0.0	0.0	-5.5	0.0	d.n.a.
Flat rate business tax (IETU)	-4.0	0.0	n.a.	d.n.a.	-1.7	0.0	d.n.a.
Tax on cash deposits (IDE)	-1.3	0.0	n.a.	d.n.a.	-0.7	0.0	d.n.a.
Value added tax (VAT)	791.7	3.9	797.7	3.9	816.0	3.7	-2.8
Excise tax (IEPS)	411.4	2.0	433.9	2.1	367.8	1.7	-15.7
Import duties	50.6	0.3	45.8	0.2	52.3	0.2	-2.4
Other	41.9	0.2	39.3	0.2	47.4	0.2	6.8
Non-tax revenues	855.1	4.3	524.4	2.6	988.3	4.5	9.0
Public entities and enterprises	**1,274.2**	**6.3**	**1,097.2**	**5.4**	**1,109.6**	**5.1**	**-17.9**
Pemex	481.0	2.4	400.4	2.0	389.9	1.8	-23.6
Other	793.2	3.9	696.7	3.4	719.7	3.3	-14.4
Net paid expenditures	**5,347.8**	**26.6**	**4,855.8**	**23.9**	**5,177.6**	**23.8**	**-8.7**
Accrued programmable	**4,159.3**	**20.7**	**3,517.3**	**17.3**	**3,852.3**	**17.7**	**-12.7**
Deferred payments	n.a.	d.n.a.	-33.1	-0.2	n.a.	d.n.a.	d.n.a.
Programmable accrued expenditures	n.a.	d.n.a.	3,550.4	17.5	n.a.	d.n.a.	d.n.a.
Current expenditures	2,977.3	14.8	2,963.0	14.6	3,059.5	14.1	-3.1
Wages and services	1,110.0	5.5	1,163.9	5.7	1,146.8	5.3	-2.6
Other current expenditures	1,867.4	9.3	1,799.1	8.9	1,912.7	8.8	-3.4
Capital expenditures	1,182.0	5.9	587.4	2.9	792.8	3.6	-36.7
Fixed investment	728.4	3.6	570.1	2.8	569.3	2.6	-26.3
Financial investment and other 2/	453.6	2.3	17.4	0.1	223.6	1.0	-53.5
Non-programmable	**1,188.4**	**5.9**	**1,338.5**	**6.6**	**1,325.3**	**6.1**	**5.2**
Financial cost	473.0	2.4	572.6	2.8	533.4	2.5	6.3
Federal government	370.1	1.8	452.2	2.2	409.9	1.9	4.4
Interests	349.6	1.7	416.3	2.1	373.9	1.7	0.9
Financial restructuring	20.6	0.1	35.8	0.2	36.0	0.2	65.0
Public entities and enterprises	102.9	0.5	120.4	0.6	123.5	0.6	13.1
Revenue sharing	693.8	3.5	742.6	3.7	772.1	3.5	5.0
Adefas and other 3/	21.6	0.1	23.4	0.1	19.8	0.1	-13.7
Budgetary balance	**-502.2**	**-2.5**	**-494.9**	**-2.4**	**-230.4**	**-1.1**	**d. n.a.**
Balance of EUIBC	**-1.6**	**0.0**	**0.0**	**0.0**	**-8.0**	**0.0**	**d.n.a.**
Non-budgetary balance	4.0	0.0	n.a.	d.n.a.	7.0	0.0	d.n.a.
Difference from sources of financing 4/	-5.6	0.0	n.a.	d.n.a.	-15.1	-0.1	d.n.a.
Public balance	**-503.8**	**-2.5**	**-494.9**	**-2.4**	**-238.5**	**-1.1**	**d.n.a.**
Primary balance 5/	**-25.0**	**-0.1**	**78.2**	**0.4**	**310.2**	**1.4**	**d.n.a.**
Public Sector Borrowing Requirements	**-559.4**	**-2.8**	**-596.7**	**-2.9**	**-233.7**	**-1.1**	**d.n.a.**

1/ GDP programmed in the General Economic Policy Guidelines for fiscal year 2017 was used.
2/ Includes recoverable expenditures and transfers for EUIBC amortization and financial investment.
3/ Includes external net expenditure of the Federal Government.
4/ Difference between the public balance calculated with the revenue-expenditure methodology and that calculated according to the sources of the financing methodology.
5/ Defined as public sector balance less interest paid by the budgetary and non-budgetary sectors.
n.a. Not available.
d.n.a. Does not apply.
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Ministry of Finance (SHCP).

Table A 43
Public Sector Revenues, Expenditures and Balances: 2012-2017
Percent of GDP

Item	2012	2013	2014	2015	2016	2017 [p]
Budgetary revenues	22.2	23.3	22.8	23.0	24.1	22.7
Federal government	15.5	16.6	16.5	17.2	17.8	17.6
Tax revenues	8.3	9.6	10.3	12.8	13.5	13.1
Non-tax revenues	7.2	7.0	6.2	4.4	4.3	4.5
Public entities and enterprises	6.7	6.7	6.3	5.9	6.3	5.1
Pemex	2.9	3.0	2.5	2.3	2.4	1.8
Other	3.8	3.8	3.7	3.5	3.9	3.3
Net paid expenditure	24.8	25.7	25.9	26.4	26.6	23.8
Programmable	19.6	20.4	20.5	20.6	20.7	17.7
Current expenditures	14.9	15.0	15.4	15.6	14.8	14.1
Capital expenditures	4.7	5.4	5.1	5.0	5.9	3.6
Non-programmable expenditures	5.2	5.3	5.4	5.8	5.9	6.1
Financial cost	1.9	1.9	2.0	2.2	2.4	2.5
Revenue sharing	3.1	3.3	3.3	3.4	3.5	3.5
Adefas and other [1]	0.1	0.1	0.1	0.2	0.1	0.1
Budgetary balance	-2.6	-2.3	-3.1	-3.4	-2.5	-1.1
Balance of EUIBC [2]	0.0	0.0	0.0	-0.1	0.0	0.0
Public balance	-2.5	-2.3	-3.1	-3.4	-2.5	-1.1
Primary balance [3]	-0.6	-0.4	-1.1	-1.2	-0.1	1.4
Public Sector Borrowing Requirements	-3.7	-3.7	-4.5	-4.0	-2.8	-1.1

1/ Includes net external expenditure of the Federal Government.
2/ EUIBC = Entities Under Indirect Budgetary Control.
3/ Defined as the public balance less budgetary and EUIBC financial costs.
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Ministry of Finance (SHCP).

Table A 44
Public Sector Budgetary Revenues: 2012-2017
Percent of GDP

Item	2012	2013	2014	2015	2016	2017 p/
Budgetary revenues	**22.2**	**23.3**	**22.8**	**23.0**	**24.1**	**22.7**
Classification I						
Federal government	15.5	16.6	16.5	17.2	17.8	17.6
Tax revenues	8.3	9.6	10.3	12.8	13.5	13.1
ISR-IETU-IDE	5.1	5.8	5.5	6.6	7.1	7.2
Income tax (ISR)	4.8	5.6	5.6	6.7	7.1	7.2
ISR	4.8	5.6	5.6	6.6	7.1	7.2
ISR (contractors and legatees)	d.n.a.	d.n.a.	d.n.a.	0.0	0.0	0.0
Flat rate business tax (IETU)	0.3	0.3	-0.1	-0.1	0.0	0.0
Tax on cash deposits (IDE)	0.0	0.0	-0.1	0.0	0.0	0.0
Value added tax (VAT)	3.7	3.4	3.8	3.8	3.9	3.7
Excise tax (IEPS)	-0.8	0.0	0.6	1.9	2.0	1.7
Imports	0.2	0.2	0.2	0.2	0.3	0.2
Other	0.2	0.2	0.2	0.2	0.2	0.2
Non-tax revenues	7.2	7.0	6.2	4.4	4.3	4.5
Rights	6.1	5.6	4.7	0.3	0.3	0.3
Fees	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.0	1.4	1.4	1.9	2.4	2.2
Transfers to MFFSD 1/	d.n.a.	d.n.a.	d. n.a.	2.2	1.5	2.0
Public entities and enterprises	6.7	6.7	6.3	5.9	6.3	5.1
Pemex	2.9	3.0	2.5	2.3	2.4	1.8
Other	3.8	3.8	3.7	3.5	3.9	3.3
Classification II						
Oil revenues	8.8	8.3	7.0	4.6	3.9	3.8
Pemex	2.9	3.0	2.5	2.3	2.4	1.8
Exports	1.9	1.5	1.1	0.1	-0.3	-0.4
Domestic sales	5.5	5.7	5.5	4.1	3.2	4.0
Other	1.4	1.1	0.5	0.5	1.1	0.2
(-) Taxes 2/	5.9	5.4	4.5	2.3	1.6	2.1
Federal government 3/	5.8	5.3	4.5	2.2	1.5	2.0
Non-oil revenues	13.5	15.1	15.8	18.5	20.2	18.9
Federal government 3/	9.7	11.3	12.1	14.9	16.2	15.6
Tax revenues	8.3	9.6	10.3	12.7	13.5	13.1
ISR	4.8	5.6	5.6	6.6	7.1	7.2
IETU	0.3	0.3	-0.1	-0.1	0.0	0.0
IDE	0.0	0.0	-0.1	0.0	0.0	0.0
VAT	3.7	3.4	3.8	3.8	3.9	3.7
IEPS	-0.8	0.0	0.6	1.9	2.0	1.7
Other	0.4	0.4	0.4	0.4	0.5	0.5
Non-tax revenues	1.4	1.7	1.7	2.2	2.7	2.5
Rights	0.3	0.3	0.3	0.3	0.3	0.3
Fees	0.0	0.0	0.0	0.0	0.0	0.0
Other	1.0	1.4	1.4	1.9	2.4	2.2
Public entities and enterprises	3.8	3.8	3.7	3.5	3.9	3.3

1/ Mexican Fund for Stabilization and Development (MFFSD).
2/ Excludes taxes paid on behalf of third parties (VAT and IEPS).
3/ Includes rights and benefits from oil extraction.
d.n.a. Does not apply.
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Ministry of Finance (SHCP).

Table A 45
Public Sector Budgetary Expenditures: 2012-2017
Percent of GDP

Item	2012	2013	2014	2015	2016	2017 [p]
Net paid expenditure	**24.8**	**25.7**	**25.9**	**26.4**	**26.6**	**23.8**
Programmable	19.6	20.4	20.5	20.6	20.7	17.7
Current expenditures	14.9	15.0	15.4	15.6	14.8	14.1
Wages and salaries	5.9	5.9	5.8	5.8	5.5	5.3
Direct	3.3	3.4	3.4	3.3	3.1	3.0
Indirect [1]	2.5	2.5	2.5	2.5	2.4	2.3
Acquisitions	1.7	1.7	1.4	1.2	1.2	1.4
Other [2]	4.1	4.0	4.4	4.7	4.5	4.3
Subsidies and transfers [3]	3.3	3.5	3.8	3.8	3.6	3.1
Capital expenditures	4.7	5.4	5.1	5.0	5.9	3.6
Fixed investment	4.3	4.5	4.7	4.2	3.6	2.6
Direct	2.9	2.8	3.0	2.5	2.3	1.5
Indirect [4]	1.4	1.7	1.7	1.7	1.4	1.1
Financial investment and other [5]	0.4	0.9	0.4	0.9	2.3	1.0
Non-programmable	5.2	5.3	5.4	5.8	5.9	6.1
Financial cost	1.9	1.9	2.0	2.2	2.4	2.5
Federal government	1.6	1.7	1.7	1.7	1.8	1.9
Interest	1.5	1.6	1.6	1.7	1.7	1.7
Financial restructuring	0.1	0.1	0.1	0.1	0.1	0.2
Public entities and enterprises	0.3	0.3	0.3	0.5	0.5	0.6
Revenue sharing	3.1	3.3	3.3	3.4	3.5	3.5
Adefas and other [6]	0.1	0.1	0.1	0.2	0.1	0.1

1/ Includes contributions to state governments for basic education, and transfers for wages and salaries to entities under indirect budgetary control (EUIBC).
2/ General services of the public sector and net external operations of firms and entities of direct budgetary control.
3/ Includes subsidies and transfers other than those paid for wages and salaries, and for capital expenditure.
4/ Includes transfers to finance fixed investment of the EUIBC.
5/ Includes recoverable expenditures and transfers for debt amortization and financial investment of the EUIBC.
6/ Includes other net flows of the federal government.
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Ministry of Finance (SHCP).

Table A 46
Public Sector Net Debt
Average stocks

Years		Broad economic debt [1]					Debt consolidated with Banco de México [2]				
		Domestic	External		Total		Domestic	External		Total	
		MXN billion	USD million	MXN billion	MXN billion	Percentage of GDP	MXN billion	USD million	MXN billion	MXN billion	Percentage of GDP
2012		3,200.3	121,800.1	1,579.2	4,779.5	30.2	5,340.4	-38,744.7	-502.4	4,838.0	30.6
2013		3,610.3	124,602.5	1,630.3	5,240.6	32.2	5,976.5	-42,609.6	-557.5	5,419.0	33.3
2014		4,008.8	130,380.0	1,922.0	5,930.8	33.9	6,635.1	-39,741.5	-585.8	6,049.3	34.6
2015		4,553.4	147,642.5	2,546.6	7,100.0	38.3	7,209.2	-24,546.5	-423.4	6,785.8	36.6
2016	January	4,869.4	163,899.8	2,981.9	7,851.3		7,343.1	-9,177.6	-167.0	7,176.1	
	February	4,818.1	167,400.4	3,030.3	7,848.4		7,306.5	-7,171.5	-129.8	7,176.7	
	March	4,806.2	175,339.8	3,022.3	7,828.5	41.5	7,305.4	-5,685.9	-98.0	7,207.4	38.2
	April	4,774.5	175,531.8	3,015.1	7,789.6		7,340.6	-5,414.2	-93.0	7,247.6	
	May	4,756.7	165,551.6	3,048.1	7,804.8		7,356.9	-4,709.0	-86.7	7,270.2	
	June	4,751.3	167,236.6	3,088.0	7,839.3	40.8	7,369.2	-3,502.3	-64.7	7,304.5	38.0
	July	4,747.4	166,459.5	3,126.7	7,874.1		7,380.7	-2,602.3	-48.9	7,331.8	
	August	4,765.6	167,621.4	3,161.5	7,927.1		7,406.8	-1,523.3	-28.7	7,378.1	
	September	4,784.0	165,148.5	3,200.2	7,984.2	40.7	7,436.8	-888.3	-17.2	7,419.6	37.9
	October	4,798.8	170,166.7	3,214.2	8,013.0		7,455.5	-501.6	-9.5	7,446.0	
	November	4,802.1	158,371.8	3,249.1	8,051.2		7,462.1	-186.1	-3.8	7,458.3	
	December	4,815.8	159,386.3	3,286.5	8,102.3	40.3	7,483.1	196.8	4.1	7,487.2	37.3
2017 [p]	January	5,075.7	181,002.9	3,763.2	8,838.9		7,786.4	7,455.1	155.0	7,941.4	
	February	5,057.2	186,394.0	3,727.1	8,784.3		7,800.5	7,858.8	157.1	7,957.6	
	March	4,970.7	193,847.4	3,643.5	8,614.2	41.7	7,827.1	8,699.9	163.5	7,990.6	38.7
	April	4,933.8	189,905.5	3,600.5	8,534.3		7,837.3	8,851.8	167.8	8,005.1	
	May	4,912.3	190,941.4	3,568.9	8,481.2		7,843.0	9,437.5	176.4	8,019.4	
	June	4,930.2	195,677.6	3,534.4	8,464.6	40.2	7,877.6	10,469.7	189.1	8,066.7	38.3
	July	4,941.3	196,247.9	3,505.9	8,447.2		7,899.9	11,166.7	199.5	8,099.4	
	August	4,952.6	195,650.7	3,485.4	8,438.0		7,918.3	11,823.0	210.6	8,128.9	
	September	4,968.4	191,698.3	3,481.0	8,449.4	39.5	7,940.8	12,328.0	223.9	8,164.7	38.1
	October	4,975.8	182,629.2	3,496.9	8,472.7		7,958.3	12,213.5	233.9	8,192.2	
	November	4,986.9	187,825.5	3,497.9	8,484.8		7,974.3	12,999.4	242.1	8,216.4	
	December	5,003.3	178,988.4	3,519.4	8,522.7	39.2	7,995.2	12,844.8	252.6	8,247.8	37.9

1/ The net broad economic debt includes net liabilities from the federal government, non-financial public entities and enterprises, and official intermediaries (development banks and public funds and trusts). It is calculated in accrued terms with data of the banking system; public values are reported at market value.
2/ The net economic debt consolidated with Banco de México includes central bank's assets and liabilities and all sectors of the broad economic debt.
(-) It means stocks of financial assets are larger than stocks of gross debt.
p/ Preliminary figures.
Source: Banco de México.

Table A 47
Public Sector net Debt
Stocks at end of period

Years		Broad economic debt [1]					Debt consolidated with Banco de México [2]				
		Domestic	External		Total		Domestic	External		Total	
		MXN billion	USD million	MXN billion	MXN billion	Percentage of GDP	MXN billion	USD million	MXN billion	MXN billion	Percentage of GDP
2012		3,516.6	122,463.4	1,587.8	5,104.4	32.3	5,743.4	-40,918.7	-530.5	5,212.9	33.0
2013		3,673.4	132,360.6	1,731.8	5,405.2	33.2	6,159.0	-44,152.1	-577.7	5,581.3	34.3
2014		4,389.9	146,503.1	2,159.7	6,549.6	37.5	7,089.3	-45,765.3	-674.6	6,414.7	36.7
2015		4,717.4	161,700.5	2,789.1	7,506.5	40.5	7,220.4	-12,665.7	-218.5	7,001.9	37.8
2016	January	4,869.4	163,899.8	2,981.9	7,851.3		7,343.1	-9,177.6	-167.0	7,176.1	
	February	4,766.8	170,072.6	3,078.7	7,845.5		7,269.9	-5,118.9	-92.7	7,177.2	
	March	4,782.4	174,417.4	3,006.4	7,788.8	41.3	7,303.2	-1,994.9	-34.4	7,268.8	38.6
	April	4,679.3	174,261.0	2,993.2	7,672.5		7,446.2	-4,539.2	-78.0	7,368.2	
	May	4,685.4	172,731.1	3,180.3	7,865.7		7,422.2	-3,341.0	-61.5	7,360.7	
	June	4,724.3	178,028.3	3,287.2	8,011.5	41.7	7,430.7	2,464.1	45.5	7,476.2	38.9
	July	4,724.1	178,843.0	3,359.3	8,083.4		7,449.5	2,440.8	45.8	7,495.3	
	August	4,893.0	180,536.9	3,405.1	8,298.1		7,590.0	5,954.8	112.3	7,702.3	
	September	4,931.0	181,107.9	3,509.4	8,440.4	43.1	7,676.1	3,867.0	74.9	7,751.0	39.6
	October	4,932.9	176,859.9	3,340.7	8,273.6		7,624.1	3,185.6	60.2	7,684.3	
	November	4,835.1	175,357.9	3,597.6	8,432.7		7,528.5	2,570.8	52.7	7,581.2	
	December	4,966.3	179,324.4	3,697.6	8,663.9	43.1	7,714.1	4,398.9	90.7	7,804.8	38.8
2017 [p]	January	5,075.2	181,002.9	3,763.2	8,838.9		7,786.4	7,455.1	155.0	7,941.4	
	February	5,038.6	184,587.7	3,691.0	8,729.6		7,814.7	7,966.1	159.3	7,974.0	
	March	4,797.7	184,949.7	3,476.2	8,273.9	40.1	7,880.3	9,378.6	176.3	8,056.6	39.0
	April	4,823.2	183,107.1	3,471.6	8,294.8		7,867.9	9,532.9	180.7	8,048.6	
	May	4,826.4	184,172.6	3,442.4	8,268.8		7,865.8	11,271.6	210.7	8,076.5	
	June	5,019.7	186,149.7	3,362.3	8,382.0	39.8	8,050.3	13,989.4	252.7	8,303.0	39.4
	July	5,007.9	186,656.9	3,334.6	8,342.5		8,033.9	14,652.7	261.8	8,295.7	
	August	5,031.9	187,606.9	3,342.1	8,374.0		8,047.5	16,197.5	288.6	8,336.1	
	September	5,094.7	189,773.0	3,446.1	8,540.8	39.9	8,120.3	18,161.7	329.8	8,450.1	39.5
	October	5,042.5	190,102.2	3,640.0	8,682.5		8,116.2	16,913.2	323.9	8,440.1	
	November	5,097.3	188,313.0	3,506.9	8,604.2		8,134.3	17,415.7	324.3	8,458.6	
	December	5,183.9	191,058.3	3,756.8	8,940.7	41.1	8,225.1	18,706.8	367.8	8,592.9	39.5

1/ The net broad economic debt includes net liabilities from the federal government and non-financial public entities and enterprises, as well as official intermediaries (development banks and public funds and trusts). It is calculated in accrued terms with data of the banking system; public values are reported at market value.
2/ The net economic debt consolidated with Banco de México includes central bank's assets and liabilities and all sectors of the broad economic debt.
(-) It means stocks of financial assets are larger than stocks of gross debt.
p/ Preliminary figures.
Source: Banco de México.

Table A 48
Non-financial Public Sector Net Debt [1]
Stocks at end of period

Stock at end of		Non-financial Public Sector Net Debt				
		Domestic	External		Total net debt	
		MXN billion	USD million	MXN billion	MXN billion	Percentage of GDP
2012		3,701.2	115,918.6	1,503.0	5,204.2	32.9
2013		3,947.2	125,414.2	1,641.0	5,588.2	34.3
2014		4,740.5	137,981.6	2,034.0	6,774.5	38.8
2015	January	4,855.9	146,742.3	2,199.4	7,055.3	
	February	4,853.5	146,435.2	2,190.0	7,043.5	
	March	4,743.3	149,262.4	2,278.4	7,021.7	39.6
	April	4,687.9	152,254.1	2,340.4	7,028.2	
	May	4,793.7	151,399.4	2,328.7	7,122.4	
	June	4,830.7	150,468.0	2,360.2	7,190.8	40.0
	July	4,913.7	150,089.7	2,413.0	7,326.7	
	August	4,976.4	150,683.1	2,528.9	7,505.3	
	September	4,989.3	151,112.7	2,554.6	7,543.9	41.3
	October	5,067.4	152,084.1	2,513.1	7,580.5	
	November	5,041.1	151,643.8	2,515.1	7,556.2	
	December	5,084.3	152,836.3	2,636.2	7,720.6	41.7
2016	January	5,238.1	155,359.4	2,826.5	8,064.6	
	February	5,139.1	161,136.1	2,916.9	8,056.0	
	March	5,137.9	165,861.8	2,859.0	7,996.8	42.4
	April	5,009.4	165,973.3	2,850.9	7,860.3	
	May	5,013.5	165,138.1	3,040.5	8,054.0	
	June	5,095.1	169,767.7	3,134.7	8,229.8	42.8
	July	5,086.5	171,142.2	3,214.7	8,301.2	
	August	5,262.5	172,482.3	3,253.2	8,515.7	
	September	5,313.3	172,877.1	3,349.9	8,663.2	44.2
	October	5,322.8	168,507.0	3,182.9	8,505.7	
	November	5,241.1	167,589.4	3,438.2	8,679.3	
	December	5,411.6	170,257.0	3,510.6	8,922.2	44.4
2017 [p]	January	5,487.5	173,373.5	3,604.6	9,092.1	
	February	5,429.6	176,519.6	3,529.6	8,959.2	
	March	5,170.2	176,581.6	3,318.9	8,489.2	41.1
	April	5,179.6	175,768.8	3,332.5	8,512.0	
	May	5,180.8	176,525.6	3,299.4	8,480.3	
	June	5,364.6	178,420.9	3,222.7	8,587.3	40.8
	July	5,363.7	179,485.7	3,206.4	8,570.2	
	August	5,404.6	180,481.7	3,215.2	8,619.8	
	September	5,440.5	183,286.7	3,328.3	8,768.8	40.9
	October	5,384.5	183,504.1	3,513.7	8,898.2	
	November	5,457.4	182,700.8	3,402.4	8,859.8	
	December	5,563.3	182,938.0	3,597.1	9,160.4	42.1

1/ Non-financial public sector (federal government and public entities) net debt is computed on an accrued basis with data available from the banking sector. Federal government domestic securities are reported at market value and external debt is classified by debtor and not by end user.
p/ Preliminary figures.
Source: Banco de México.

Table A 49
Public Sector Total Debt

	MXN billion		Percent of GDP [1]			Real annual change	Percentage structure	
	2016	2017 [p]	2016	2017 [p]	Difference	2017 - 2016	2016	2017 [p]
Public sector total debt (a+b) [2]	**9,936.9**	**10,267.0**	**49.4**	**47.2**	**-2.3**	**-3.2**	**100.0**	**100.0**
a. Net broad economic debt	**8,663.9**	**8,940.6**	**43.1**	**41.1**	**-2.0**	**-3.4**	**87.2**	**87.1**
1. Foreign	3,697.6	3,756.8	18.4	17.3	-1.1	-4.8	37.2	36.6
2. Domestic	4,966.3	5,183.9	24.7	23.8	-0.9	-2.2	50.0	50.5
b. Additional liabilities	**1,273.0**	**1,326.4**	**6.3**	**6.1**	**-0.2**	**-2.4**	**12.8**	**12.9**
1. IPAB [3]	858.4	887.4	4.3	4.1	-0.2	-3.2	8.6	8.6
2. FARAC [4]	215.3	243.8	1.1	1.1	0.0	6.1	2.2	2.4
3. UDIs restructuring programs [5]	45.4	35.9	0.2	0.2	-0.1	-25.9	0.5	0.3
4. Direct Pidiregas [6]	153.9	159.3	0.8	0.7	0.0	-3.1	1.5	1.6
5. Debtor support programs [7]	0.0	0.0	0.0	0.0	0.0	n.s.	0.0	0.0

1/ Amounts expressed in GDP ratio use the GDP of the last quarter of the year.
2/ Non-financial public sector (federal government and public entities) net debt is computed on an accrued basis with data available from the banking sector. Federal government domestic securities are reported at market value and external debt is classified by debtor and not by end user.
3/ It corresponds to the difference between gross liabilities and total assets of IPAB, in accordance with the data of Annex II of Public Debt of the Public Finances Report as of the Fourth Quarter of 2017.
4/ Bonds covered by the federal government of the trust fund for the toll highway rescue program.
5/ Difference between the liabilities of the federal government special Cetes with a bank and UDI's restructured debt.
6/ Outstanding debt associated with direct Pidiregas is based on flows of investment carried out.
7/ It corresponds to credit granted by commercial banks to the federal government via the referred programs.
p/ Preliminary figures.
n.s./ Non-significant.
Source: Ministry of Finance (SHCP) and Banco de México.

Table A 50
Public Sector Total Debt Consolidated with Banco de México

	MXN billion		Percent of GDP [1]			Real annual change	Percentage structure	
	2016	2017 [p]	2016	2017 [p]	Difference	2017 - 2016	2016 [p]	2017 [p]
Public sector total debt consolidated with Banco de México (a+b) [2]	**9,077.8**	**9,919.3**	**45.2**	**45.6**	**0.4**	**2.3**	**100.0**	**100.0**
a. Net debt consolidated with Banco de México	**7,804.8**	**8,592.9**	**38.8**	**39.5**	**0.6**	**3.1**	**86.0**	**86.6**
1. Foreign	90.7	367.8	0.5	1.7	1.2	279.8	1.0	3.7
2. Domestic	7,714.1	8,225.1	38.4	37.8	-0.6	-0.1	85.0	82.9
b. Additional liabilities	**1,273.0**	**1,326.4**	**6.3**	**6.1**	**-0.2**	**-2.4**	**14.0**	**13.4**
1. IPAB [3]	858.4	887.4	4.3	4.1	-0.2	-3.2	9.5	8.9
2. FARAC [4]	215.3	243.8	1.1	1.1	0.0	6.1	2.4	2.5
3. UDIs restructuring programs [5]	45.4	35.9	0.2	0.2	-0.1	-25.9	0.5	0.4
4. Direct Pidiregas [6]	153.9	159.3	0.8	0.7	0.0	-3.1	1.7	1.6
5. Debtor support programs [7]	0.0	0.0	0.0	0.0	0.0	n.s.	0.0	0.0

1/ Amounts expressed in GDP ratio use the GDP of the last quarter of the year.
2/ The net debt consolidated with Banco de México comprises the sectors of broad economic debt with the central bank's financial liabilities and assets.
3/ Corresponds to the difference between gross liabilities and total assets of IPAB, in accordance with the data of Annex II of Public Debt of the Public Finances Report as of the Fourth Quarter of 2017.
4/ Bonds covered by the federal government of the trust fund for the toll highway rescue program.
5/ Difference between the liabilities of the federal government special Cetes with a bank and UDIs' restructured debt.
6/ Outstanding debt associated with direct Pidiregas is based on flows of investment carried out.
7/ It corresponds to credit granted by commercial banks to the federal government via the referred programs.
p/ Preliminary figures.
n.s./ Non-significant.
Source: Ministry of Finance (SHCP) and Banco de México.

Table A 51
Federal Government Domestic Debt Securities
Total circulation per instrument [1]
Current stocks in MXN billion at market value

Stocks at end of		Total securities in circulation	Cetes	Bondes	Udibonos	Fixed rate bonds	Bondes D
2012		4,663.1	811.9	0.0	887.1	2,057.5	906.5
2013		5,150.5	952.1	0.0	940.1	2,195.7	1,062.6
2014		5,935.7	1,010.6	0.0	1,128.0	2,638.7	1,158.3
2015	January	6,098.6	1,007.2	0.0	1,156.3	2,772.2	1,162.9
	February	6,108.1	1,000.6	0.0	1,155.8	2,758.8	1,193.0
	March	6,150.3	1,029.7	0.0	1,147.4	2,773.4	1,199.7
	April	6,193.5	1,026.6	0.0	1,165.0	2,809.0	1,193.0
	May	6,287.4	1,041.5	0.0	1,189.6	2,857.5	1,198.8
	June	6,165.5	1,025.5	0.0	1,180.2	2,729.9	1,229.9
	July	6,229.1	1,016.2	0.0	1,201.3	2,781.7	1,229.9
	August	6,276.8	1,033.9	0.0	1,212.1	2,829.3	1,201.4
	September	6,297.6	984.0	0.0	1,232.0	2,883.2	1,198.3
	October	6,288.7	894.0	0.0	1,251.2	2,937.0	1,206.6
	November	6,293.2	847.3	0.0	1,257.4	2,972.3	1,216.2
	December	6,199.0	865.3	0.0	1,229.6	2,870.4	1,233.7
2016	January	6,255.4	826.6	0.0	1,273.2	2,944.3	1,211.4
	February	6,309.6	816.3	0.0	1,294.3	2,972.4	1,226.7
	March	6,297.4	714.3	0.0	1,329.7	3,045.6	1,207.8
	April	6,354.4	679.7	0.0	1,362.6	3,113.6	1,198.6
	May	6,220.4	675.5	0.0	1,313.2	3,056.8	1,174.9
	June	6,034.4	733.2	0.0	1,222.5	2,936.9	1,141.8
	July	6,133.2	764.6	0.0	1,265.4	2,959.1	1,144.2
	August	6,273.9	774.9	0.0	1,270.6	3,021.6	1,206.7
	September	6,279.0	764.1	0.0	1,293.5	3,043.3	1,178.1
	October	6,192.8	730.9	0.0	1,288.7	3,017.3	1,156.0
	November	6,136.8	746.7	0.0	1,277.5	2,939.2	1,173.4
	December	5,977.9	762.4	0.0	1,290.9	2,766.8	1,157.9
2017 [p]	January	6,083.9	776.4	0.0	1,311.3	2,822.9	1,173.3
	February	6,147.9	780.8	0.0	1,335.5	2,869.3	1,162.3
	March	6,327.3	793.4	0.0	1,373.4	2,968.0	1,192.4
	April	6,440.8	856.3	0.0	1,413.3	2,993.7	1,177.6
	May	6,453.8	810.0	0.0	1,429.0	3,009.3	1,205.5
	June	6,476.6	878.6	0.0	1,449.7	2,949.2	1,199.1
	July	6,529.1	880.1	0.0	1,465.1	2,968.1	1,215.8
	August	6,644.9	896.9	0.0	1,492.4	3,025.2	1,230.5
	September	6,728.8	887.5	0.0	1,531.1	3,053.9	1,256.2
	October	6,684.5	903.3	0.0	1,514.6	3,028.2	1,238.4
	November	6,726.4	886.8	0.0	1,547.8	3,024.4	1,267.6
	December	6,443.8	884.6	0.0	1,458.8	2,839.4	1,261.1

1/ Total circulation includes federal government securities and placements of monetary regulation bonds.
p/ Preliminary figures.
Source: Banco de México.

Table A 52
Federal Government Domestic Debt Securities
Total circulation per holding sector [1/]
Current stocks in MXN billion at market value

Stocks at end of		Total securities in circulation	Private firms and individuals	Non-bank public sector	Development banks	Commercial banks
2012		4,663.1	3,408.8	126.2	237.7	890.3
2013		5,150.5	3,744.8	121.8	295.5	988.4
2014		5,935.7	4,518.8	128.1	365.2	923.6
2015	January	6,098.6	4,677.6	121.7	351.2	948.2
	February	6,108.1	4,661.9	124.9	342.8	978.4
	March	6,150.3	4,589.7	123.4	336.1	1,101.1
	April	6,193.5	4,645.3	121.8	341.0	1,085.4
	May	6,287.4	4,693.3	134.7	342.1	1,117.3
	June	6,165.5	4,651.0	118.7	341.4	1,054.4
	July	6,229.1	4,750.5	117.2	353.2	1,008.3
	August	6,276.8	4,756.8	118.7	349.6	1,051.7
	September	6,297.6	4,702.3	118.5	348.8	1,128.0
	October	6,288.7	4,702.4	113.5	331.9	1,141.0
	November	6,293.2	4,730.9	118.9	332.1	1,111.3
	December	6,199.0	4,690.6	123.6	342.4	1,042.5
2016	January	6,255.4	4,799.6	114.5	320.7	1,020.7
	February	6,309.6	4,795.1	133.4	322.3	1,058.9
	March	6,297.4	4,756.8	143.1	335.8	1,061.7
	April	6,354.4	4,799.5	142.0	347.0	1,065.9
	May	6,220.4	4,687.7	137.5	364.5	1,030.7
	June	6,034.4	4,598.0	140.5	362.2	933.7
	July	6,133.2	4,703.7	133.8	368.3	927.5
	August	6,273.9	4,776.8	144.8	403.0	949.3
	September	6,279.0	4,883.8	115.9	405.4	874.0
	October	6,192.8	4,752.1	119.7	405.9	915.1
	November	6,136.8	4,636.0	135.6	447.4	917.9
	December	5,977.9	4,577.9	143.7	428.2	828.1
2017 [p/]	January	6,083.9	4,636.7	153.5	424.8	868.9
	February	6,147.9	4,696.9	157.4	402.3	891.2
	March	6,327.3	4,875.1	156.3	388.4	907.5
	April	6,440.8	4,907.5	159.6	388.3	985.5
	May	6,453.8	4,870.4	163.1	400.1	1,020.2
	June	6,476.6	4,956.0	148.8	393.7	978.1
	July	6,529.1	5,044.1	159.1	430.7	895.3
	August	6,644.9	5,073.6	167.6	440.1	963.5
	September	6,728.8	5,161.9	158.9	444.9	963.1
	October	6,684.5	5,080.7	171.4	441.0	991.6
	November	6,726.4	5,141.1	165.0	444.4	976.0
	December	6,443.8	4,941.2	142.2	439.5	920.9

1/ Total circulation includes federal government securities and placement of monetary regulation bond.
p/ Preliminary figures.
Source: Banco de México.

External Sector

Table A 53
External Sector Indicators

	2010	2011	2012	2013	2014	2015	2016	2017
Balance of payments				USD billion				
Current account	-5.0	-12.4	-18.4	-30.9	-23.7	-29.3	-22.8	-18.8
Trade balance	-3.0	-1.4	0.0	-1.2	-3.1	-14.7	-13.1	-10.9
Capital account	-0.2	-0.3	-0.1	2.3	0.0	-0.1	0.0	0.1
Financial account	-26.6	-26.6	-24.3	-42.1	-42.4	-42.9	-31.6	-26.3
Direct investment	-12.9	-11.9	1.2	-33.8	-23.3	-24.2	-28.2	-24.6
Financial account excluding reserve assets	-47.2	-54.7	-41.9	-59.9	-58.7	-27.3	-31.5	-21.5
				Percentage of GDP				
Current account	-0.5	-1.0	-1.5	-2.4	-1.8	-2.5	-2.1	-1.6
Financial account	-2.5	-2.3	-2.0	-3.3	-3.2	-3.7	-2.9	-2.3
Foreign trade				Annual change in percent				
Exports	29.9	17.1	6.1	2.5	4.4	-4.1	-1.7	9.5
Oil	35.2	35.4	-6.2	-6.6	-14.4	-45.5	-18.5	25.5
Non-oil	29.1	14.1	8.5	4.0	7.3	0.8	-0.7	8.7
Manufactures	29.5	13.4	8.4	4.2	7.2	0.8	-1.1	8.5
Other	20.3	30.3	10.1	0.9	8.1	1.3	9.0	12.4
Imports	28.6	16.4	5.7	2.8	4.9	-1.2	-2.1	8.6
Consumer goods	26.2	25.0	4.8	5.6	1.7	-3.5	-7.7	10.4
Intermediate goods	34.5	14.9	5.3	2.5	6.0	-1.6	-0.8	9.0
Capital goods	-1.3	15.8	10.1	1.3	1.5	5.2	-3.8	3.2
Debt liabilities and								
interest paid				Percent of credit in current account				
Total debt liabilities [2]	104.3	102.0	122.3	132.1	136.3	140.8	136.6	129.7
Public sector [3]	48.3	49.0	62.4	66.2	67.6	69.6	66.3	64.1
Private sector	56.0	53.0	59.9	65.9	68.7	71.2	70.4	65.5
Interest paid [4]	3.5	3.6	4.1	4.4	4.5	4.6	4.6	4.5
				Percent of GDP				
Total debt liabilities [2]	34.1	34.5	42.7	44.8	47.1	52.6	55.3	53.7
Public sector [3]	15.8	16.6	21.8	22.4	23.3	26.0	26.8	26.6
Private sector	18.3	17.9	20.9	22.4	23.7	26.6	28.5	27.1
Interest paid	1.1	1.2	1.4	1.5	1.6	1.7	1.9	1.9

1/ This tables' format is different from that displayed in the "Compilation of Quarterly Reports Released in 2016" as on May 25, 2017 Banco de México
   started to publish the Balance of Payments statistics according to the classification criteria of the 6th edition of the Balance of Payments Manual of
   the International Monetary Fund (MBP6).
2/ Excludes liabilities of financial derivatives.
3/ It includes Banco de México.
4/ It includes private and public sectors.
Note: Figures may not add up due to rounding.
Source: Prepared by Banco de México with data from INEGI; SAT, SE, Banco de México, INEGI. Merchandise trade balance of Mexico, SNIEG.
        Information of National Interest, Banco de México and INEGI.

Table A 54
Balance of Payments [1]
USD million

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Current account (I - II)	-16,761	-7,657	-5,023	-12,357	-18,432	-30,869	-23,717	-29,327	-22,828	-18,831
I. Credit (A + B + C + D)	344,601	272,707	345,719	399,244	420,289	432,275	453,523	436,740	434,972	477,493
A. Goods	291,886	229,975	298,860	350,004	371,442	380,729	397,650	380,976	374,296	409,868
Merchandise exports	291,343	229,704	298,473	349,433	370,770	380,015	396,912	380,550	373,939	409,494
Goods procured in ports by carriers	544	271	387	571	672	714	738	426	357	374
B. Services	17,973	15,110	15,489	15,823	16,393	18,094	21,182	22,903	24,597	27,071
Transport	1,767	1,338	1,040	1,037	961	801	867	1,428	1,598	1,903
Travels	13,370	11,513	11,992	11,869	12,739	13,949	16,208	17,734	19,650	21,333
Insurance and pension services	2,010	1,594	1,831	2,262	2,015	2,793	3,554	3,171	2,880	3,300
Financial services	191	192	153	145	135	125	127	138	154	262
Other	634	473	474	510	542	425	426	432	315	275
C. Primary income	9,280	6,081	9,850	10,376	9,815	10,932	10,809	7,825	8,822	11,498
Profits and dividends	1,505	2,027	6,567	6,904	6,779	8,069	7,464	3,511	3,229	4,923
Profits	385	128	3,918	2,831	4,161	5,023	4,717	2,060	2,175	3,826
Dividends	1,121	1,898	2,648	4,074	2,618	3,046	2,747	1,452	1,054	1,097
Interest	6,875	3,280	2,503	2,826	2,262	1,975	2,188	2,862	3,891	4,724
Other	900	774	781	646	774	888	1,157	1,452	1,702	1,851
D. Secondary income	25,462	21,541	21,520	23,040	22,639	22,520	23,882	25,036	27,257	29,056
Remittances	25,145	21,306	21,304	22,803	22,438	22,303	23,647	24,785	26,993	28,771
Other	317	235	216	237	201	217	235	251	263	285
II. Debit (A + B + C + D)	361,362	280,364	350,742	411,600	438,721	463,144	477,240	466,068	457,800	496,324
A. Goods	309,501	234,901	301,803	351,209	371,151	381,638	400,440	395,573	387,369	420,765
Merchandise imports	308,603	234,385	301,482	350,843	370,752	381,210	399,977	395,232	387,065	420,369
Goods procured in ports by carriers	898	516	321	366	399	428	462	341	304	395
B. Services	26,633	25,081	26,892	31,425	31,309	32,150	34,466	32,657	33,549	36,868
Transport	11,865	9,303	10,569	12,139	12,084	12,704	14,676	12,814	13,203	14,855
Travels	8,568	7,207	7,255	7,832	8,449	9,122	9,606	10,098	10,303	10,828
Insurance and pension services	2,732	3,199	2,626	4,086	3,848	4,835	4,220	4,339	4,256	4,479
Financial services	1,491	1,835	1,821	1,801	1,576	1,352	1,436	1,364	1,879	2,115
Other	1,977	3,536	4,622	5,566	5,353	4,137	4,528	4,043	3,908	4,591
C. Primary income	25,099	20,322	21,961	28,788	36,052	48,360	41,224	36,932	36,152	37,731
Profits and dividends	12,249	9,193	9,967	14,313	19,016	29,479	20,737	17,040	15,956	16,133
Profits	9,304	5,339	5,229	10,618	10,287	17,537	16,318	11,630	9,386	9,639
Dividends	2,945	3,854	4,738	3,695	8,729	11,942	4,419	5,410	6,570	6,494
Interest	12,848	11,127	11,993	14,472	17,035	18,880	20,486	19,889	20,190	21,587
Public sector	7,845	6,191	7,032	8,980	11,177	12,731	13,345	13,008	12,843	13,151
Private sector	5,003	4,936	4,960	5,493	5,857	6,149	7,141	6,881	7,347	8,436
Other	2	2	2	3	1	1	1	3	5	11
D. Secondary income	128	60	86	178	209	995	1,111	905	730	961
Remittances	0	0	0	0	0	867	1,002	811	654	761
Other	128	60	86	178	209	128	109	95	77	200
Capital account (I - II)	-361	-1,364	-167	-289	-106	2,303	27	-87	39	150
I. Credit	97	55	48	52	71	2,512	264	207	323	450
II. Debit	458	1,419	216	340	177	209	237	294	284	300
Financial account (I + II + III + IV + V) [Net loans (+) / Net indebtedness (-)]	-26,873	-7,061	-26,559	-26,568	-24,347	-42,117	-42,376	-42,928	-31,601	-26,261
I. Direct investment (A - B)	-28,982	-8,304	-12,947	-11,948	1,167	-33,762	-23,269	-24,190	-28,151	-24,612
A. Net acquisition of financial assets	3,194	11,164	8,039	12,331	18,701	13,458	6,965	12,255	6,596	6,457
Equity participations and participations in investment funds	919	8,745	12,783	8,218	9,934	10,407	8,661	7,845	8,131	7,847
Debt instruments	2,275	2,419	-4,744	4,113	8,767	3,051	-1,696	4,410	-1,535	-1,391
B. Incurred net liabilities	32,176	19,468	20,986	24,280	17,534	47,220	30,234	36,445	34,747	31,069
Equity participations and participations in investment funds	22,300	16,689	21,118	20,151	14,976	39,985	22,323	25,286	20,413	21,068
Debt instruments	9,876	2,779	-132	4,129	2,558	7,235	7,911	11,160	14,334	10,001
II. Portfolio investment (A - B)	-20,276	23,337	-28,575	-46,091	-58,027	-42,717	-48,566	-24,997	-31,224	-7,920
A. Net acquisition of financial assets	-15,076	39,149	9,819	-5,489	17,736	6,849	677	-4,514	-1,553	16,069
Equity participations and participations in investment funds	-1,056	4,916	3,301	1,691	9,817	5,440	219	-4,209	-2,133	9,873
Debt securities	-14,020	34,233	6,518	-7,180	7,919	1,409	458	-305	581	6,196
B. Incurred net liabilities	5,199	15,812	38,394	40,602	75,763	49,566	49,243	20,483	29,671	23,989
Equity participations and participations in investment funds	-3,492	4,155	373	-6,566	5,770	-2,431	4,834	3,601	9,477	10,320
Debt securities	8,691	11,657	38,021	47,168	69,992	51,997	44,410	16,882	20,194	13,668
Banco de México	0	0	0	0	0	0	0	0	0	0
Commercial banks	134	370	208	-134	1,138	1,095	998	4	14	-29
Development banks	0	-400	0	0	0	0	0	1,500	700	222
Non-financial public sector	1,257	9,714	28,096	36,975	56,869	33,156	36,019	15,423	20,724	5,537
Securities issued abroad	-4,696	6,236	4,970	5,326	10,226	11,184	12,956	14,163	22,202	5,846
Government securities issued in Mexico	5,953	3,479	23,126	31,650	46,643	21,973	23,063	1,260	-1,477	-310
Non-bank private sector	-2,509	1,972	9,717	10,327	11,985	17,745	7,393	-45	-1,245	7,939
Pidiregas	9,810	0	0	0	0	0	0	0	0	0
III. Financial derivatives (net transactions)	1,522	-4,268	696	725	-117	772	798	-4,708	-346	3,684
IV Other investment (A - B)	12,784	-22,354	-6,348	2,566	15,105	15,801	12,333	26,634	28,256	7,351
A. Net acquisition of financial assets	17,609	-16,237	9,648	6,451	5,386	17,599	16,607	26,356	24,759	4,710
B. Incurred net liabilities	4,825	6,117	15,996	3,885	-9,719	1,798	4,274	-278	-3,497	-2,641
Deposits	287	2,921	-411	712	-1,360	1,079	-809	-1,592	751	-382
Banco de México	-6	3,118	-3,316	61	-13	-33	-14	-11	-1	-13
Commercial banks	293	-197	2,905	651	-1,346	1,112	-795	-1,581	752	-369
Other	4,537	3,196	16,407	3,173	-8,360	719	5,082	1,314	-4,248	-2,260
Banco de México	0	4,015	-13	15	-13	14	-3	-3	4	-4
Commercial banks	-2,362	-1,142	9,378	3,475	-1,678	2,598	-2,732	7	-2,815	-3,547
Development banks	-496	1,194	648	-283	398	426	870	-651	-155	617
Non-financial private sector	1,265	3,402	8,051	585	-1,830	-2,980	2,263	971	-2,435	1,602
Non-bank private sector	3,087	-4,274	-1,657	-619	-5,236	661	4,684	990	1,154	-927
Pidiregas	3,044	0	0	0	0	0	0	0	0	0
V. Reserve assets	8,078	4,528	20,615	28,180	17,524	17,789	16,329	-15,667	-136	-4,765
Total change of gross international reserves	8,091	4,591	20,695	28,621	17,841	13,150	15,482	-18,085	428	-2,575
Valuation adjustments	12	63	79	441	317	-4,639	-847	-2,418	564	2,190
Errors and omissions	-9,751	1,960	-21,368	-13,923	-5,808	-13,551	-18,686	-13,513	-8,812	-7,580

1/ This tables' format is different from that displayed in the "Compilation of Quarterly Reports Released in 2016" as on May 25, 2017 Banco de México started to publish the Balance of Payments statistics according to the classification criteria of the 6th edition of the Balance of Payments Manual of the International Monetary Fund (MBP6).
Note: Figures may not add up due to rounding.
Source: Banco de México.

Table A 55
Balance of Payments [1/]
USD million

	2016	2017				
	Annual	Q1	Q2	Q3	Q4	Annual
Current account	**-22,828**	**-10,203**	**-249**	**-5,173**	**-3,207**	**-18,831**
Capital account	**39**	**-26**	**-11**	**-18**	**205**	**150**
Financial account	**-31,601**	**605**	**-3,878**	**-10,374**	**-12,614**	**-26,261**
Foreign direct investment	**-28,151**	**-10,315**	**-3,040**	**-8,819**	**-2,438**	**-24,612**
Net acquisition of financial assets	6,596	2,698	3,351	-2,635	3,043	6,457
Net liabilities incurred	34,747	13,013	6,391	6,183	5,481	31,069
Portfolio investment	**-31,224**	**-5,610**	**2,258**	**-2,151**	**-2,417**	**-7,920**
Net acquisition of financial assets	-1,553	5,430	2,118	6,571	1,949	16,069
Net liabilities incurred	29,671	11,040	-140	8,722	4,366	23,989
Financial derivatives	**-346**	**628**	**1,513**	**2,138**	**-595**	**3,684**
Other investment	**28,256**	**15,774**	**-624**	**-349**	**-7,449**	**7,351**
Net acquisition of financial assets	24,759	14,525	1,503	-2,802	-8,517	4,710
Net liabilities incurred	-3,497	-1,249	2,127	-2,453	-1,067	-2,641
Reserve assets	**-136**	**128**	**-3,986**	**-1,193**	**286**	**-4,765**
Total change of gross international reserves	428	679	-3,308	-507	561	-2,575
Valuation adjustments	564	551	678	686	275	2,190
Errors and omissions	**-8,812**	**10,834**	**-3,618**	**-5,184**	**-9,612**	**-7,580**
Memo: Financial account excluding reserve assets	**-31,466**	**478**	**107**	**-9,181**	**-12,900**	**-21,496**

1/ This tables' format is different from that displayed in the "Compilation of Quarterly Reports Released in 2016" as on May 25, 2017 Banco de México started
   to publish the Balance of Payments statistics according to the classification criteria of the 6th edition of the Balance of Payments Manual of the International
   Monetary Fund (MBP6).
Note: Figures may not add up due to rounding.
Source: Banco de México.

Table A 56
Current Account [1/]
USD million

	2016	2017				
	Annual	Q1	Q2	Q3	Q4	Annual
Current account	**-22,828**	**-10,203**	**-249**	**-5,173**	**-3,207**	**-18,831**
Balance of goods and services	**-22,025**	**-4,878**	**-2,377**	**-9,556**	**-3,882**	**-20,693**
Balance of goods	**-13,073**	**-2,744**	**-133**	**-6,170**	**-1,851**	**-10,897**
Balance of oil goods	-12,748	-4,376	-3,824	-5,115	-5,087	-18,402
Balance of non-oil goods	-377	1,601	3,689	-1,027	3,264	7,527
Balance of goods procured in ports	52	31	2	-28	-27	-22
Balance of services	**-8,952**	**-2,134**	**-2,244**	**-3,387**	**-2,031**	**-9,796**
Balance of travels	9,347	3,524	2,768	1,980	2,233	10,504
Balance of other services	-18,299	-5,658	-5,012	-5,367	-4,264	-20,301
Balance of primary income	**-27,330**	**-11,815**	**-5,065**	**-2,767**	**-6,587**	**-26,233**
Balance of interest	-16,299	-3,097	-5,133	-3,713	-4,919	-16,863
Balance of profits and dividends	-12,727	-9,099	-385	452	-2,178	-11,210
Balance of other items	1,697	381	453	494	511	1,839
Balance of secondary income	**26,527**	**6,490**	**7,193**	**7,150**	**7,262**	**28,095**
Balance of remittances	26,340	6,482	7,143	7,082	7,304	28,010
Balance of other items	187	8	50	69	-42	85

1/ This tables' format is different from that displayed in the "Compilation of Quarterly Reports Released in 2016" as on May 25, 2017 Banco de México started to
   publish the Balance of Payments statistics according to the classification criteria of the 6th edition of the Balance of Payments Manual of the International
   Monetary Fund (MBP6).
Note: Figures may not add up due to rounding.
Source: Banco de México.

Table A 57
Foreign Trade
USD million

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 [p/]
Exports	271,875.3	291,342.6	229,703.6	298,473.1	349,433.4	370,769.9	380,015.1	396,911.7	380,549.8	373,939.2	409,494.2
Oil	43,013.8	50,635.4	30,831.3	41,693.3	56,443.4	52,955.5	49,481.5	42,369.4	23,099.7	18,817.6	23,608.4
Crude oil [1/]	37,937.2	43,341.5	25,614.0	35,918.5	49,380.6	46,852.4	42,711.7	35,638.5	18,451.2	15,574.8	19,930.5
Other	5,076.7	7,293.8	5,217.2	5,774.8	7,062.8	6,103.2	6,769.8	6,730.9	4,648.5	3,242.8	3,677.9
Non-oil	228,861.5	240,707.2	198,872.3	256,779.9	292,990.0	317,814.3	330,533.6	354,542.3	357,450.1	355,121.6	385,885.8
Agricultural products	7,415.0	7,894.6	7,725.9	8,610.4	10,309.5	10,914.2	11,245.8	12,181.3	12,970.6	14,672.3	15,973.6
Mining	1,737.1	1,931.0	1,447.9	2,424.0	4,063.5	4,906.5	4,714.4	5,064.0	4,504.5	4,368.3	5,427.0
Manufactures	219,709.4	230,881.6	189,698.5	245,745.4	278,617.1	301,993.6	314,573.4	337,297.0	339,974.9	336,081.0	364,485.1
Imports	281,949.0	308,603.3	234,385.0	301,481.8	350,842.9	370,751.6	381,210.2	399,977.2	395,232.4	387,064.5	420,369.2
Oil	25,469.2	35,656.9	20,462.5	30,211.2	42,704.1	41,138.5	40,867.8	41,489.7	33,287.7	31,565.7	42,010.1
Non-oil	256,479.9	272,946.3	213,922.5	271,270.7	308,138.8	329,613.1	340,342.3	358,487.5	361,944.7	355,498.8	378,359.0
Consumer goods	43,054.5	47,940.7	32,828.1	41,422.7	51,790.2	54,272.4	57,329.4	58,299.1	56,279.4	51,950.3	57,333.0
Oil	10,931.9	15,805.1	8,929.7	12,820.3	18,964.6	18,668.8	16,931.9	15,756.8	13,058.8	11,576.7	15,026.3
Non-oil	32,122.6	32,135.6	23,898.4	28,602.4	32,825.7	35,603.6	40,397.5	42,542.4	43,220.5	40,373.6	42,306.7
Intermediate goods	205,295.5	221,565.4	170,911.7	229,812.4	264,020.2	277,911.1	284,823.4	302,031.2	297,253.4	294,994.4	321,621.7
Oil	14,537.3	19,851.8	11,532.8	17,390.8	23,739.5	22,469.7	23,935.9	25,732.9	20,228.8	19,989.0	26,983.8
Non-oil	190,758.2	201,713.6	159,378.9	212,421.6	240,280.7	255,441.4	260,887.5	276,298.3	277,024.5	275,005.4	294,637.9
Capital goods	33,599.0	39,097.1	30,645.2	30,246.7	35,032.4	38,568.1	39,057.4	39,646.8	41,699.7	40,119.8	41,414.4
Trade balance	-10,073.7	-17,260.7	-4,681.4	-3,008.7	-1,409.5	18.3	-1,195.1	-3,065.5	-14,682.6	-13,125.3	-10,875.0
Oil trade balance	17,544.6	14,978.4	10,368.8	11,482.1	13,739.3	11,817.0	8,613.6	879.7	-10,188.0	-12,748.1	-18,401.7
Non-oil trade balance	-27,618.4	-32,239.1	-15,050.2	-14,490.8	-15,148.8	-11,798.7	-9,808.8	-3,945.3	-4,494.6	-377.2	7,526.8

1/ Data provided by PMI Internacional, S.A. de C.V. (operation figures).
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: SAT, SE; Banco de México, INEGI. Merchandise trade balance of Mexico. SNIEG. Information of National Interest.

Table A 58
Exports by Economic Sector
USD million

Item	2010	2011	2012	2013	2014	2015	2016	2017 p/
T o t a l	**298,473.1**	**349,433.4**	**370,769.9**	**380,015.1**	**396,911.7**	**380,549.8**	**373,939.2**	**409,494.2**
I. Agriculture and forestry	7,325.5	8,652.9	9,225.7	9,764.9	10,345.5	11,046.2	13,049.7	14,170.1
II. Livestock, apiculture and fishing	1,284.9	1,656.6	1,688.5	1,480.9	1,835.8	1,924.4	1,622.6	1,803.5
III. Mining	44,117.3	60,506.8	57,862.0	54,195.9	47,433.4	27,604.2	23,185.9	29,035.4
Crude oil 1/	35,918.5	49,380.6	46,852.4	42,711.7	35,638.5	18,451.2	15,574.8	19,930.5
Other	8,198.8	11,126.2	11,009.6	11,484.2	11,794.9	9,153.0	7,611.1	9,104.9
IV. Manufacturing	245,745.4	278,617.1	301,993.6	314,573.4	337,297.0	339,974.9	336,081.0	364,485.1
A. Food, beverages and tobacco	9,552.1	11,528.9	11,697.4	12,902.4	13,202.2	13,514.4	14,069.1	16,399.6
B. Textile, apparel and leather products	7,151.0	7,856.4	8,036.5	8,305.3	8,468.5	8,251.6	7,718.0	7,707.6
C. Timber industry	492.9	530.6	583.7	727.9	721.0	783.2	807.0	909.1
D. Paper, printing and publishing	1,959.7	2,119.1	1,962.8	1,884.4	1,971.0	1,958.8	1,876.5	2,038.8
E. Chemical industry	8,521.5	9,910.2	10,945.6	11,103.1	10,909.9	10,299.3	9,497.3	9,688.3
F. Plastic and rubber products	6,870.4	8,094.6	9,265.3	9,770.3	10,433.4	10,307.0	10,130.2	10,728.6
G. Non-metal mineral products	2,951.6	3,094.9	3,407.7	3,657.7	3,790.2	3,819.8	3,748.5	3,718.5
H. Iron and steel	6,542.5	7,913.0	7,743.6	8,446.3	8,549.0	6,813.7	6,132.6	7,124.4
I. Mining and metallurgy	12,333.8	17,397.8	17,020.4	12,982.2	11,275.8	10,084.5	11,360.4	10,886.9
J. Metal products, machinery and equipment	182,696.7	202,353.1	222,030.5	234,643.7	256,325.3	261,293.1	257,835.9	281,781.1
1. For agriculture and stockbreeding	558.5	691.2	807.8	910.5	868.4	788.7	664.8	681.8
2. For other transport and communications	66,489.4	81,655.5	91,566.9	101,673.4	114,788.3	119,667.3	117,923.9	130,672.8
Automobile industry	64,947.9	79,176.5	88,377.2	97,780.9	109,395.1	114,493.4	113,316.0	126,670.9
3. Special machinery and equipment for different indust	33,560.7	38,514.2	43,732.0	43,078.9	48,676.6	47,028.7	49,370.5	53,788.6
4. Metal products (domestic use)	4,715.6	5,152.9	5,252.7	5,639.8	5,774.5	6,070.0	6,044.2	6,264.0
5. Professional and scientific equipment	9,808.2	10,602.0	11,459.6	12,528.4	14,102.4	14,902.7	15,914.9	17,083.6
6. Electric and electronic equipment	67,089.2	65,325.9	68,818.0	70,415.0	71,710.1	72,428.9	67,467.5	72,786.6
7. Photographic and optical equipment, watchmaking	475.2	411.4	393.4	397.6	404.9	406.9	450.7	503.7
K. Other industries	6,673.2	7,818.6	9,300.4	10,150.3	11,650.8	12,849.6	12,905.6	13,502.4

1/ Data provided by PMI Internacional, S.A. de C.V. (operation figures).
p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: SAT, SE; Banco de México, INEGI. Merchandise trade balance of Mexico. SNIEG. Information of National Interest.

Table A 59
Imports by Economic Sector
USD million

Item	2010	2011	2012	2013	2014	2015	2016	2017 p/
T O T A L	**301,481.8**	**350,842.9**	**370,751.6**	**381,210.2**	**399,977.2**	**395,232.4**	**387,064.5**	**420,369.2**
I. Agriculture and forestry	9,416.7	12,632.3	12,695.6	11,704.4	11,578.6	10,629.0	10,804.9	11,524.0
II. Livestock, apiculture and fishing	428.4	508.7	535.8	647.6	797.1	612.0	663.3	754.1
III. Mining industries	31,414.9	44,355.3	42,751.6	42,239.0	42,770.4	34,345.0	32,667.2	43,327.7
IV. Manufacturing	260,221.8	293,346.6	314,768.6	326,619.2	344,831.1	349,646.5	342,929.1	364,763.3
A. Food, beverages and tobacco	11,231.0	13,333.7	13,912.4	14,357.7	15,075.0	13,842.9	13,658.0	14,206.1
B. Textile, apparel and leather products	9,336.7	10,979.2	11,642.8	12,246.2	13,167.5	13,480.1	13,106.9	13,016.4
C. Timber industry	1,308.2	1,424.2	1,541.4	1,622.0	1,725.8	1,844.7	1,751.6	1,774.9
D. Paper, printing and publishing	6,612.3	6,898.9	6,885.4	7,048.6	7,273.9	7,194.6	6,913.8	7,303.9
E. Chemical industry	19,507.8	22,004.1	23,508.4	24,477.1	25,854.4	24,415.2	22,984.1	24,721.0
F. Plastic and rubber products	18,375.3	19,891.8	22,072.8	22,719.3	24,298.0	24,635.4	24,162.1	25,971.3
G. Non-metal mineral products	2,174.0	2,547.8	2,686.7	2,676.2	3,034.0	3,033.6	3,009.3	3,257.1
H. Iron and steel	13,356.4	15,252.5	18,037.3	16,810.6	18,072.2	17,994.7	16,574.9	18,784.2
I. Mining and metallurgy	8,198.3	10,191.0	9,513.3	8,896.0	9,539.7	9,464.4	8,982.0	10,063.2
J. Metal products, machinery and equipment	158,232.0	176,808.0	191,131.1	200,774.0	209,212.8	215,114.2	212,411.9	223,084.0
1. For agriculture and stockbreeding	785.9	927.7	989.0	963.2	957.3	1,020.7	968.8	979.8
2. For other transport and communications	34,599.9	41,222.3	46,902.6	48,259.9	52,187.2	53,847.1	53,031.9	58,390.3
Automobile industry	33,283.6	38,890.7	44,143.9	45,883.7	49,136.2	50,849.9	50,418.2	55,905.0
3. Special machinery and equipmment for different industries	41,281.1	46,948.0	53,268.0	55,324.9	57,753.3	59,757.2	59,974.9	62,637.1
4. Metal products (domestic use)	1,007.8	1,223.4	1,221.5	1,315.2	1,367.9	1,448.5	1,435.8	1,438.4
5. Professional and scientific equipment	9,794.7	10,789.0	11,328.3	12,034.5	12,772.1	14,638.1	14,098.4	14,743.6
6. Electric and electronic equipment	70,070.5	74,931.6	76,625.3	82,124.7	83,409.0	83,657.7	82,158.8	84,150.6
7. Photographic and optical equipment, watchmaking	692.1	766.2	796.3	751.7	766.1	745.0	743.3	744.2
K. Other industries	11,889.7	14,015.2	13,836.9	14,991.4	17,577.8	18,626.7	19,374.5	22,581.4

p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: SAT, SE; Banco de México, INEGI. Merchandise trade balance of Mexico. SNIEG. Information of National Interest.

Table A 60
Foreign Trade by Country
USD million

	Exports					Imports			
	2014	2015	2016	2017	2018 p/	2014	2015	2016	2017
Total	**396,912**	**380,550**	**373,939**	**409,494**		**399,977**	**395,232**	**387,065**	**420,369**
America	354,756	342,030	332,952	360,283		220,846	209,666	201,814	217,980
North America	329,080	319,409	313,008	338,357		205,323	196,750	189,139	204,331
U.S.	318,366	308,865	302,576	326,976		195,278	186,802	179,507	194,543
Canada	10,714	10,545	10,432	11,380		10,045	9,948	9,632	9,788
Central America	5,865	6,085	5,764	6,013		4,320	2,240	2,134	1,931
Costa Rica	996	964	915	959		2,542	550	391	375
El Salvador	605	637	597	689		127	136	115	150
Guatemala	1,790	1,818	1,714	1,723		490	461	488	528
Panama	989	1,042	899	915		20	121	51	110
Other countries of Central America	1,485	1,624	1,640	1,726		1,141	971	1,090	768
South America	17,828	14,750	12,174	13,918		9,778	9,600	9,492	10,762
Argentina	1,302	1,497	1,409	1,504		1,050	1,057	897	823
Brazil	4,740	3,799	3,056	3,681		4,473	4,622	4,733	5,440
Colombia	4,734	3,668	3,067	3,164		935	923	1,098	1,674
Chile	2,148	1,861	1,745	1,804		1,398	1,480	1,335	1,537
Peru	1,730	1,651	1,404	1,511		1,106	681	556	514
Venezuela	1,552	1,222	600	1,080		72	131	174	118
Other countries of South America	1,622	1,052	894	1,174		745	706	699	657
Antilles	1,984	1,786	2,006	1,996		1,425	1,077	1,049	956
Europe	22,391	20,517	20,571	24,528		49,210	48,085	46,596	53,443
European Union	20,211	18,250	19,360	23,211		44,595	43,744	42,459	49,007
Germany	3,558	3,509	3,951	6,952		13,762	13,975	13,878	16,421
Belgium	1,700	1,594	1,467	2,099		942	1,074	1,089	1,183
Denmark	147	174	183	180		543	483	664	602
Spain	5,788	3,295	3,268	4,245		4,753	4,554	4,456	5,006
France	1,594	2,145	2,017	1,911		3,786	3,727	3,729	4,071
Netherlands	2,271	1,835	1,637	1,988		3,688	3,253	2,025	2,391
Italy	1,626	1,673	1,600	1,325		5,217	5,062	5,291	6,161
Portugal	45	166	167	167		554	425	422	607
United Kingdom	1,806	1,968	3,232	2,275		2,513	2,345	2,128	2,427
Other countries of European Union	1,679	1,891	1,839	2,071		8,836	8,847	8,777	10,138
Other European countries	2,180	2,267	1,211	1,316		4,615	4,341	4,136	4,437
Asia	17,669	16,015	18,530	22,576		127,626	135,532	136,781	146,843
China	5,964	4,873	5,411	6,713		66,256	69,988	69,521	74,145
North Korea	1	0	1	1		10	14	7	6
South Korea	2,027	2,816	2,507	3,429		13,772	14,619	13,612	15,756
Philippines	128	83	86	163		1,936	1,993	2,234	2,362
Hong Kong	1,029	767	592	724		290	254	288	332
India	2,666	1,772	2,120	3,339		3,727	4,067	4,286	5,021
Indonesia	116	88	65	261		1,348	1,327	1,319	1,496
Israel	136	147	198	230		641	695	707	713
Japan	2,609	3,018	3,779	4,056		17,545	17,368	17,751	18,185
Malaysia	195	122	448	711		6,561	7,463	8,161	7,887
Singapore	529	523	851	905		1,200	1,328	1,279	1,406
Thailand	361	323	497	560		4,354	4,958	5,427	5,934
Taiwan	392	270	246	425		6,368	6,630	6,837	7,441
Other Asian countries	1,516	1,213	1,729	1,060		3,620	4,827	5,352	6,160
Africa	890	747	858	661		1,363	980	955	1,346
Oceania	1,116	1,166	936	1,311		913	957	912	738
Australia	1,009	1,050	836	1,190		554	599	527	344
New Zealand	99	106	94	113		349	349	364	358
Other countries of Oceania	7	10	6	8		11	9	21	36
Not identified	89	76	94	136		20	13	7	19

p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: SAT, SE; Banco de México, INEGI. Merchandise trade balance of Mexico. SNIEG. Information of National Interest.

Table A 61
Main Trade Goods

	Exports					Imports			
	2014	2015	2016	2017 [p]		2014	2015	2016	2017 [p]
Total (USD million)	396,912	380,550	373,939	409,494	**Total (USD million)**	399,977	395,232	387,064	420,369
		Percent of total					Percent of total		
Automobiles	8.2	8.6	8.4	10.2	Automobile spare parts	5.7	5.9	5.9	6.0
Automobile spare parts	5.7	6.6	7.0	6.6	Electronic microcircuits	3.5	3.7	3.9	3.9
Trucks and cargo vehicles	5.4	5.7	6.3	6.0	Gasoline	3.8	3.3	2.9	3.5
Computers	5.2	4.8	5.5	5.7	Telephone electric parts	3.4	3.7	3.8	3.2
Crude oil 1/	9.0	4.8	4.2	4.9	Automobiles	2.1	2.4	2.6	2.7
Telephone electric devices	4.0	4.2	4.4	4.8	Computers	2.2	2.4	2.6	2.2
TV sets	4.3	4.4	3.6	3.2	Gasoline	1.5	1.1	1.0	1.6
Insulating cables for electric installations	2.8	3.0	3.0	2.7	Devices to cut or connect electric circuits	1.5	1.5	1.5	1.4
Medical and veterinarian equipment	1.5	1.7	1.8	1.7	Computer spare parts	1.4	1.4	1.5	1.4
Tractors	2.0	2.3	1.5	1.6	Insulating cables for electric installations	1.4	1.4	1.4	1.2
Seats and their parts	1.6	1.6	1.7	1.6	Natural gas	0.8	0.7	0.8	1.2
Refrigerators	1.1	1.2	1.3	1.2	Plastic parts for furniture, automob., apparel etc	1.0	1.1	1.1	1.1
Gold (crude, worked and ground)	1.2	1.1	1.3	1.1	Diesel engines	1.1	1.2	1.0	1.1
Engine parts	1.0	1.1	1.1	1.0	Spare parts for recorders and television transmitters	2.4	1.5	1.4	1.0
Malt beer	0.6	0.7	0.8	0.9	Engines spare parts	0.9	0.9	0.9	0.9
Electric engines and generators	0.7	0.8	0.8	0.9	Spare parts for sound reprod. and recording devices	0.8	0.9	0.9	0.9
Gasoline engines	0.9	0.9	1.1	0.9	Liquid crystal displays	0.8	1.2	1.0	0.9
Devices to cut or connect electric circuits	0.8	0.9	0.9	0.9	Electric transformers	0.8	0.9	0.9	0.9
Air-conditioning machines and devices	0.7	0.8	0.8	0.8	Plumbing articles	0.8	0.8	0.8	0.8
Avocado	0.4	0.4	0.6	0.7	Air and vacuum parts	0.9	0.8	0.9	0.8
Electric transformers	0.7	0.7	0.7	0.7	Propeller shafts, bearings and gear assemblies	0.7	0.8	0.8	0.8
Lighting fitting	0.5	0.5	0.6	0.6	Semiconductor devices	0.8	0.8	0.8	0.8
Plumbing articles	0.6	0.6	0.6	0.6	New rubber tiers	0.8	0.8	0.7	0.7
Automatic regulating instruments	0.6	0.6	0.6	0.6	Electric engines and generators	0.4	0.5	0.5	0.7
Centrifuges, filters and purifiers	0.6	0.6	0.6	0.6	Corn	0.6	0.6	0.7	0.7
Lamps and illuminated signs	0.5	0.5	0.6	0.6	Medical and veterinarian devices	0.6	0.7	0.7	0.7
Fresh or refrigerated vegetables	0.4	0.5	0.6	0.6	Iron and steel bars and hooks	0.7	0.7	0.7	0.7
Electronic microcircuits	0.4	0.5	0.5	0.5	Iron and steel screws and bolts	0.6	0.7	0.6	0.7
Freight transport	0.7	0.8	0.7	0.5	TV sets	0.8	1.0	0.7	0.6
Electric machinery and devices	0.5	0.5	0.5	0.5	Gas turbines	0.5	0.5	0.6	0.6
Microphones and their support bases	0.5	0.5	0.5	0.5	Plastic containers	0.6	0.6	0.7	0.6
Plastic containers	0.5	0.5	0.5	0.5	Medicine for retail sales	0.7	0.7	0.6	0.6
Silver (crude, worked and ground)	0.6	0.5	0.5	0.5	Gasoline engines	0.5	0.5	0.6	0.6
Liquids pumps	0.5	0.5	0.5	0.5	Centrifuges, filters and purifiers	0.5	0.6	0.5	0.6
Plastic parts for furniture, automob., apparel etc.	0.4	0.5	0.5	0.5	Liquids pumps	0.5	0.6	0.6	0.5
Fresh and refrigerated tomato	0.5	0.5	0.6	0.5	Printed circuit board assembly	0.5	0.5	0.6	0.5
Copper ore and concentrates	0.3	0.3	0.4	0.5	Freight transport	0.5	0.5	0.6	0.5
Diesel engines	0.5	0.4	0.4	0.5	Seats and their parts	0.5	0.5	0.5	0.5
Radios	0.4	0.4	0.4	0.4	Polyester, epoxy resins	0.4	0.5	0.5	0.5
Suits and pants for men and kids	0.4	0.4	0.4	0.3	Plastic plates without reinforcement	0.4	0.5	0.5	0.5
Other	33.1	33.7	33.3	32.2	Other	51.1	50.6	50.7	50.8

1/ Data provided by PMI Internacional, S.A. de C.V. (operation figures). Subject to revisions.
p/ Preliminary figures.
Source: SAT, SE; Banco de México, INEGI. Merchandise trade balance of Mexico. SNIEG. Information of National Interest.

Table A 62
International Travelers

Item	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017 p/
Balance (USD millions)	**3,837**	**4,203**	**4,068**	**4,457**	**4,802**	**4,305**	**4,737**	**4,037**	**4,291**	**4,827**	**6,603**	**7,636**	**9,347**	**10,504**
						Incoming								
Revenues (USD million)	**10,796**	**11,803**	**12,177**	**12,919**	**13,370**	**11,513**	**11,992**	**11,869**	**12,739**	**13,949**	**16,208**	**17,734**	**19,650**	**21,333**
Tourists	7,783	8,502	8,955	9,737	10,152	8,827	9,443	9,448	10,199	11,312	13,580	15,035	16,926	18,202
In border areas	2,591	2,848	2,764	2,684	2,734	2,232	2,020	1,942	2,100	2,279	2,210	2,300	2,330	2,655
With overnight stay	599	644	605	630	708	604	548	558	568	542	740	791	772	980
Without overnight stay	1,993	2,204	2,159	2,054	2,026	1,628	1,472	1,384	1,533	1,737	1,470	1,509	1,558	1,675
On cruises	421	453	458	498	483	454	529	479	440	358	419	399	394	476
Number of travelers (thousands)	**99,250**	**103,146**	**97,701**	**93,582**	**92,948**	**88,044**	**81,953**	**75,732**	**76,749**	**78,100**	**81,042**	**87,129**	**94,853**	**99,594**
Tourists	11,553	12,534	12,608	13,041	13,425	12,501	13,327	13,237	13,665	14,562	16,000	18,307	20,664	22,489
In border areas	81,204	83,905	78,577	73,599	73,031	69,842	62,578	57,205	57,885	58,983	59,257	62,707	67,495	69,186
With overnight stay	9,065	9,381	8,745	8,565	9,505	9,845	9,962	10,166	9,738	9,589	13,346	13,786	14,416	16,808
Without overnight stay	72,139	74,524	69,832	65,034	63,526	59,997	52,615	47,039	48,148	49,394	45,911	48,920	53,079	52,378
On cruises	6,493	6,707	6,516	6,943	6,491	5,701	6,048	5,289	5,199	4,555	5,785	6,115	6,695	7,919
Average spending (USD)	**108.8**	**114.4**	**124.6**	**138.1**	**143.8**	**130.8**	**146.3**	**156.7**	**166.0**	**178.6**	**200.0**	**203.5**	**207.2**	**214.2**
Tourists	673.7	678.4	710.3	746.7	756.2	706.1	708.5	713.8	746.3	776.8	848.8	821.3	819.1	809.4
In border areas	31.9	33.9	35.2	36.5	37.4	32.0	32.3	33.9	36.3	38.6	37.3	36.7	34.5	38.4
With overnight stay	66.1	68.6	69.2	73.5	74.5	61.3	55.0	54.9	58.3	56.5	55.5	57.4	53.6	58.3
Without overnight stay	27.6	29.6	30.9	31.6	31.9	27.1	28.0	29.4	31.8	35.2	32.0	30.8	29.4	32.0
On cruises	64.8	67.5	70.3	71.8	74.4	79.6	87.4	90.5	84.7	78.6	72.4	65.3	58.8	60.1
						Outgoing								
Expenditures (USD million)	**6,959**	**7,600**	**8,108**	**8,462**	**8,568**	**7,207**	**7,255**	**7,832**	**8,449**	**9,122**	**9,606**	**10,098**	**10,303**	**10,828**
Tourists	2,911	3,314	3,805	4,373	4,566	4,058	4,187	4,693	5,223	5,777	6,153	6,470	6,589	6,948
In border areas	4,048	4,287	4,303	4,089	4,001	3,149	3,067	3,139	3,226	3,346	3,452	3,628	3,714	3,880
With overnight stay	316	340	388	421	380	339	353	321	326	248	457	556	566	543
Without overnight stay	3,732	3,947	3,915	3,668	3,622	2,811	2,715	2,818	2,900	3,097	2,995	3,072	3,147	3,337
Number of travelers (thousands)	**128,903**	**128,392**	**122,022**	**109,540**	**107,519**	**98,228**	**91,658**	**88,113**	**87,332**	**90,777**	**90,982**	**94,988**	**97,372**	**94,233**
Tourists	7,398	8,000	8,486	9,387	9,397	9,037	9,331	10,200	11,209	11,694	11,242	11,275	11,545	11,257
In border areas	121,505	120,392	113,536	100,153	98,122	89,191	82,326	77,913	76,124	79,083	79,739	83,713	85,826	82,976
With overnight stay	5,096	5,305	5,516	5,870	5,129	5,067	5,003	4,599	4,372	4,217	7,018	8,328	8,678	7,768
Without overnight stay	116,409	115,087	108,020	94,283	92,992	84,124	77,323	73,314	71,752	74,866	72,721	75,385	77,149	75,208
Average spending (USD)	**54.0**	**59.2**	**66.4**	**77.2**	**79.7**	**73.4**	**79.2**	**88.9**	**96.7**	**100.5**	**105.6**	**106.3**	**105.8**	**114.9**
Tourists	393.5	414.2	448.4	465.8	485.9	449.0	448.8	460.1	466.0	494.0	547.3	573.9	570.7	617.2
In border areas	33.3	35.6	37.9	40.8	40.8	35.3	37.3	40.3	42.4	42.3	43.3	43.3	43.3	46.8
With overnight stay	62.1	64.0	70.3	71.8	74.0	66.9	70.5	69.9	74.5	58.9	65.2	66.8	65.3	69.9
Without overnight stay	32.1	34.3	36.2	38.9	38.9	33.4	35.1	38.4	40.4	41.4	41.2	40.7	40.8	44.4

p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Banco de México.

Table A 63
Revenues from Workers' Remittances

	2012	2013	2014	2015	2016	2017 p/
Total remittances (USD million)	**22,438**	**22,303**	**23,647**	**24,785**	**26,993**	**28,771**
Money Orders	195	218	267	162	159	162
Electronic transfers	21,858	21,749	22,914	24,146	26,378	28,054
Cash and kind	386	335	466	477	456	556
Number of remittances (thousands)	**71,611**	**76,752**	**80,529**	**84,719**	**91,557**	**93,422**
Money Orders	393	422	525	303	279	270
Electronic transfers	70,351	75,498	78,870	83,146	90,061	91,754
Cash and kind	867	833	1,133	1,269	1,217	1,397
Average remittances (USD)	**313**	**291**	**294**	**293**	**295**	**308**
Money Orders	495	517	509	534	571	599
Electronic transfers	311	288	291	290	293	306
Cash and kind	445	402	411	376	374	398

p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Banco de México.

Table A 64
Revenues from Workers' Remittances
Distribution by state and international comparison

Distribution by state and international comparison

State	By state										International comparison: selected countries in 2016		
	Ranking					Percentage structure					Country	USD million	As a percentage of GDP
	2005	2007	2013	2016	2017 p/	2005	2007	2013	2016	2017 p/			
											India	59,084	2.6
Michoacán	1	1	1	1	1	11.26	9.35	9.19	10.17	10.15	Mexico		
Jalisco	4	4	3	2	2	7.82	7.66	7.87	9.34	9.73	2017	28,771	2.5
Guanajuato	2	2	2	3	3	8.78	9.17	9.00	8.94	8.89	2016	26,993	2.5
Estado de México	3	3	4	4	4	8.14	8.32	6.43	5.95	5.83	2015	24,785	2.1
Puebla	7	6	6	5	5	5.45	6.21	5.98	5.41	5.42	2014	23,647	1.8
Oaxaca	9	7	8	6	6	4.98	5.82	5.16	5.26	5.10			
Guerrero	8	8	7	8	7	5.42	5.72	5.40	5.08	4.95	Philippines	23,627	7.7
Distrito Federal	6	10	5	7	8	6.05	4.06	6.25	5.22	4.57	Pakistan	19,687	7.1
Veracruz	5	5	9	9	9	6.33	6.81	4.61	4.16	4.15	Nigeria	19,445	4.8
San Luis Potosí	12	12	11	10	10	2.59	2.99	3.17	3.56	3.62	Egypt	16,590	5.0
Zacatecas	13	13	12	11	11	2.49	2.64	2.84	3.25	3.29	Bangladesh	13,519	5.9
Nuevo León	23	24	15	15	12	1.31	1.26	2.68	2.43	2.87	Indonesia	8,672	0.9
Hidalgo	10	9	13	12	13	3.76	4.19	2.83	2.83	2.73	China	8,342	0.1
Chihuahua	18	18	16	13	14	1.79	1.77	2.33	2.61	2.66	Guatemala	7,377	10.9
Baja California	24	22	14	14	15	1.18	1.28	2.78	2.59	2.62	Sri Lanka	7,242	9.0
Sinaloa	15	15	18	17	16	2.08	2.01	2.26	2.31	2.40	Morocco	7,088	6.8
Tamaulipas	16	16	10	16	17	1.96	1.98	3.18	2.42	2.39	Lebanon	6,930	13.7
Durango	19	19	20	18	18	1.77	1.74	2.06	2.24	2.33	Nepal	6,367	30.1
Chiapas	11	11	19	20	19	3.53	3.53	2.25	2.14	2.15	The Republic of Korea	5,700	0.4
Morelos	14	14	17	19	20	2.33	2.44	2.31	2.15	2.14	Dominican Republic	5,261	7.3
Querétaro	17	17	21	21	21	1.87	1.82	1.85	1.95	1.97	Colombia	4,858	1.7
Nayarit	21	20	24	22	22	1.40	1.44	1.44	1.62	1.64	El Salvador	4,576	17.1
Coahuila	25	26	23	23	23	1.11	1.13	1.47	1.56	1.63	Thailand	4,040	1.0
Sonora	22	23	22	24	24	1.36	1.28	1.53	1.53	1.50	Jordan	4,004	10.3
Aguascalientes	20	21	25	25	25	1.49	1.43	1.37	1.47	1.42	Honduras	3,847	18.0
Colima	27	27	27	26	26	0.76	0.77	0.82	0.93	0.99	Japan	3,660	0.1
Tlaxcala	26	25	26	27	27	1.02	1.16	0.97	0.86	0.83	Poland	3,337	0.7
Yucatán	29	29	28	29	28	0.43	0.52	0.56	0.53	0.54	Russia	3,030	0.2
Tabasco	28	28	29	28	29	0.72	0.70	0.53	0.57	0.54	Ghana	2,980	7.0
Quintana Roo	30	30	30	30	30	0.39	0.38	0.45	0.48	0.49	Serbia	2,977	7.9
Campeche	31	31	31	31	31	0.30	0.31	0.25	0.24	0.25	Peru	2,884	1.5
Baja California Sur	32	32	32	32	32	0.11	0.12	0.21	0.21	0.22	The United Kingdom	2,725	0.1
Total						100.00	100.00	100.00	100.00	100.00			

p/ Preliminary figures.
Note: Figures may not add up due to rounding.
Source: Prepared with data from IMF Balance of Payments Division. In the case of Mexico the source is Banco de México.

Table A 65
Foreign Investment in Government Securities
Current stocks at market price at the end of the period
USD billion

		Cetes		Bonds		Udibonos		Other [1]		Total	
		Stock	%	Stock	%	Stock	%	Stock	%	Stock	%
2009		0.9	3.5	23.0	92.2	1.0	4.1	0.0	0.2	24.9	100.0
2010		8.0	15.5	40.9	78.7	2.2	4.2	0.8	1.6	52.0	100.0
2011		15.4	20.7	55.4	74.2	3.2	4.3	0.6	0.8	74.7	100.0
2012		38.0	28.8	85.7	64.9	7.9	6.0	0.4	0.3	132.0	100.0
2013		45.4	30.8	94.2	64.0	7.1	4.8	0.4	0.3	147.1	100.0
2014		42.2	27.3	103.0	66.6	9.3	6.0	0.2	0.1	154.8	100.0
2015		27.0	19.6	103.2	75.0	7.3	5.3	0.2	0.1	137.7	100.0
2016		13.9	13.4	84.3	81.5	4.9	4.7	0.3	0.3	103.3	100.0
2017		12.2	11.3	91.7	84.8	3.9	3.6	0.3	0.3	108.2	100.0
2014	Jan	41.4	29.0	94.7	66.3	6.3	4.4	0.5	0.3	142.9	100.0
	Feb	46.4	30.4	98.8	64.8	6.8	4.5	0.5	0.3	152.5	100.0
	Mar	45.3	29.2	102.1	65.8	7.3	4.7	0.5	0.3	155.1	100.0
	Apr	39.3	26.1	103.5	68.5	7.7	5.1	0.4	0.3	150.9	100.0
	May	43.4	26.7	111.2	68.4	7.4	4.6	0.5	0.3	162.5	100.0
	Jun	49.6	30.2	105.9	64.6	8.1	4.9	0.4	0.3	164.0	100.0
	Jul	48.8	29.3	108.3	65.0	9.0	5.4	0.4	0.2	166.5	100.0
	Aug	44.8	27.2	109.3	66.6	9.8	5.9	0.4	0.2	164.3	100.0
	Sep	43.5	27.2	106.3	66.5	9.5	6.0	0.4	0.3	159.8	100.0
	Oct	42.3	26.1	109.7	67.8	9.5	5.9	0.4	0.2	161.8	100.0
	Nov	46.0	27.5	111.4	66.6	9.8	5.8	0.2	0.1	167.4	100.0
	Dec	42.2	27.3	103.0	66.6	9.3	6.0	0.2	0.1	154.8	100.0
2015	Jan	40.4	25.2	110.7	68.9	9.4	5.9	0.2	0.1	160.7	100.0
	Feb	38.4	24.5	108.2	69.1	9.9	6.3	0.2	0.1	156.6	100.0
	Mar	35.7	23.7	104.8	69.7	9.7	6.4	0.2	0.1	150.3	100.0
	Apr	32.5	21.7	107.1	71.5	10.1	6.7	0.2	0.1	149.8	100.0
	May	30.3	20.3	108.8	72.7	10.3	6.9	0.2	0.1	149.6	100.0
	Jun	33.1	22.8	102.5	70.5	9.6	6.6	0.3	0.2	145.4	100.0
	Jul	32.2	22.4	102.8	71.5	8.6	6.0	0.2	0.2	143.8	100.0
	Aug	29.7	21.3	101.3	72.8	8.0	5.8	0.2	0.1	139.2	100.0
	Sep	28.6	20.7	102.2	73.8	7.5	5.4	0.2	0.2	138.5	100.0
	Oct	25.1	18.0	106.8	76.6	7.5	5.4	0.2	0.1	139.5	100.0
	Nov	23.2	17.0	106.1	77.7	7.0	5.1	0.3	0.2	136.6	100.0
	Dec	27.0	19.6	103.2	75.0	7.3	5.3	0.2	0.1	137.7	100.0
2016	Jan	23.2	18.3	95.5	75.5	7.7	6.0	0.2	0.2	126.6	100.0
	Feb	21.9	17.4	96.6	77.0	6.8	5.4	0.2	0.1	125.4	100.0
	Mar	18.9	14.5	103.4	79.5	7.6	5.9	0.2	0.1	130.2	100.0
	Apr	16.1	12.2	108.0	82.1	7.3	5.6	0.2	0.1	131.7	100.0
	May	12.8	10.9	97.3	83.1	6.8	5.8	0.2	0.1	117.1	100.0
	Jun	12.0	10.6	94.2	83.4	6.6	5.9	0.2	0.1	113.0	100.0
	Jul	11.6	10.4	94.0	84.3	5.7	5.1	0.2	0.2	111.5	100.0
	Aug	11.0	9.8	95.7	85.6	4.9	4.4	0.2	0.1	111.7	100.0
	Sep	15.0	13.1	93.2	81.8	5.6	4.9	0.2	0.1	113.9	100.0
	Oct	14.7	12.7	95.2	82.0	5.7	4.9	0.4	0.4	116.0	100.0
	Nov	11.9	11.6	84.8	83.2	5.2	5.1	0.1	0.1	102.0	100.0
	Dec	13.9	13.4	84.3	81.5	4.9	4.7	0.3	0.3	103.3	100.0
2017	Jan	11.8	11.3	87.9	84.3	4.5	4.3	0.1	0.1	104.3	100.0
	Feb	11.8	10.6	95.0	85.3	4.5	4.1	0.1	0.1	111.4	100.0
	Mar	13.8	11.5	101.6	84.5	4.8	4.0	0.1	0.1	120.3	100.0
	Apr	14.4	12.1	99.8	83.6	5.0	4.2	0.1	0.1	119.3	100.0
	May	15.4	12.8	99.2	82.6	5.3	4.4	0.2	0.1	120.0	100.0
	Jun	16.7	13.4	102.3	82.3	5.2	4.2	0.2	0.2	124.4	100.0
	Jul	15.7	12.6	103.9	83.5	4.6	3.7	0.2	0.1	124.4	100.0
	Aug	12.9	10.4	106.7	85.7	4.7	3.8	0.2	0.1	124.5	100.0
	Sep	13.2	10.6	106.6	85.4	4.9	3.9	0.1	0.1	124.7	100.0
	Oct	11.5	9.8	100.5	86.3	4.4	3.8	0.1	0.0	116.4	100.0
	Nov	11.8	9.9	103.1	86.2	4.6	3.9	0.1	0.1	119.6	100.0
	Dec	12.2	11.3	91.7	84.8	3.9	3.6	0.3	0.3	108.2	100.0

1/ It includes Bondes D and Bonos IPAB.
Source: Banco de México.

Table A 66
Gross External Debt Position
By residence [1]
End of period outstanding stocks

Items	USD million			Percent of GDP		
	2016 [p]	2017 [p]	Difference	2016 [p]	2017 [p]	Difference
TOTAL (I + II + III + IV)	316,177.3	334,032.6	17,855.3	28.2	29.8	1.6
TOTAL ADJUSTED (I + II +III + IV + V)	414,577.1	437,366.8	22,789.7	37.0	39.1	2.0
PUBLIC SECTOR (I + 3.3 + 4.2.1)	180,986.0	193,981.2	12,995.2	16.2	17.3	1.2
I. Federal Government [2]	88,157.0	91,072.2	2,915.2	7.9	8.1	0.3
II. Monetary authority	0.0	0.0	0.0	0.0	0.0	0.0
III. Banking sector	25,593.6	25,093.8	-499.8	2.3	2.2	0.0
3.1 Commercial banks [3]	13,827.5	11,128.6	-2,698.9	1.2	1.0	-0.2
3.2 Other depositary corporations [4]	1,624.9	2,836.2	1,211.3	0.1	0.3	0.1
3.3 Development banks [2]	10,141.2	11,129.0	987.8	0.9	1.0	0.1
IV. Other sectors	202,426.7	217,866.7	15,440.0	18.1	19.5	1.4
4.1 Non-bank financial corporations [5]	32.6	31.0	-1.6	0.0	0.0	0.0
4.2 Non-bank enterprises	202,394.1	217,835.7	15,441.6	18.1	19.5	1.4
4.2.1 Public enterprises and entities [2]	82,687.8	91,780.0	9,092.2	7.4	8.2	0.8
4.2.2 Private sector [6]	119,706.3	126,055.7	6,349.4	10.7	11.3	0.6
4.2.3 IPAB [7]	0.0	0.0	0.0	0.0	0.0	0.0
V. Adjustments (5.1-5.2+5.3+5.4+5.5)	98,399.8	103,334.2	4,934.4	8.8	9.2	0.4
5.1 Non-residents' holdings of MXN-denominated debt [8]	102,147.1	107,223.1	5,076.0	9.1	9.6	0.5
5.2 Residents' holdings of foreign currency-denominated debt [9]	4,466.8	4,599.6	132.8	0.4	0.4	0.0
5.3 Agencies' claims on Mexican residents [10]	668.2	659.3	-8.9	0.1	0.1	0.0
5.4 Pemex-Pidiregas [11]	0.0	0.0	0.0	0.0	0.0	0.0
5.5 Other debt liabilities with non-residents [12]	51.3	51.4	0.1	0.0	0.0	0.0

1/ Gross external debt statistics are compiled by Banco de México and the Ministry of Finance (SHCP). In order to comply with IMF's "External Debt Statistics: Guide for Compilers and Users" (2003) and, at the same time, facilitate its comparison with official figures published by the Ministry of Finance (available at www.shcp.gob.mx), both official statistics on Mexico's public external debt and its corresponding adjustments are presented following IMF's Special Data Dissemination Standard (SDDS) for residence criteria.

2/ Public sector data (federal government, development banks and public enterprises and institutions) are classified according to "user" criteria.

3/ Unlike official statistics, the present figures do not include debt with other non-resident entities of Mexican commercial bank agencies' located abroad. The reason for such exclusion is that IMF's "External Debt Statistics: Guide for Compilers and Users (2003)" considers agencies as non-residents. Figures include accrued interests.

4/ Includes financial leasing companies, financial factoring companies, limited purpose financial companies (*Sociedades Financieras de Objeto Limitado*, Sofoles), savings and loan companies, credit unions, and investment funds.

5/ Includes insurance companies, deposit warehouses, brokerage houses and bonding companies.

6/ Data on short and long-term loans are drawn from Banco de México's Survey "Outstanding Consolidated Claims on Mexico" on foreign creditor banks. Since official statistics for private sector's debt are based on debtor data, figures may not coincide with those published by the Ministry of Finance.

7/ Institute for the Protection of Banks' Savings (*Instituto para la Protección al Ahorro Bancario*, IPAB). Since official statistics do not include this item, it is reported as zero. However, IPAB's liabilities with non-residents are considered in the adjustments section.

8/ Defined as non-residents' holdings of Treasury bills (Cetes), federal government development bonds (Bondes); fixed-rate federal government development bonds (Bonos), federal government bonds denominated in investment units (Udibonos), monetary regulation bonds (BREMs) and savings protection bonds (BPAs and BPATs).

9/ Federal government bonds denominated in foreign currency held by Mexican residents.

10/ Corresponds to Mexican residents' liabilities with Mexican commercial banks' agencies abroad. Includes both agencies' direct loans to Mexican residents and agencies' holdings of bonds issued by Mexican residents.

11/ Pidiregas (*Proyectos de Infraestructura Productiva a Largo Plazo*) is a mechanism used since 1995 to finance strategic long-term investment projects for the oil, gas and energy industries. This item does not include debt related with Pidiregas-CFE because such debt is assumed as part of the private sector. If such assumption were incorrect, the Gross External Debt associated with Pidiregas would be underestimated. In 2009 the Pidiregas model of Pemex was cancelled, after which this firm's investment is funded by own sources or debt, and, therefore, it is registered as budget investment.

12/ Includes deposits of Banco de México, international financial entities and foreign central banks.

p/ Preliminary figures. Calculations based on GDP of the last quarter of the year and end of period FIX exchange rate.

Source: Banco de México and Ministry of Finance (SHCP).

Balance Sheet

BANCO DE MÉXICO

BALANCE SHEET AS OF DECEMBER 31, 2017
MXN MILLION

A S S E T S		**LIABILITIES AND EQUITY**	
INTERNATIONAL RESERVES	$ **3,397,785**	**MONETARY BASE**	$ **1,545,934**
INTERNATIONAL ASSETS	3,449,853	BANKNOTES AND COINS IN CIRCULATION	1,542,611
LIABILITIES TO BE DEDUCTED	(52,068)	BANK DEPOSITS IN CURRENT ACCOUNT	3,323
		FEDERAL GOVERNMENT CURRENT ACCOUNT	
		DEPOSITS	301,644
CREDIT GRANTED TO THE FEDERAL GOVERNMENT	0	**OTHER FEDERAL GOVERNMENT DEPOSITS**	224,859
		MONETARY REGULATION LIABILITIES	1,310,293
		MONETARY REGULATION DEPOSITS	1,149,367
GOVERNMENT SECURITIES	0	GOVERNMENT SECURITIES	934,374
		BANKS	214,993
		MONETARY REGULATION BONDS	105,085
		OTHER DEPOSITS FROM BANKS AND CREDITORS FROM	
CREDIT GRANTED TO BANKS		REPO OPERATIONS	55,841
AND DEBTORS FROM REPO OPERATIONS	288,959		
		DEPOSITS FROM MEXICAN OIL STABILIZATION	
		AND DEVELOPMENT FUND	27,382
PARTICIPATION IN INTERNATIONAL FINANCIAL		**INTERNATIONAL MONETARY FUND**	0
INSTITUTIONS	14,450		
		SPECIAL DRAWING RIGHTS	79,841
		OTHER LIABILITIES	87,501
FIXED ASSETS, FURNISHINGS AND EQUIPMENT	4,607		
		TOTAL LIABILITIES	3,577,454
		CAPITAL	8,933
OTHER ASSETS	25,132	**CAPITAL RESERVES**	384,559
		FISCAL YEAR'S OPERATIONAL LOSS	(240,142)
		OTHER COMPREHENSIVE INCOME	129
		TOTAL EQUITY	153,479
TOTAL ASSETS	$ **3,730,933**	**TOTAL LIABILITIES AND EQUITY**	$ **3,730,933**

MEMORANDUM ACCOUNTS $27,589,327

The present Balance Sheet was prepared according to the requirements set in the Law governing Banco de México and Banco de México's Internal Bylaw, following the Financial Reporting Standards of Banco de México that have the favorable opinion of the Mexican Financial Reporting Standards Board, regarding its complete convergence with the Mexican Financial Reporting Standards, except for the cases in which Banco de México's Internal Law dictates a different course of action. In compliance with Article 38 of the referred Bylaw, International Reserves are defined as stated in Article 19 of the Law governing Banco de México; Government Securities are presented as net holdings after deducting Monetary Regulation Deposits, excluding any securities purchased or transmitted via repo operations, and if there is a creditor position, it is listed under line item Monetary Regulation Deposits; Credit Granted to Banks and Debtors from Repo Operations includes Commercial Banks, Development Banks and repo operations. The accounts balance in foreign currency was valued at the daily exchange rate.

LIC. ALEJANDRO DÍAZ DE LEÓN CARRILLO
GOVERNOR

DRA. LORENZA MARTÍNEZ TRIGUEROS	**L.C. VÍCTOR MOISÉS SUÁREZ PICAZO**
PAYMENT SYSTEMS AND CORPORATE	**ACCOUNTING, PLANNING AND BUDGET**
SERVICES DIRECTOR GENERAL	**DIRECTOR**