BANCO DE MÉXICO

Quarterly Report

July – September 2017

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QUARTERLY REPORT

This report analyzes recent developments in economic activity, inflation and different economic indicators in Mexico, as well as the monetary policy implementation in the quarter July – September 2017, and, in general, the activities of Banco de México over the referred period, in the context of the Mexican and international economic environment, in compliance with Article 51, section II of Banco de México's Law.

FOREWARNING

This text is provided for readers' convenience only. Discrepancies may possibly arise between the original document and its translation to English. The original and unabridged Quarterly Report in Spanish is the only official document.

Unless otherwise stated, this document has been prepared using data available as of November 21, 2017. Figures are preliminary and subject to changes.

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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.

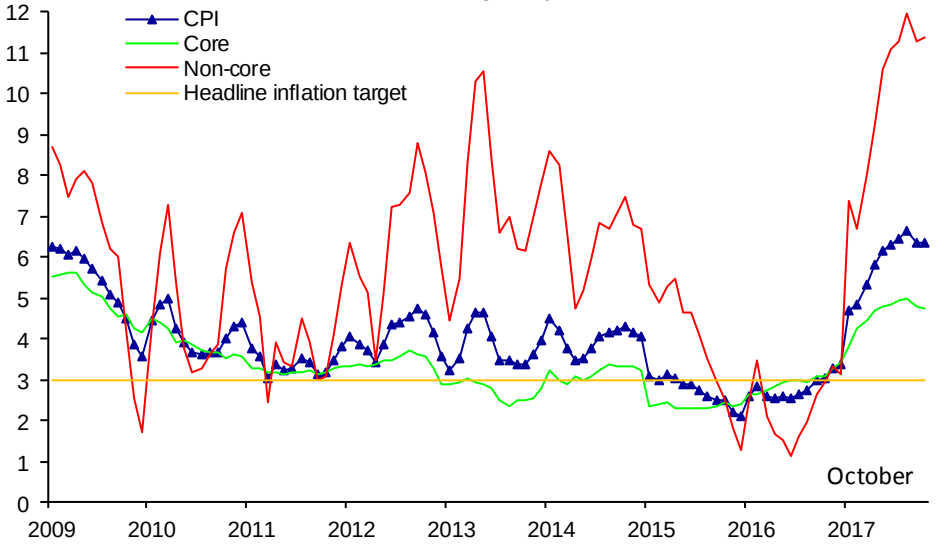
Thus, average annual headline inflation shifted from 6.10 percent in the second quarter of 2017 to 6.48 percent in the third one. However, as mentioned above, in August this indicator marked a maximum of 6.66 percent, while in September it went down to 6.35 percent, and reached 6.37 percent in October, 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 1, Chart 1 and Chart 5).

Table 1
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 1
Consumer Price Index
Annual change in percent



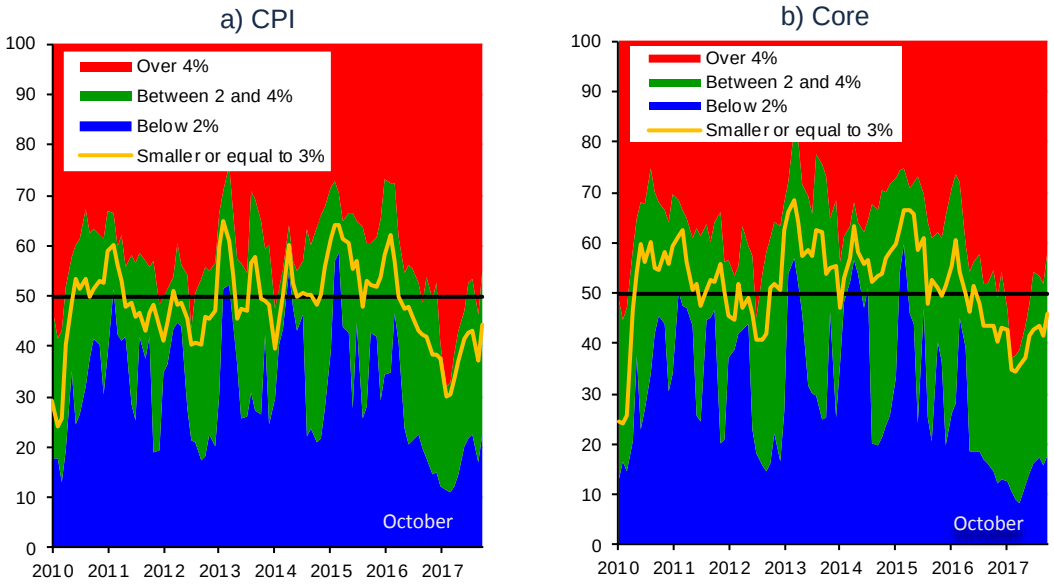
Source: Banco de México and INEGI.

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 2). 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 2
Percentage of CPI Basket according to Intervals of Monthly Annualized Increment, s. a.[1/]
Percent

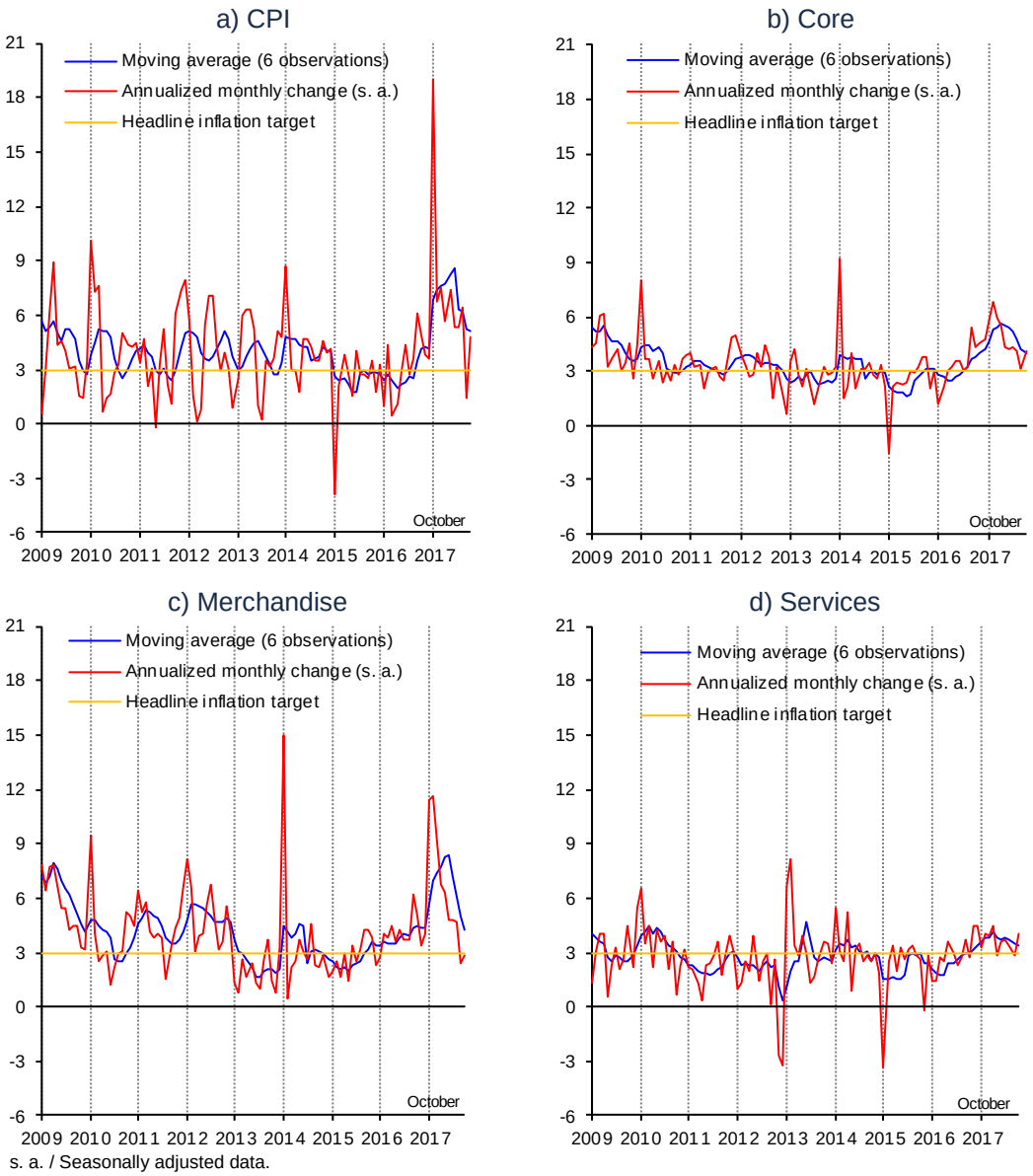


s. a. / Seasonally adjusted data.
1/ 3-month moving average.
Source: Banco de México and INEGI.

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 3 and Table 1).

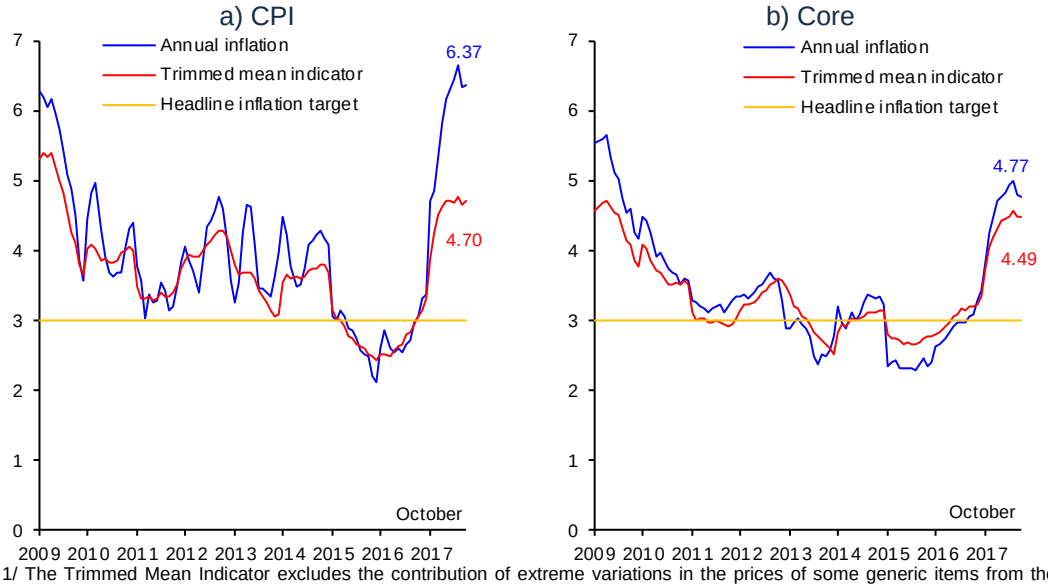
Chart 3
Annualized Seasonally Adjusted Monthly Change and Trend
Percent



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 4 and Table 1).

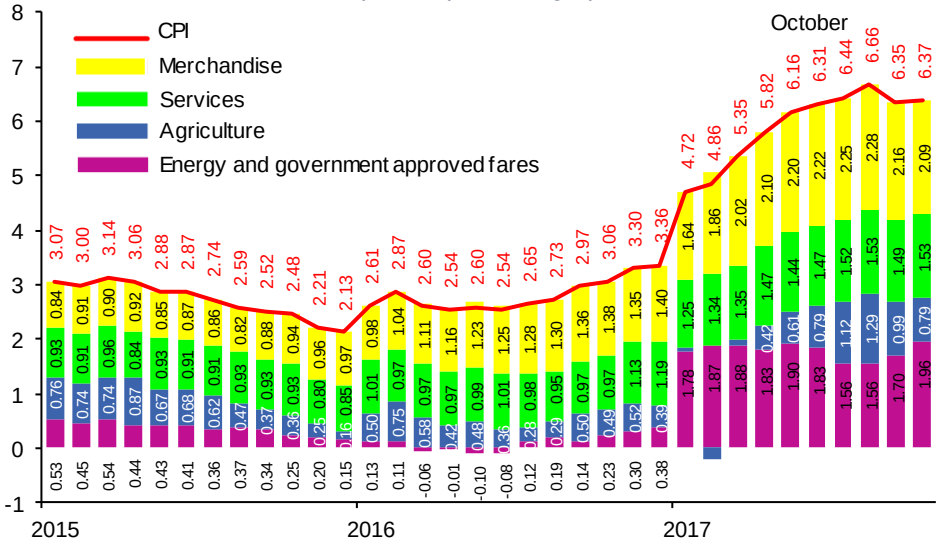
Chart 4
Price Indices and Trimmed Mean Indicators [1/]
Annual change in percent



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.

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 5).

Chart 5
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.

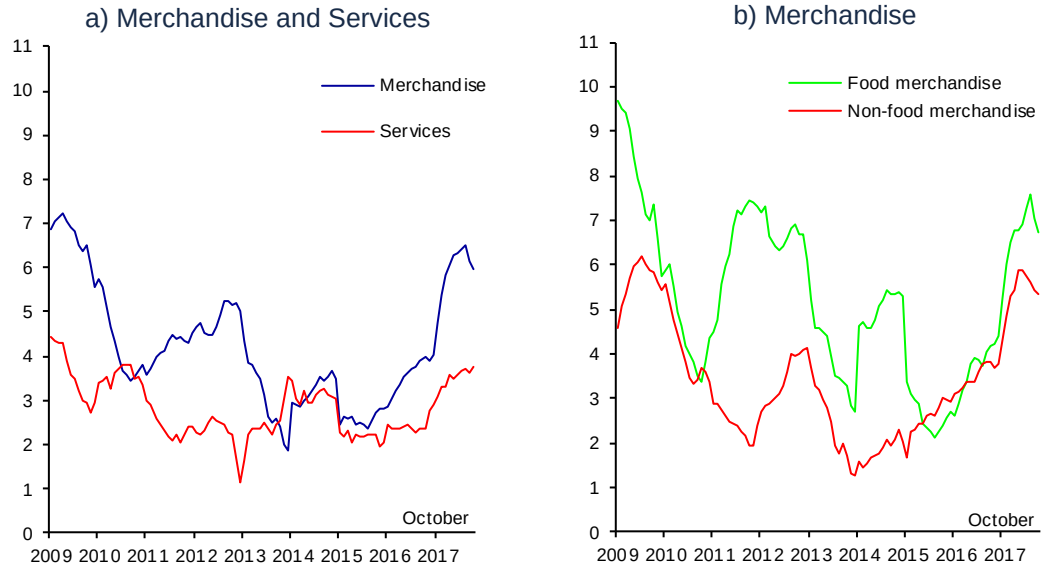
In particular:

i. 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 6a and Chart 6b).

ii. 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 6a). 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,

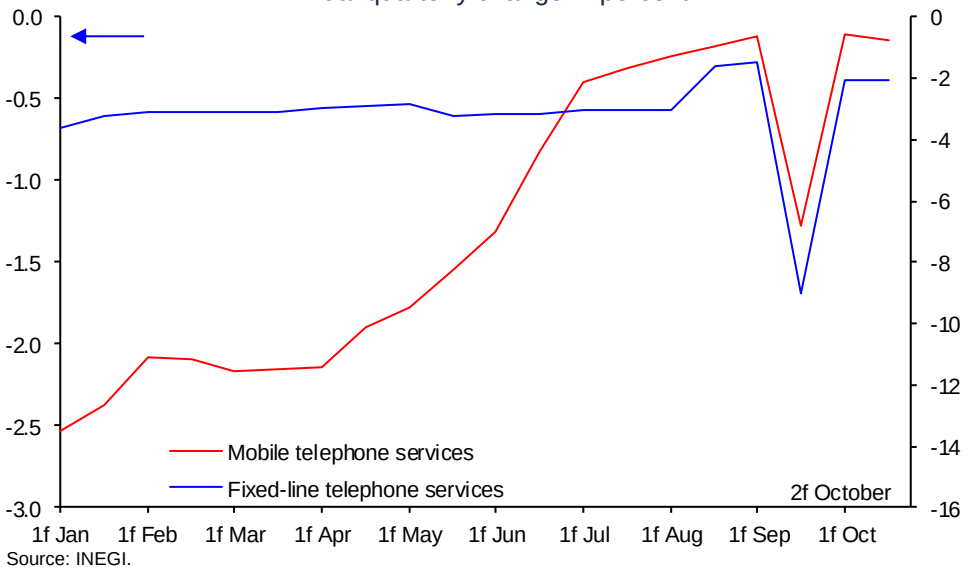
the growth rate of the services' prices went down, which reversed in October when the referred free-of-charge period concluded (Chart 7).

Chart 6
Core Price Index
Annual change in percent



Source: Banco de México and INEGI.

Chart 7
Telephone Services Price Index 2017
Annual quarterly change in percent



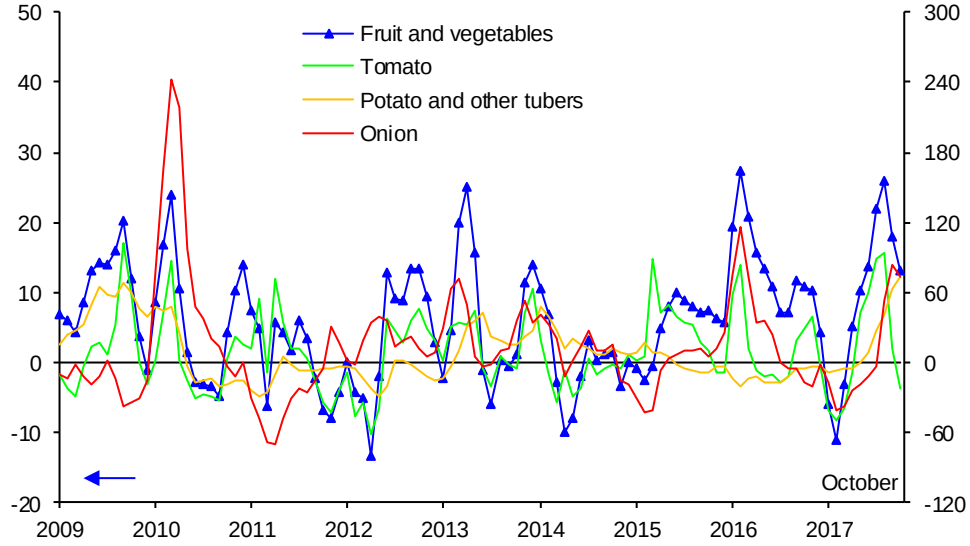
Source: INEGI.

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 5, Chart 9 and Table 1).

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 8).

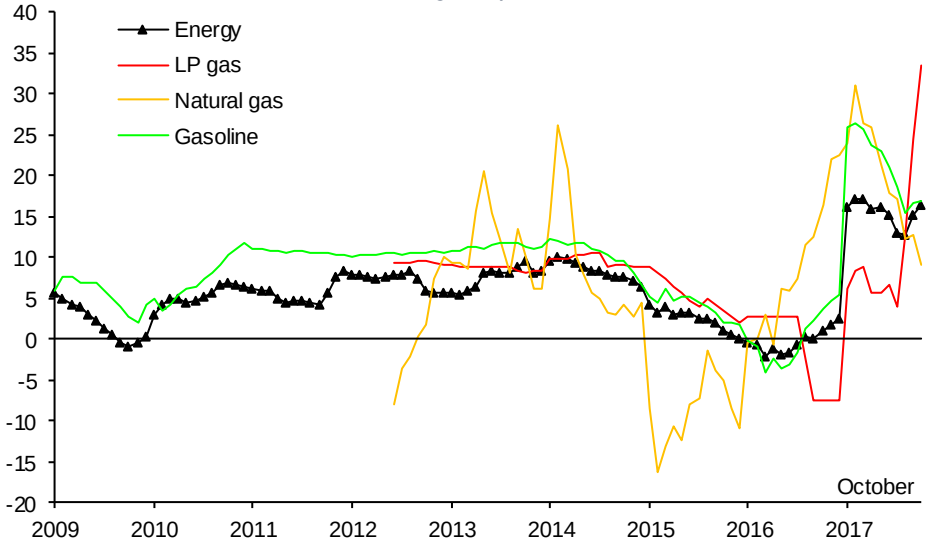
Chart 8
Price Index of Selected Fruit and Vegetables
Annual change in percent



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 9).

Chart 9
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.[1]

- 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.[2] In this way, its average monthly change between the

[1] 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.

[2] See Box 1 of the Quarterly Report January – March 2017, "Recent Evolution of LP Gas Price and Market Considerations".

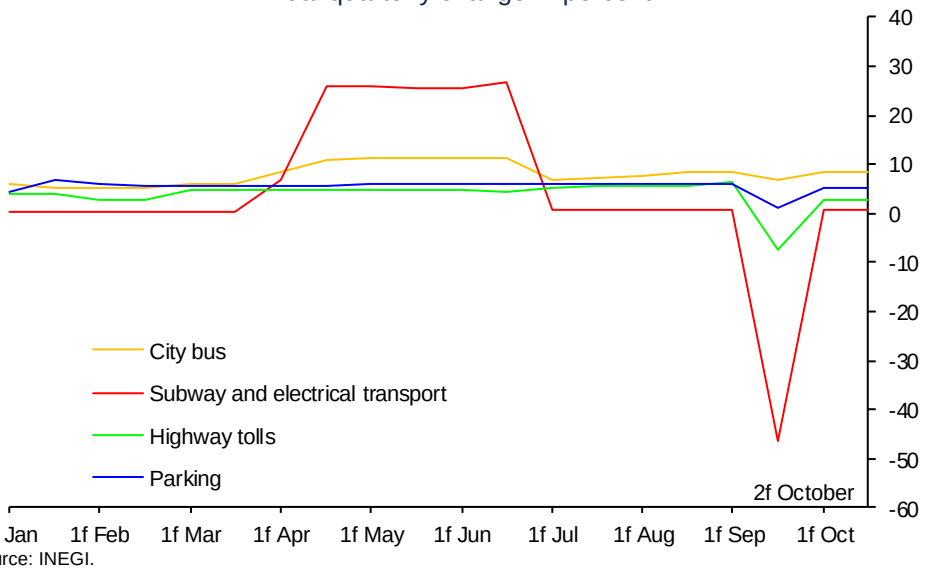
second and the third quarters of 2017 increased from -0.67 to 1.70 percent, and marked 7.41 percent in October.

- 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 10). 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 10
Price Indices of Selected Government Approved Fares in 2017
Annual quarterly change in percent

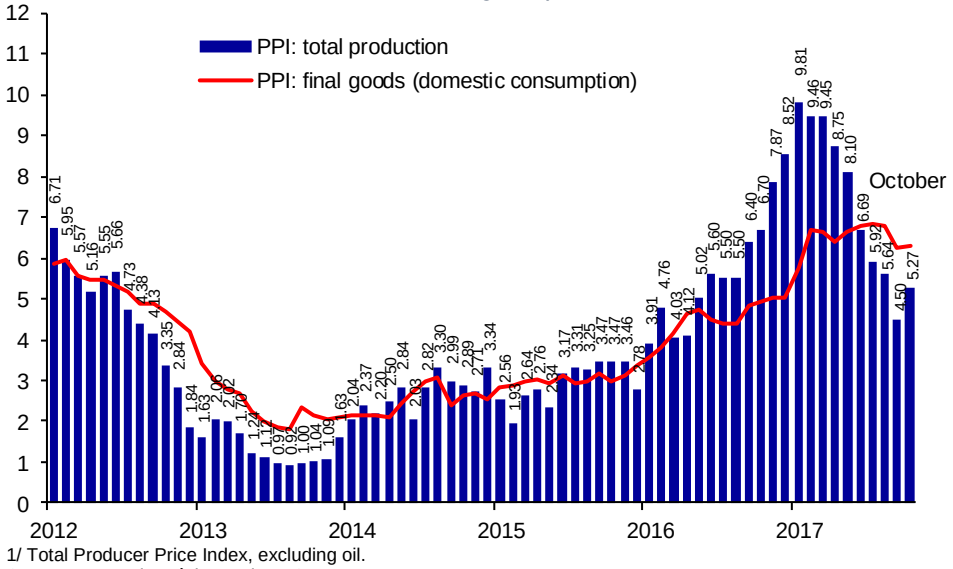


Source: INEGI.

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.[3]

Chart 11
Producer Price Index [1/]
Annual change in percent



1/ Total Producer Price Index, excluding oil.
Source: Banco de México and INEGI.

[3] 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

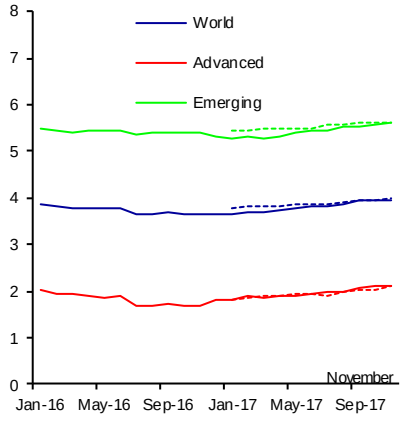
3.1. External Conditions

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 12a). 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 12b and Chart 12c). 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.

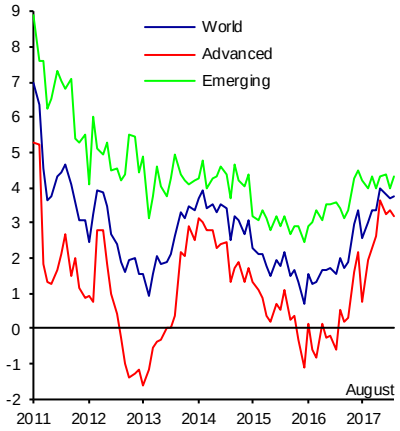
Chart 12
World Economic Activity

a) Growth Forecast of World GDP for 2017 and 2018
Annual change in percent



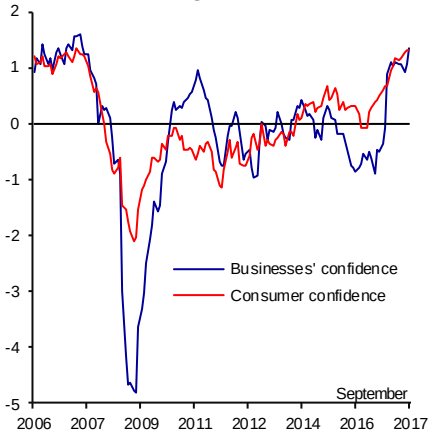
Note: The dotted line refers to the growth forecast for 2018.
Source: Prepared by Banco de México with data from Consensus Forecasts and IMF.

b) Industrial Production
Annual change in percent, s. a.



s. a. / Seasonally adjusted data.
Source: CPB Netherlands.

c) Global Consumer and Businesses' Confidence
Standard deviations with respect to the average 2010 - 2017



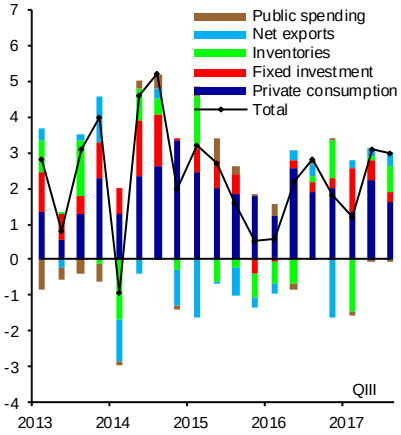
Note: It includes 65 percent of global GDP and refers to the average weighted by the share of each country in global GDP adjusted by the purchasing power parity.
Source: Banco de México with data from Haver Analytics.

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 13a and Chart 13b).

Meanwhile, industrial production contracted temporarily in the third quarter, when it registered a 0.3 percent drop in annualized quarterly terms (Chart 13c). 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.

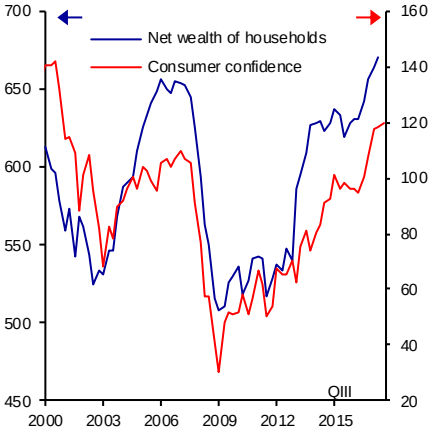
Chart 13
U.S. Economic Activity

a) Real GDP and Components
Annualized quarterly change in percent and percentage point contributions, s. a.



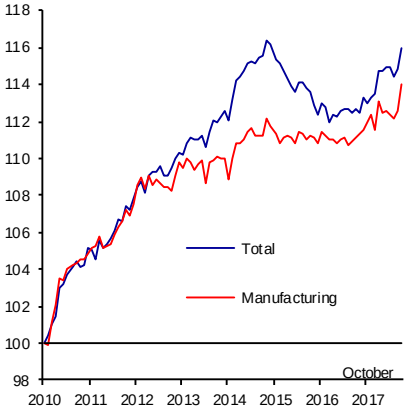
s. a. / Seasonally adjusted data.
Source: Bureau of Economic Analysis.

b) Net Wealth of Households and Consumer Confidence, s. a.
In percent of disposable personal income and Index 1985=100



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

c) Industrial Activity
Index Jan 2010=100, s. a.

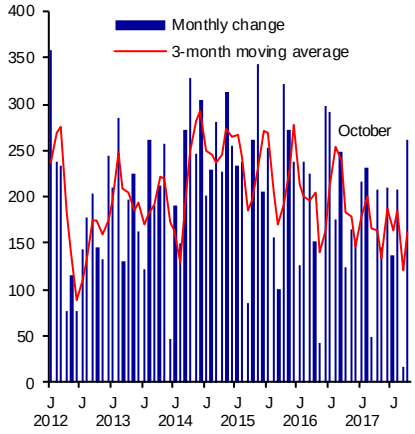


s. a. / Seasonally adjusted data.
Source: Federal Reserve.

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 14a), 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 14b). 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 14c).

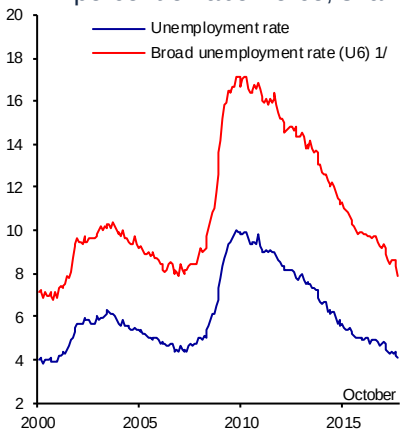
Chart 14
U.S. Labor Market

a) Non-farm Payroll
In thousands of jobs, s. a.



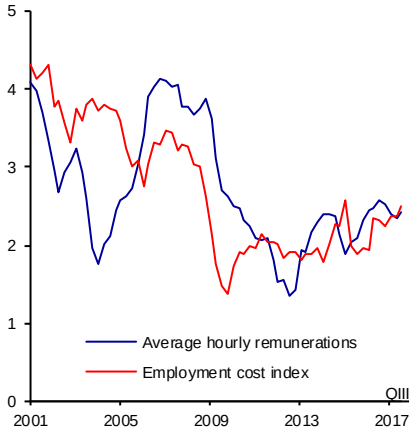
s. a. / Seasonally adjusted data.
Source: Bureau of Labor Statistics.

b) U.S.: Slack Measures of the Labor Market
In percent of labor force, s. a.



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.

c) Wage Indicators
Annual change in percent, s. a.



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 1).

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 15).

Box 1
Analysis of the U.S. – Mexico Manufacturing Trade Balance in Terms of Value Added

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:

$$\boldsymbol{E}^{sr} = \boldsymbol{c}^{sr} + \boldsymbol{A}^{sr}\boldsymbol{x}^{r} \quad (1)$$

Where $\boldsymbol{E}^{sr}$ is a vector of exports of the country *s*, which includes those destined to final consumption ($\boldsymbol{c}^{sr}$) and those used as intermediate inputs by the country *r* ($\boldsymbol{A}^{sr}\boldsymbol{x}^{r}$). Here, $\boldsymbol{A}^{sr}$ 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, $\boldsymbol{x}^{r}$ 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

[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.

i,t within the Leontief matrix of a country defined as $\boldsymbol{L^{ss} = (I - A^{ss})^{-1}}$.

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*.

$$\boldsymbol{DVA = (V^s B^{ss}) \circ c^{sr} + V^s B^{ss} \circ (A^{sr} X^r)} \quad (3)$$

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.

$$\boldsymbol{FVA = \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ c^{sr} + \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ A^{sr} L^{rr} c^{rr} + \left(\sum_{t \neq s}^{G} V^t B^{ts}\right) \circ A^{sr} L^{rr} E^{r*}} \quad (4)$$

Where ∘ is the element-by-element multiplication operator or Hadamard product, and $\boldsymbol{E^{r*}}$ are total exports of country *r.*

Thus, exports from *s* to *r* are a sum of domestic and foreign VA:

$$\boldsymbol{E^{sr} = DVA + FVA} \quad (5)$$

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

$$X_{US,MX} = DVA_{MX} + FVA_{US}^{MX} + \sum_{i \neq US}^{N} FVA_i^{MX} \quad (6)$$

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:

$$B = X_{MX,US} - X_{US,MX} \quad (8)$$

The terms can be regrouped based on the previous decomposition, so that the gross trade balance can be expressed as follows:

$$B = (DVA_{US} - DVA_{MX}) + (FVA_{MX}^{US} - FVA_{US}^{MX}) + \left(\sum_{i \neq MX}^{N} FVA_i^{US} - \sum_{i \neq US}^{N} FVA_i^{MX}\right) \quad (9)$$

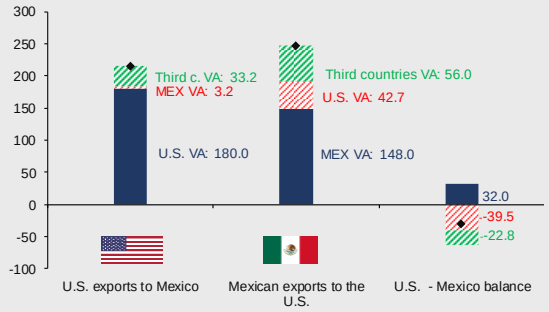
VA Balance (I) (II) (III)

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

[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

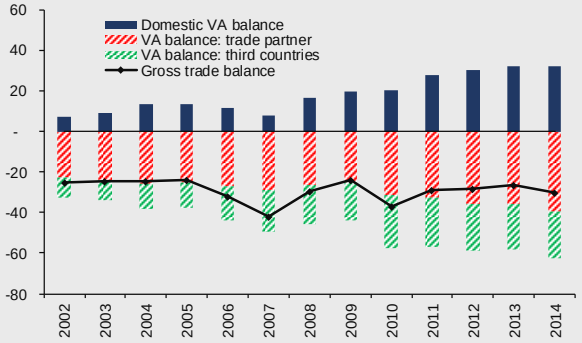


Note: Diamonds refer to exports and to gross manufacturing trade balance.
Source: Prepared by Banco de México with data from the WIOD and the U.S. Department of Commerce.

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

[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.

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 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
Electrionics	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.

[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.

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.

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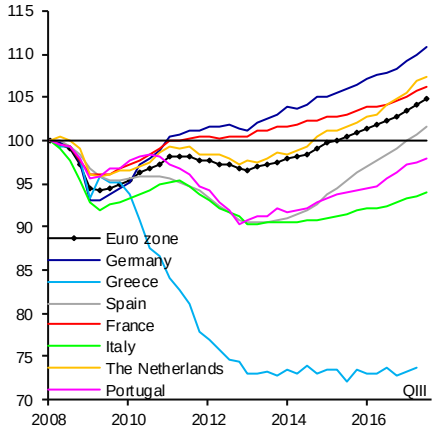
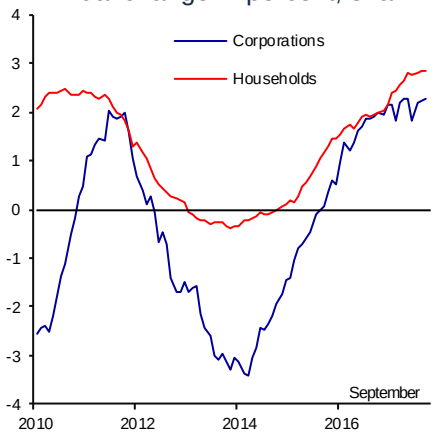
Chart 15
Euro Zone Indicators

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



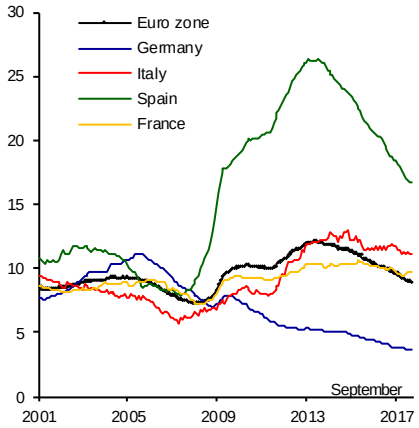
s. a. / Seasonally adjusted data.
Source: Eurostat.

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



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

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



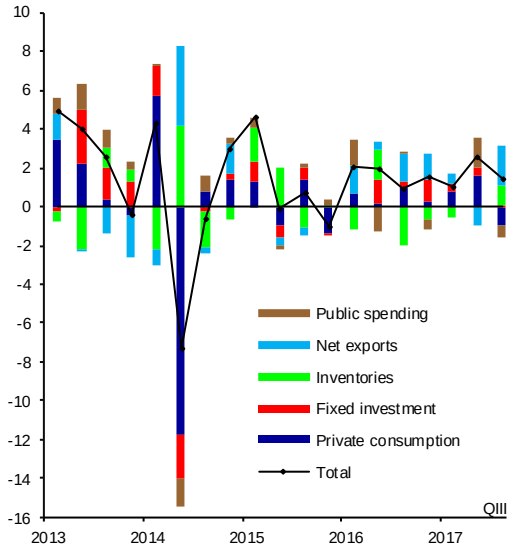
s. a. / Seasonally adjusted data.
Source: Haver Analytics.

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 16a). 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 16b). 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.

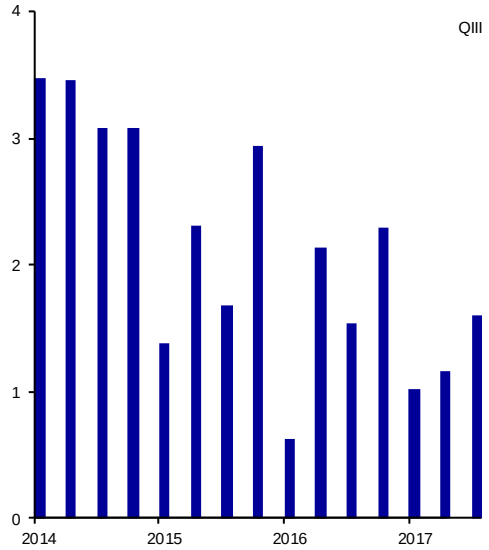
Chart 16
Economic Activity in Japan and the U.K.

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



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

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



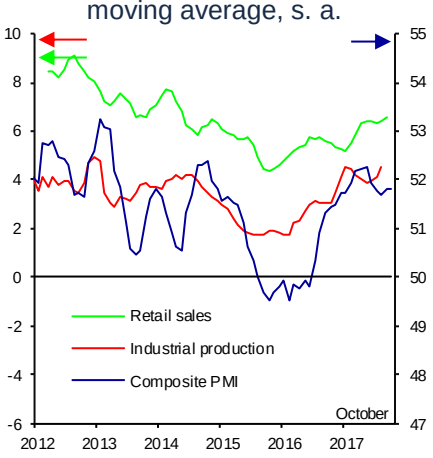
s. a. / Seasonally adjusted data.
Source: Office for National Statistics.

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 17a and Chart 17b).

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 17c). 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.

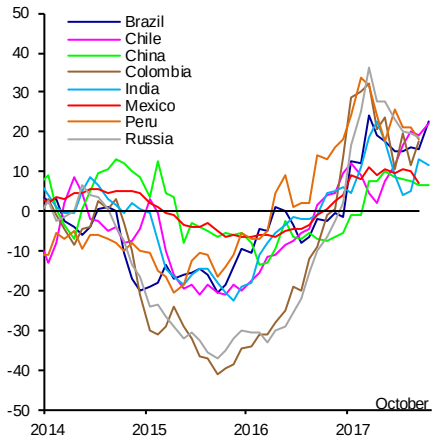
Chart 17
Economic Indicators of Emerging Economies

a) Emerging Economies: Indicators of Economic Activity
Diffusion index (50=neutral) and the annual change in percent, 3-month moving average, s. a.



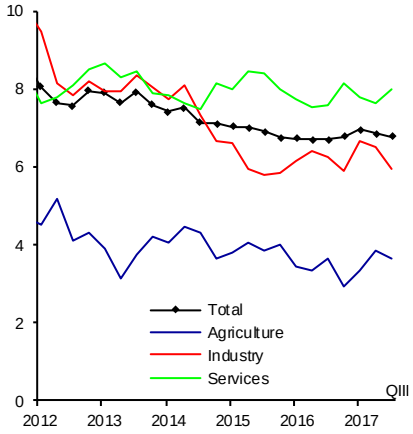
s. a. / Seasonally adjusted data.
Note: Industrial production and retail sales expressed in volumes.
Source: CPB Netherlands, Markit, Haver Analytics and IMF.

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



Note: Nominal figures.
Source: Haver Analytics.

c) China: Gross Domestic Product
Annual change in percent

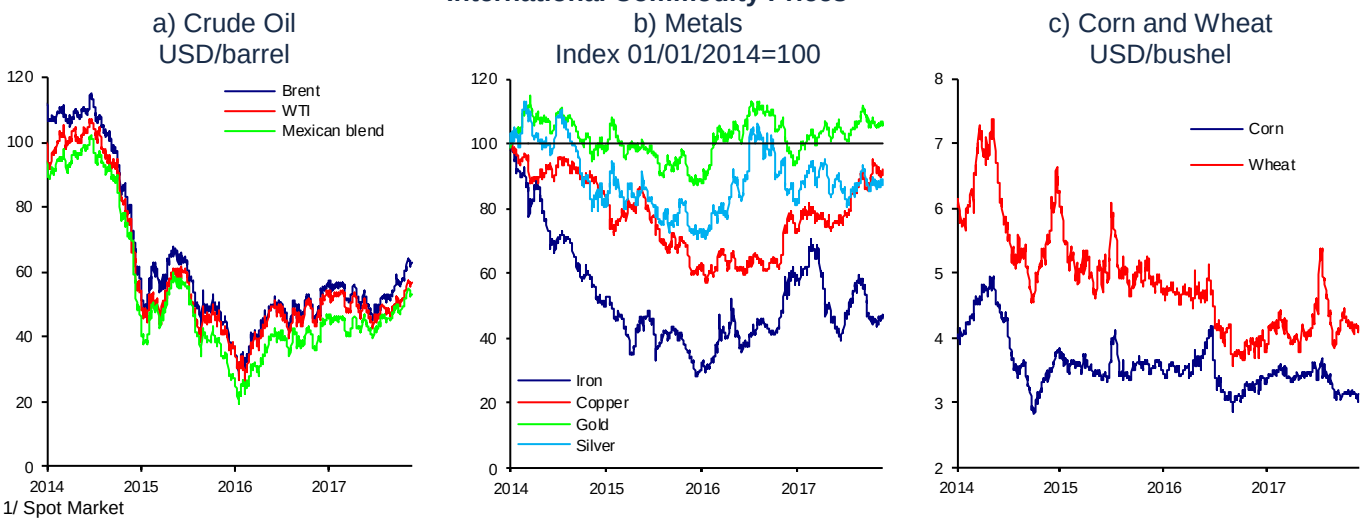


Source: Haver Analytics.

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 18a). 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 18b). In contrast, grain prices declined as a result of the signs of higher global supply, following a period of high volatility (Chart 18c).

Chart 18
International Commodity Prices [1/]



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 19a). 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.

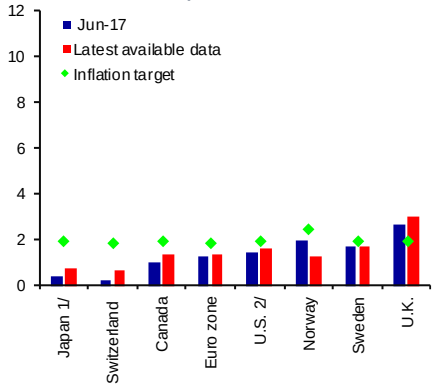
In Japan, headline inflation increased from 0.4 percent in June to 0.7 percent in September. Meanwhile, the core indicator, which excludes fresh foods and energy, shifted from 0 to 0.2 percent over the said period. This is attributed to higher stability

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 19b).

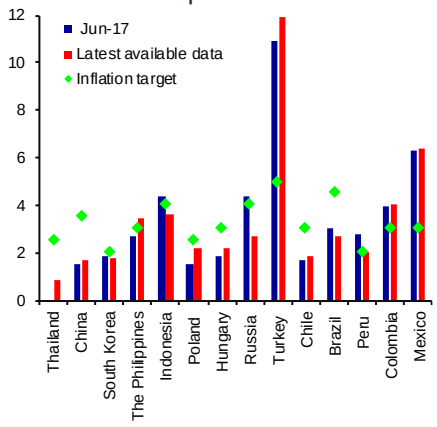
Chart 19
Annual Headline Inflation in Advanced and Emerging Economies, and Reference Interest Rates

a) Advanced Economies: Headline Inflation
In percent



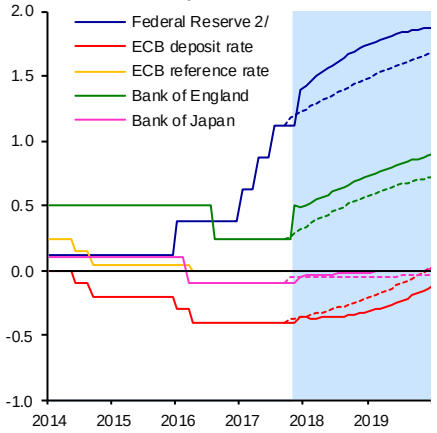
1/ It excludes fresh foods.
2/ It refers to consumption deflator. Seasonally adjusted data.
Source: Haver Analytics.

b) Emerging Economies: Headline Inflation
In percent



Source: Haver Analytics.

c) Reference Rate and Implicit Trajectories in OIS Curves 1/
In percent



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 19c).

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.

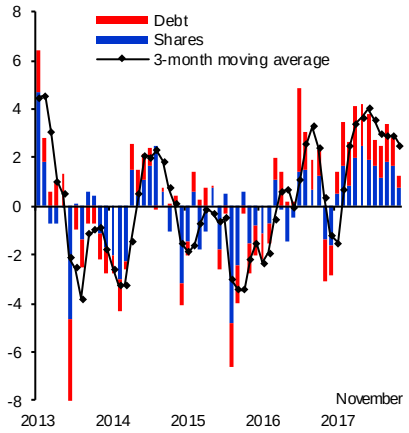
During the period covered by this Report, financial markets have benefitted from a scenario of a greater economic recovery, from a stronger expectation that a fiscal package will be approved in the U.S., and the outlook that monetary conditions will

remain accommodative (Chart 20 and Chart 21). 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.

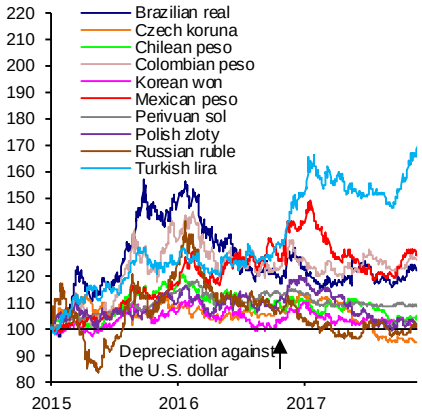
Chart 20
Financial Indicators in Selected Emerging Economies

a) Monthly Flows of Funds to Emerging Economies 1/
In USD billion



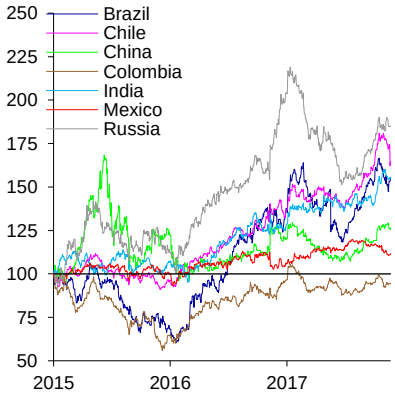
1/ The sample covers the funds used for the sale and purchase of emerging countries' shares and bonds, registered in advanced economies. The flows exclude the portfolio performance and exchange rate adjustments.
Source: EPFR.

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



Source: Bloomberg.

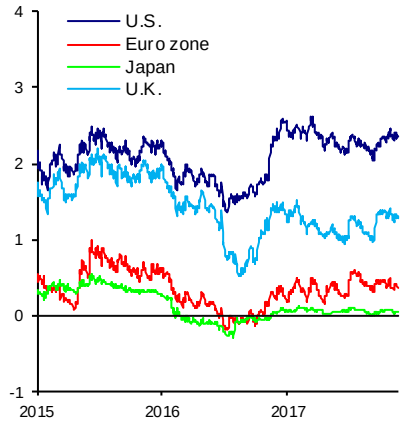
c) Stock Markets
Index 01/01/2015=100



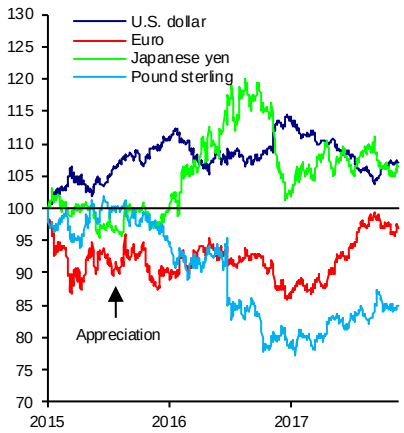
Source: Bloomberg.

Chart 21
Financial Indicators in Selected Advanced Economies

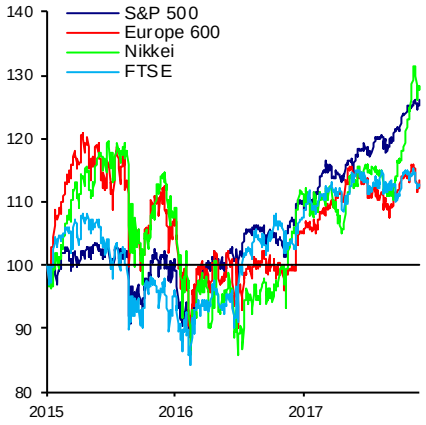
a) 10-Year Bond Yield
In percent



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

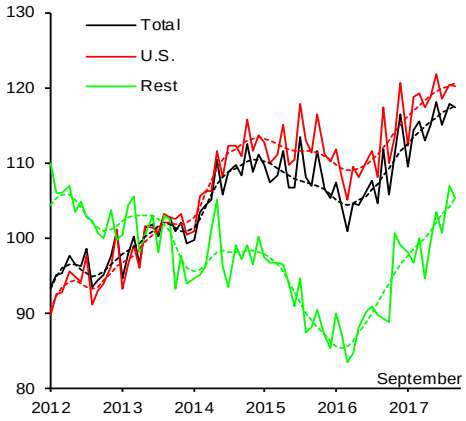
3.2.1. Economic Activity

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.[4] 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.

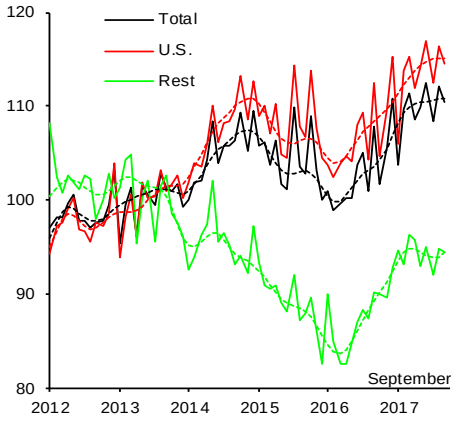
Regarding external demand, in the period July – September 2017, manufacturing exports kept expanding, after a negative trend registered during 2015 and in early 2016 (Chart 22a). The observed increase during the quarter being reported derived from higher automotive exports, especially those destined 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 22b and Chart 22c). 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 22
Mexican Exports
Index 2013=100, s. a.

a) Total Manufacturing Exports



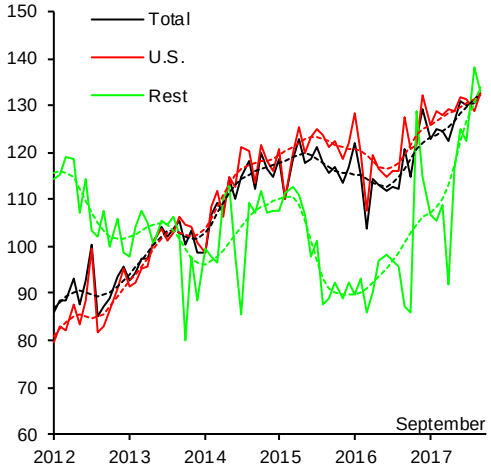
b) Non-automotive Manufacturing Exports



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.

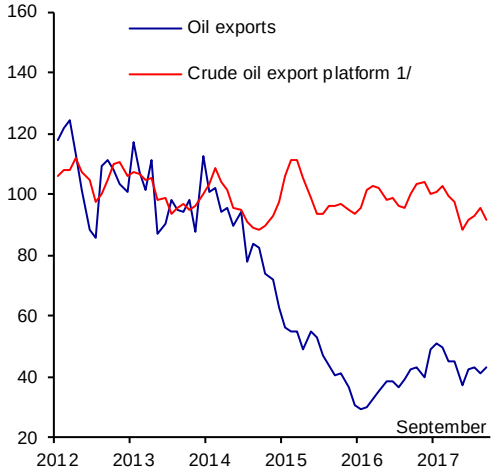
[4] On October 31, 2017, INEGI released the new data of the System of National Accounts of Mexico (SCNM), derived from the change of the base year from 2008 to 2013. It is noteworthy that based on GDP information from the period of 1993 to 2016, the average annual growth rate was modified from 2.59 percent (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 23a). Indeed, a slowdown in consumption of goods can be appreciated during the first half of 2017, while in more recent months there was an apparentrecovery. In contrast, the consumption of services continued to show a growing trajectory.

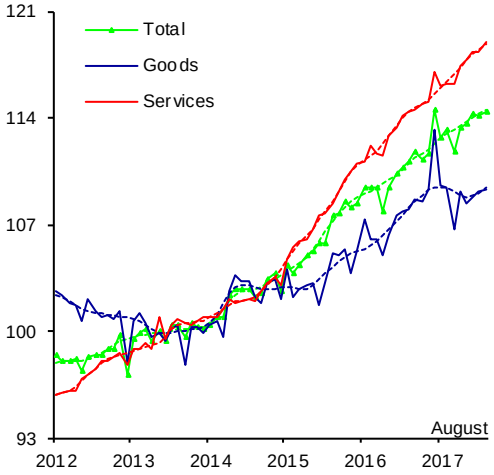
i. Despite a certain deceleration in some consumption determinants so far this year, they are still contributing to maintain private consumption at relatively high levels. In particular, as a result of the increment in the salaried employed population, the real wage bill remains at levels above those observed in 2008, despite the effect of inflation on real earnings (Chart 24a). 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 24b and Chart 24c).

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 23b). 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.

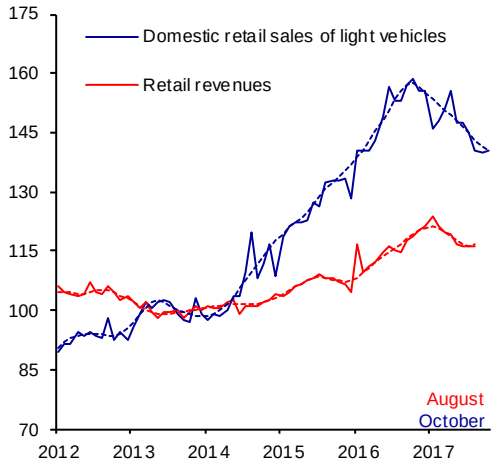
Chart 23
Consumption Indicators
Index 2013=100, s. a.

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.

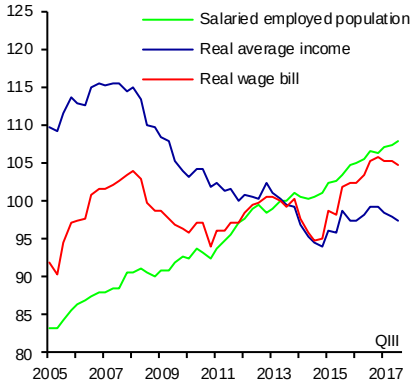
b) Domestic Retail Sales of Light Vehicles and Revenues of Retail Businesses



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.

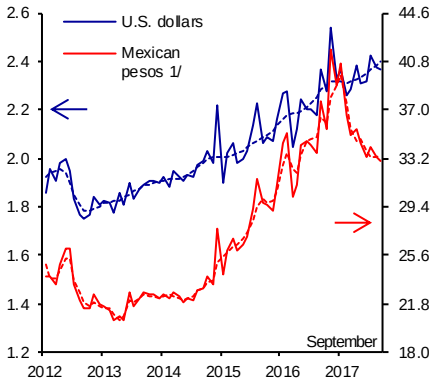
Chart 24
Determinants of Consumption

a) Total Real Wage Bill
Index 2013=100, s. a.



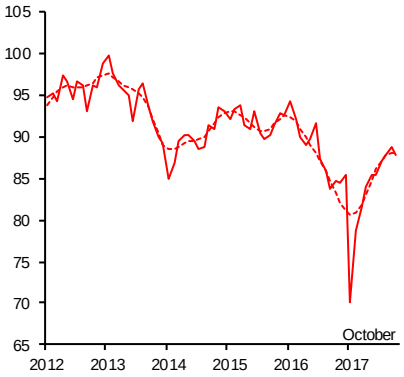
s. a. / Seasonally adjusted data.
Source: Prepared by Banco de México with data from the National Employment Survey (ENOE), INEGI.

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.



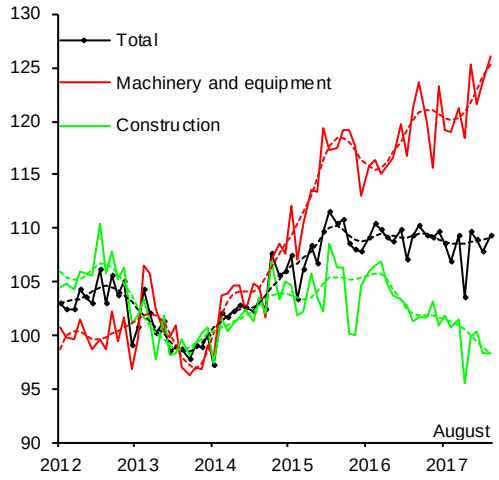
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: National Consumer Confidence Survey (ENCO), INEGI and Banco de México.

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 25a). 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 25b). 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 25c). 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 25d). 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 2).

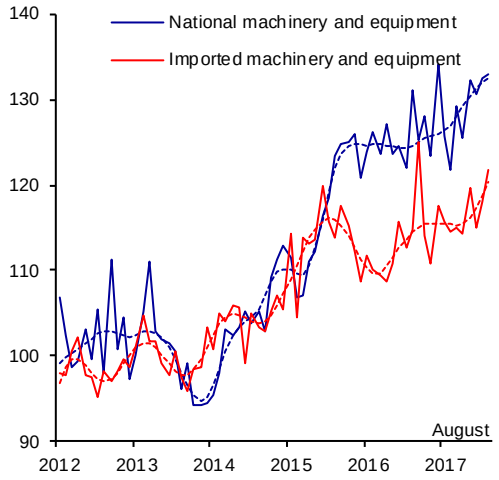
Chart 25
Investment Indicators

a) Investment and its Components
Index 2013=100, s. a.



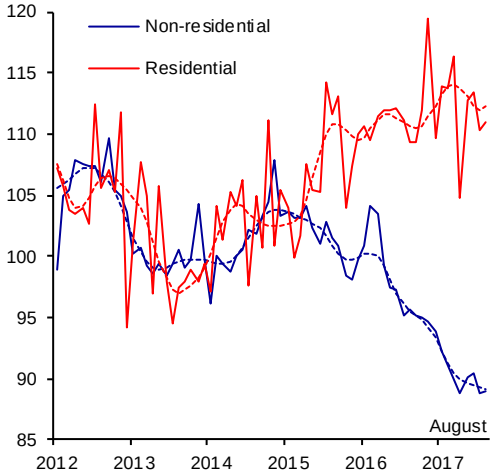
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

b) Investment in National and Imported Machinery and Equipment
Index 2013=100, s. a.



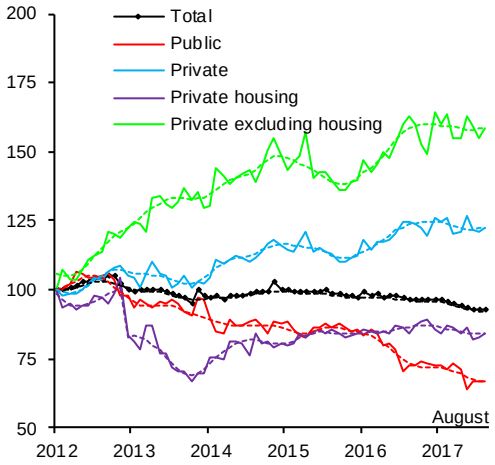
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

c) Investment in Residential and Non-residential Construction
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.

d) 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: Prepared by Banco de México with data from ENEC, INEGI. Seasonally adjusted by Banco de México, except for the total.

Box 2
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 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]

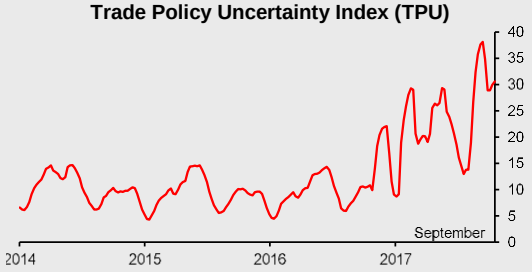
It is natural to assume that the rise in uncertainty varies across states. In particular, it is likely that trade-related uncertainty has increased more in states that are more integrated in global markets, and, in particular, with the U.S. The methodology to estimate the trade policy uncertainty allows 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.

[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.

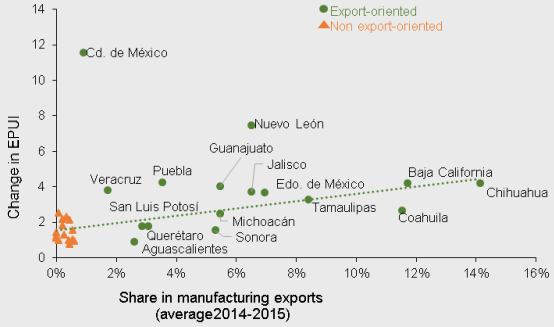
[3] An increase in the TPU index is assumed to have a negative connotation, given that, under the current conditions, during the analyzed period it is appropriate to assume that internet searches of the terms included in the elaboration of the index fundamentally reflect a greater concern over the future 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 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.

[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, 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

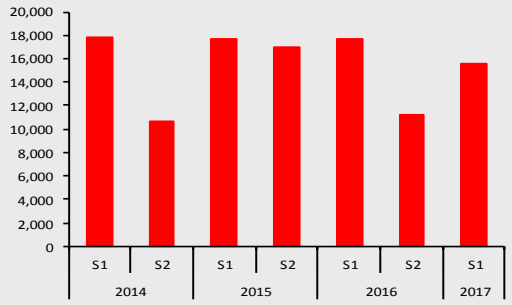
Note: The model was estimated based on quarterly figures between 2014-I and 2017-I. Standard errors are grouped at the state level and reported in parenthesis. Statistical significance codes: * *p<0.10, ** p<0.05, *** p<0.01.*

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).

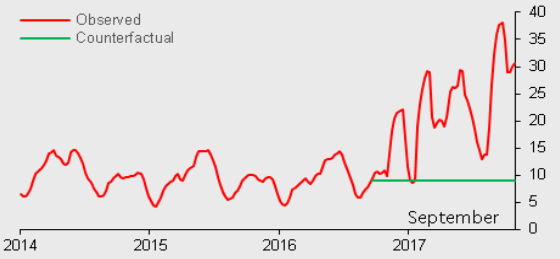
The result of this exercise suggests that higher uncertainty has discouraged FDI flows to Mexico. In particular, it is estimated that the uncertainty observed during the second half of 2016 and until the third quarter of 2017 lowered FDI flows to the country by approximately USD 4.4 billion with respect 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



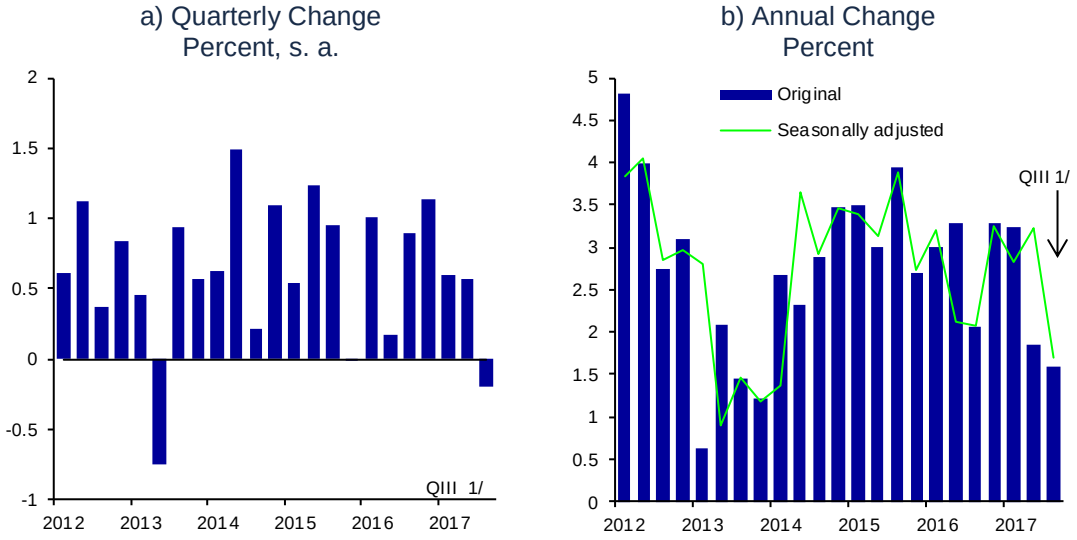
Note: The TPU index is constructed based on the results of the Google Trends for the searches of the following terms: "NAFTA", "TLCAN", "NAFTA Trump", "*TLCAN Trump México*", "*Renegociación NAFTA*", "*tarifa*", "*libre comercio*", "*¿Qué es NAFTA?*". The EPUI at the national level is shown.
Source: 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 26). 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 26
Gross Domestic Product



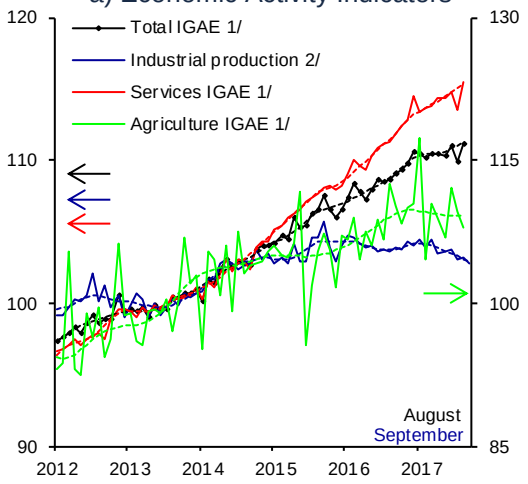
s. a. / Seasonally adjusted data.
1/ The figure corresponding to the third quarter of 2017 refers to the timely estimation of quarterly GDP released by INEGI.
Source: Mexico's National Accounts System, INEGI.

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 27a). 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 28a and Chart 28b). Meanwhile, mining-related services seem to have stopped declining, although they remain low.

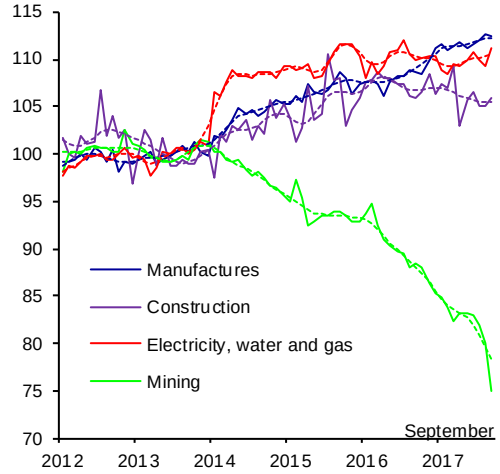
Chart 27
Production Indicators
Index 2013=100, s. a.

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



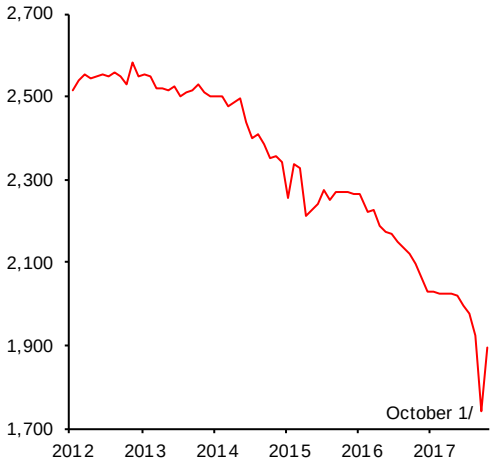
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

ii. Similarly, in the period July – September the construction industry remained weak (Chart 27b). 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 27b). In particular, in line with the dynamism of automotive exports, the subsector of transport equipment maintains a growing trajectory, while the aggretate 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 29).

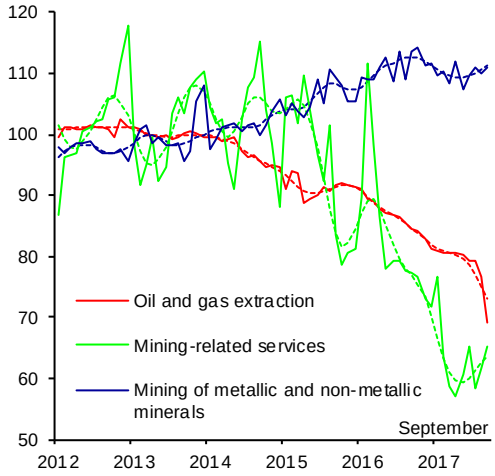
Chart 28
Oil Production Platform and Mining Sector

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

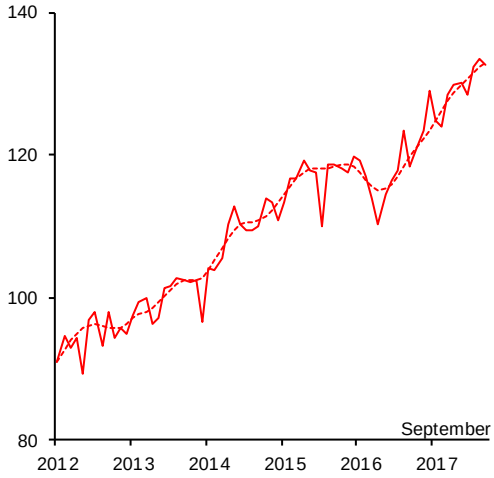
b) Mining Sector Components
Index 2013=100, s. a.



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

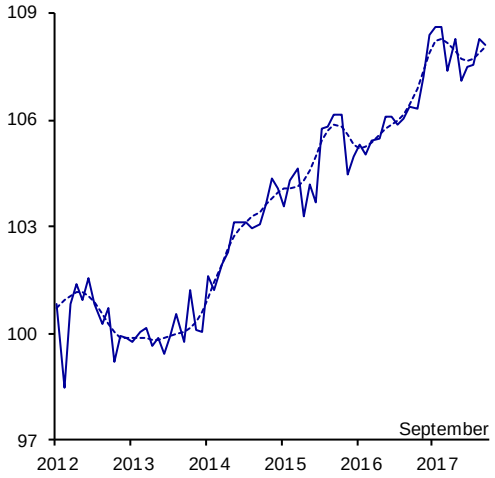
Chart 29
Manufacturing Sector
Index 2013=100, s. a.

a) Transport Equipment Manufacturing Subsector



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.

b) Manufacturing Subsector Excluding Transport Equipment

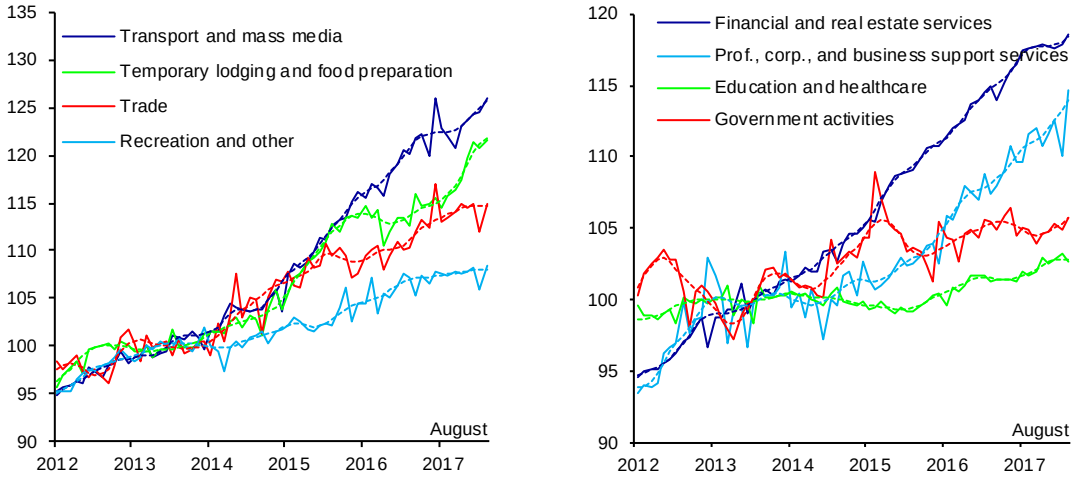


s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Prepared and seasonally adjusted by Banco de México with data from the Monthly Industrial Activity Indicator, Mexico's National Accounts System (SCNM), INEGI.

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 30).

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 30
IGAE of the Services Sector
Index 2013=100, s. a.



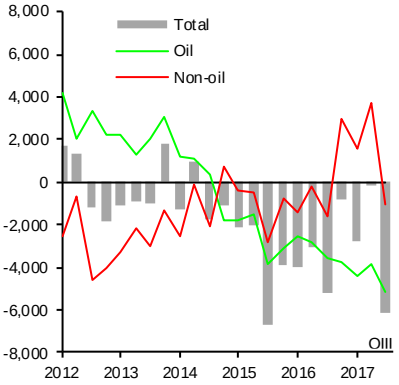
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: Mexico's National Accounts System (SCNM), INEGI.

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 31b and Chart 31c). 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 31a). 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.

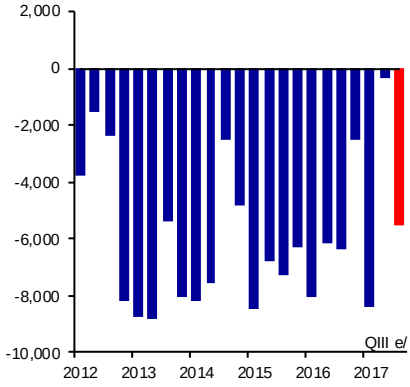
Chart 31
Trade Balance and Current Account

a) Trade Balance
USD millions



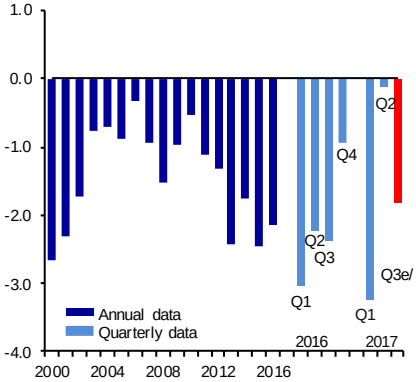
Source: SAT, SE, Banco de México, INEGI. Merchandise Trade Balance. SNIEG. Information of National Interest.

b) Current Account
USD millions



e/ Estimated by Banco de México.
Source: Banco de México.

c) Current Account
Share of GDP



e/ Estimated by Banco de México.
Source: Banco de México and INEGI.

3.2.2. Labor Market

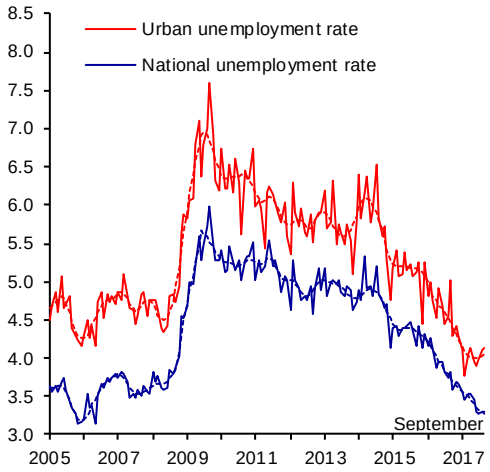
Labor market conditions have been tightening and it seems that there is no slack in it (Chart 32). Indeed, in the third quarter of 2017 the national unemployment rate lied at particularly low levels, and continues to show a decreasing trend. Similarly, the urban unemployment rate also remained at low levels, although it would seem to have stopped decreasing, while the labor participation rate presented a certain downward trend so far this year.[5] 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.[6]

[5] 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.

[6] 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.

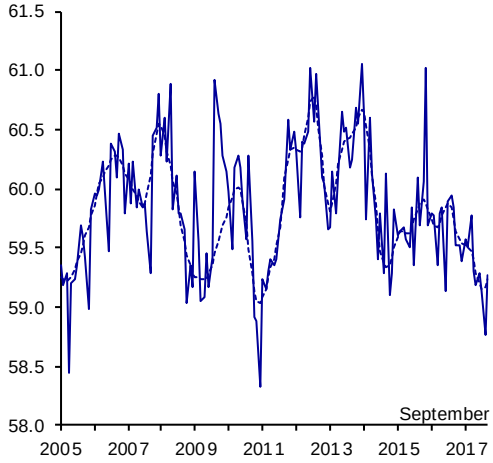
Chart 32
Labor Market Indicators

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



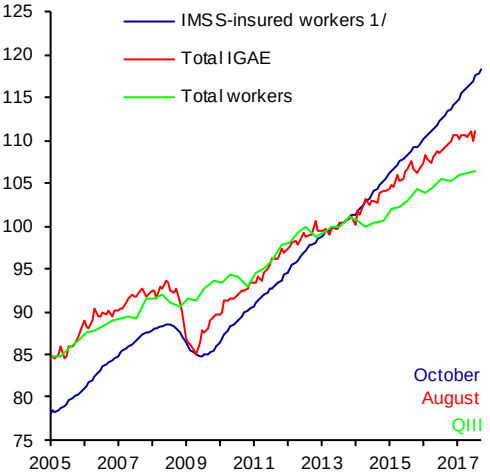
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
Source: National Employment Survey (ENOE), INEGI.

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



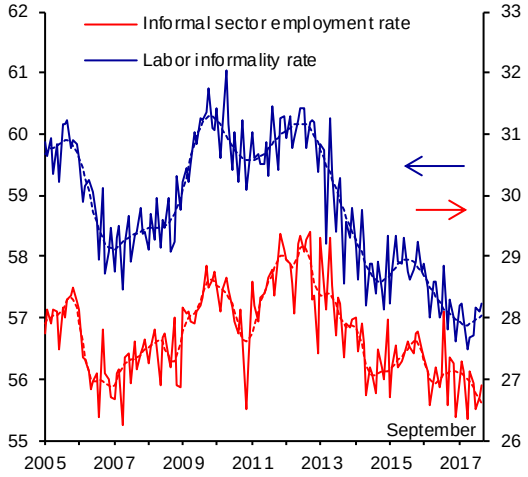
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ Percentage of Economically Active Population (EAP) with respect to the population of 15 years and older.
Source: National Employment Survey (ENOE), INEGI.

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.



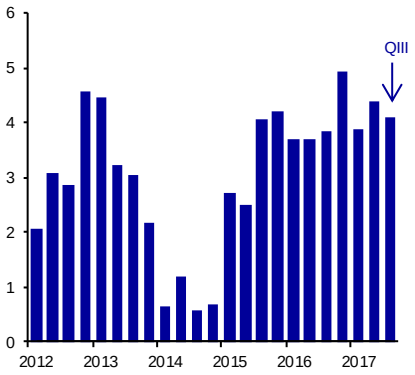
s. a. / Seasonally adjusted and trend data. The former is represented by a solid line, the latter by a dotted line.
1/ It refers to individuals working in non-agricultural economic units, operating with no accounting records and with households' resources.
2/ It includes workers who, besides being employed 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 33). In particular, the annual change rate of the average wage of salaried workers in the economy was

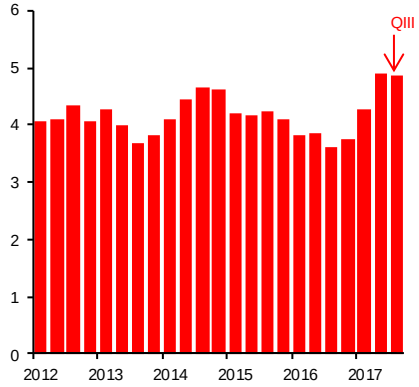
4.1 percent in the period of July – September 2017. In turn, the daily wage associated to IMSS-affiliated workers presented an annual increase of 4.9 percent, while the growth rate of contractual wages negotiated by firms under federal jurisdiction was, on average, 4.5 percent. It should be noted that 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 33
Wage Indicators
Annual change in percent

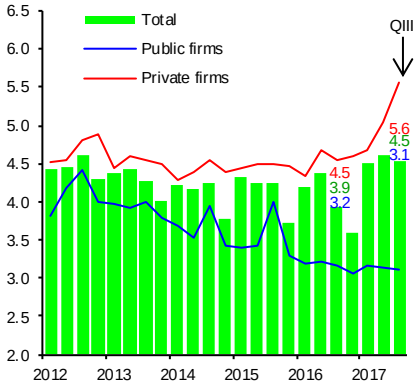
a) Average Wage of Salaried Workers according to National Employment Survey 1/



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 [7]

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 34a). The low growth of the sources of financial resources was offset by a lower dynamism of the uses of the said resources (Chart 34b). 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 to the average observed over the last 5 years (5.5 percent), which principally

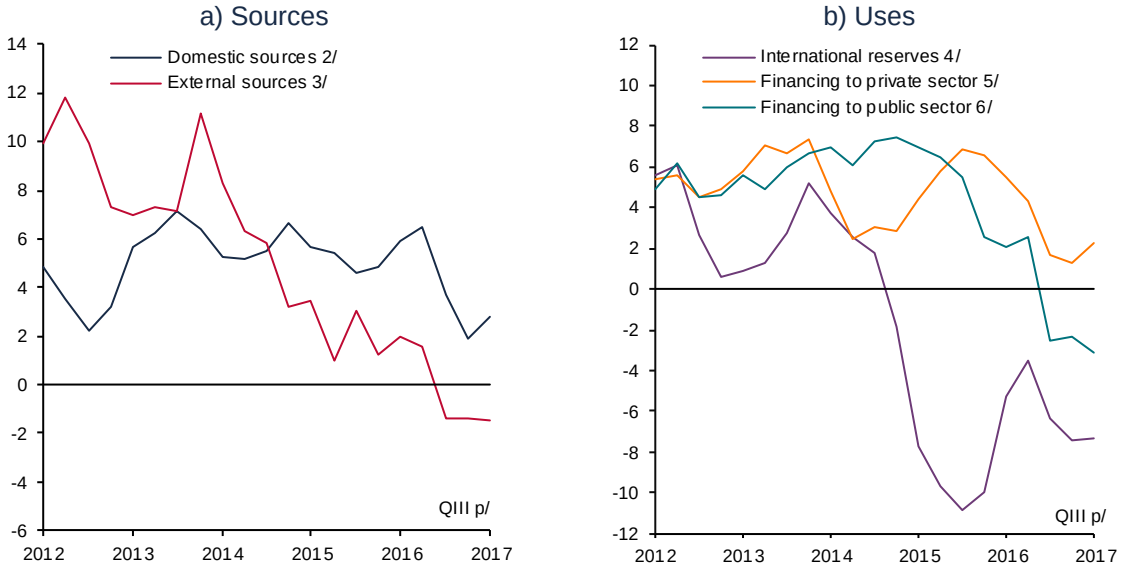
[7] In this section, unless otherwise stated, growth rates are expressed in real annual terms and are calculated based on stocks adjusted due to the exchange rate and asset price variations.

reflects the impact of higher inflation on growth in real terms of the balance of financial assets. However, this growth was greater tha the 1.9 percent registered in the second quarter, which was brought about by the higher dynamism in its voluntary component (Chart 35a and Chart 35b). 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 34a). 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 35c). 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 36a). 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.[8]

[8] 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.

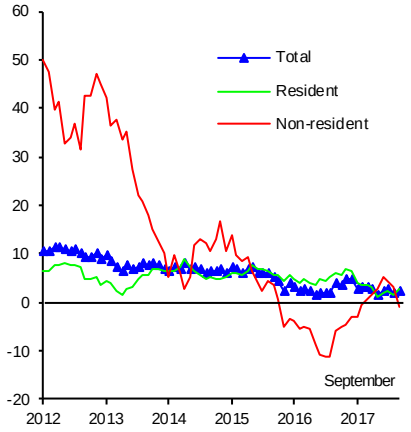
Chart 34
Total Funding of the Mexican Economy (Sources and Uses)
Real annual change in percent 1/



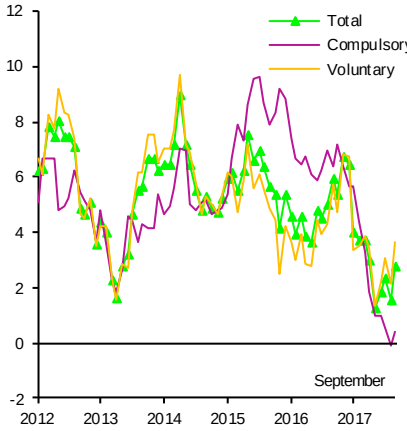
p/ Preliminary data.
1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variation.
2/ It includes the monetary aggregate M4 held by residents.
3/ It includes the monetary aggregate M4 held by non-residents, foreign financing for the federal government, 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 35
Monetary Aggregate M4 [1/]

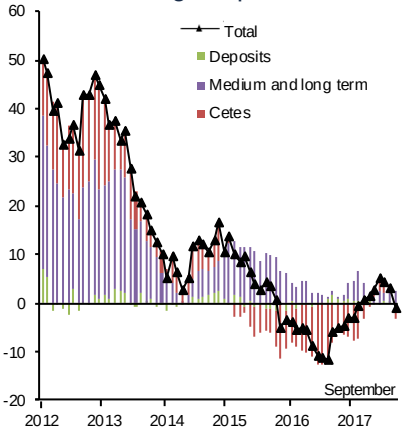
a) Total
Real annual change in percent



b) Held by Residents
Real annual change in percent



c) Held by Non-residents
Contribution to the real annual change in percent

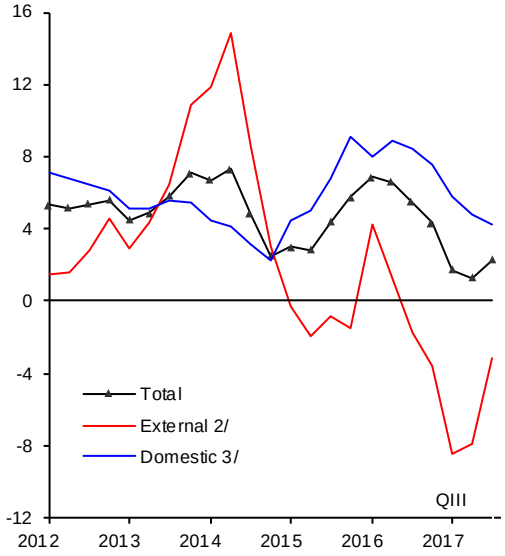


1/ Real annual changes are calculated based on balances adjusted due to exchange rate and asset price variations.
Source: Banco de México.

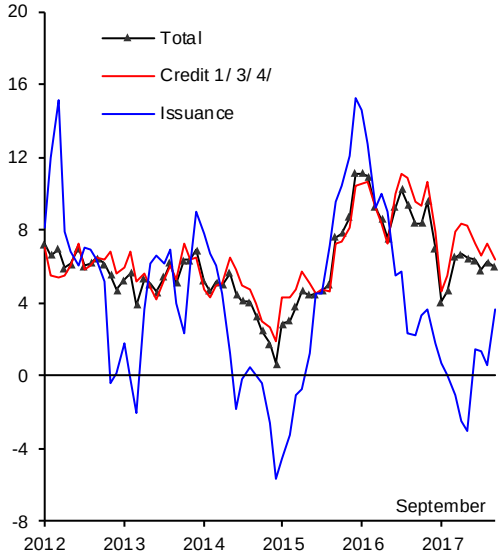
Total financing to non-financial private sector kept growing at a relatively low rate, albeit higher than in the previous quarter. In particular, between the second and the third quarters of 2017, its real annual change shifted from 1.3 to 2.3 percent (Chart 36a). To this larger rate of expansion, at 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 36
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

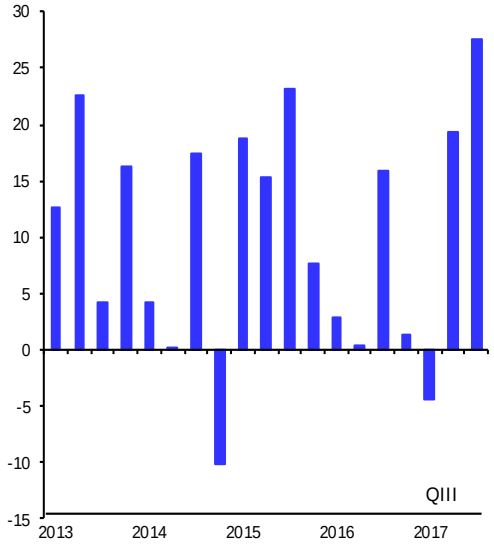


1/ Real annual changes are calculated based on balances adjusted due to exchange rate variations.
2/ Data of foreign financing for the third quarter of 2017 are preliminary.
3/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
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.

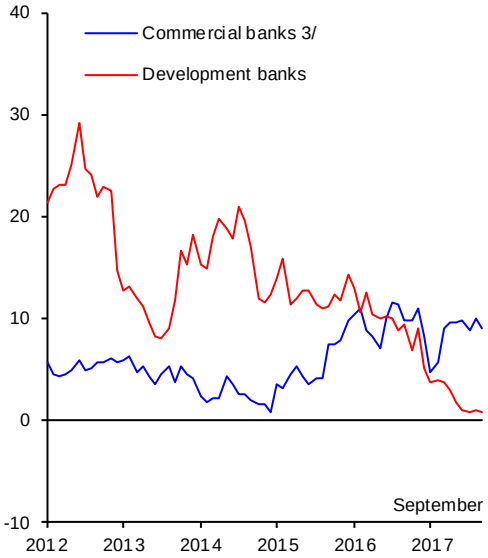
i. Domestic financing to private firms kept expanding with dynamism. In the reference quarter its growth rate was 6.0 percent, a figure that is similar to 6.3 percent registered in the previous quarter (Chart 36b). Within it, above all an important recovery of the domestic debt market was notable, as the net placement of medium-term securities in the quarter has turned out to be the highest on record (Chart 37a). Meanwhile, commercial banks' credit to firms kept growing at relatively high rates, which contrasts with the low dynamism in the development banks' credit (Chart 37b). 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 38).

Chart 37
Domestic Financing to Non-financial Private Firms

a) Net Placement of Medium-term Securities [1/]
MXN billion



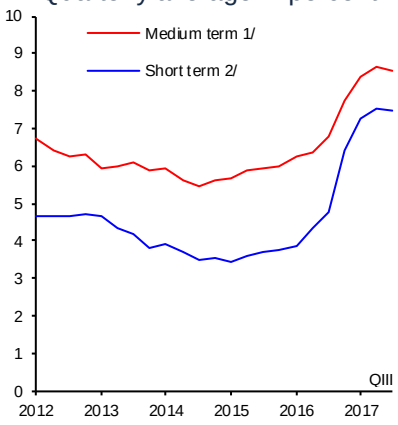
b) Performing Credit [2/]
Real annual change in percent



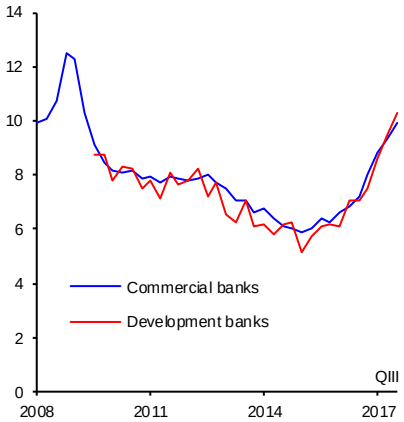
1/ Placements excluding amortizations (maturities and prepayments) in the quarter.
2/ Real annual changes are calculated based on stock adjusted due to exchange rate variations.
3/ It includes Sofomes ER subsidiaries of bank institutions and financial groups. Data are adjusted so as not to be affected by the transfer of bridge loans.
Source: Banco de México.

Chart 38
Annual Interest Rates and Delinquency Rates of Non-financial Private Firms

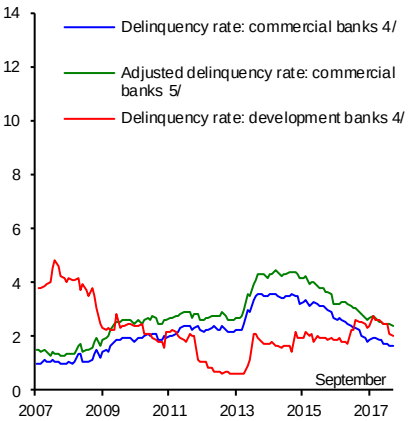
a) Interest Rates of Private Securities
Quarterly average in percent



b) Interest Rates of New Credits [3/]
Quarterly average in percent



c) Delinquency Rates
Percent

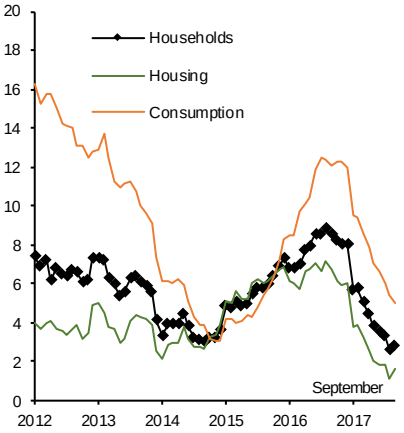


1/ Average weighted yield to maturity of issuances in circulation, with a term over 1 year, at the end of the month.
2/ Average weighted rate of private debt placements, at a term of up to 1 year, expressed in a 28-day curve. It only includes stock exchange certificates.
3/ It refers to the interest 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.

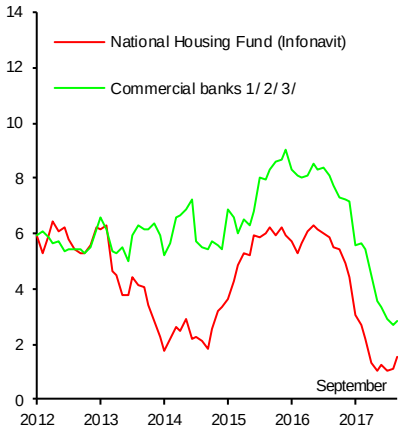
ii. The growth rate of credit to households continued to moderate in all its segments. In the reported period, this portfolio expanded at a real annual rate of 2.8 percent, below the growth of 3.5 percent in the second quarter of 2017 (Chart 39a). In the housing credit market, in particular, relatively 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 39b).[9] 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 39c).

Chart 39
Credit to Households

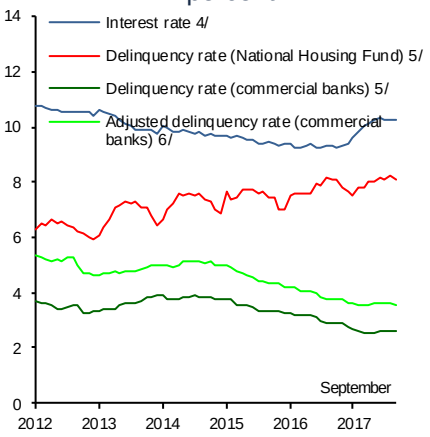
a) Total Credit [1/]
Real annual change in percent



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

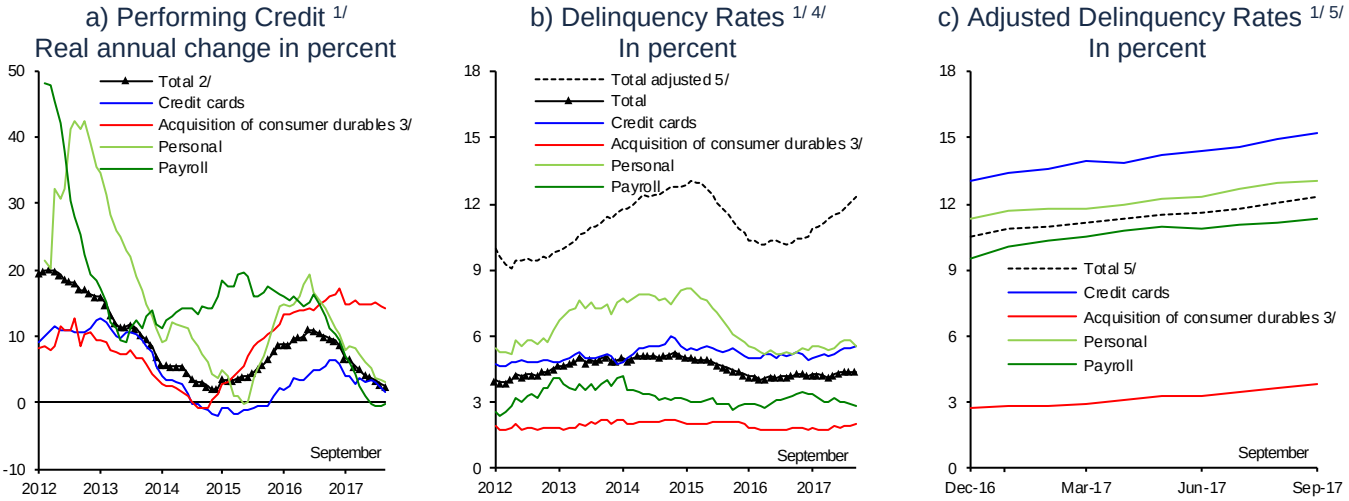


1/ These data are adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics.
2/ It includes the Sofomes ER subsidiaries of bank institutions and financial groups.
3/ Figures are adjusted in order to avoid distortions by the transfer and the reclassification 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.
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 40b and Chart 40c).

[9] 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 40
Commercial Bank Consumer Credit



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 2). 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 2
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 41a). 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 3). 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 3
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,

[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.

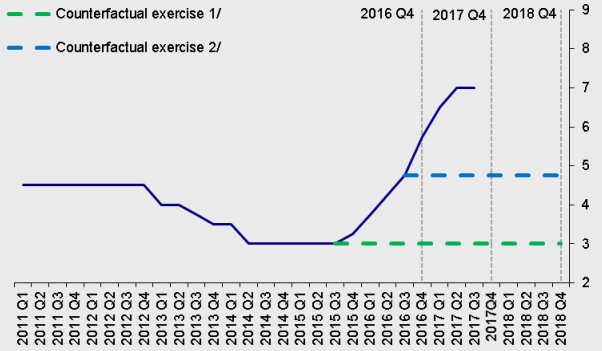
among which the following should be listed: in January, the rise in the minimum wage and an increase in energy prices, as a result of the liberalization process, above all the one corresponding to gasolines and LP gas. Subsequently, the abovedescribed shocks were accompanied by the rebound in some agricultural 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

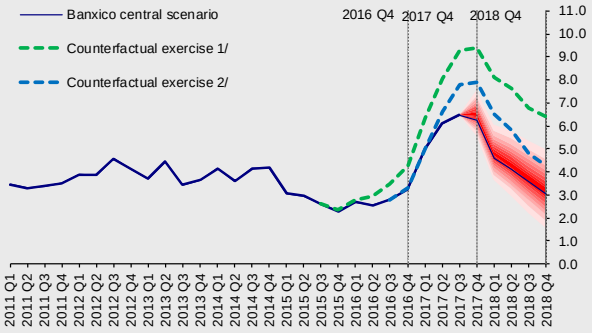


The effects of assuming a passive monetary policy in line with the above described counterfactual exercises can be appreciated in Chart 2. If the reference rate had been maintained at 3 percent from the end of 2015 to date (Counterfactual Exercise 1), headline inflation would have presented a more pronounced 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).

[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.

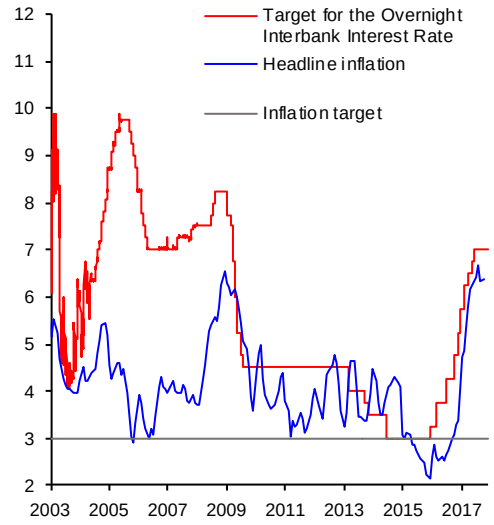
However, it is important to stress that the interpretation of the results presented hereby should be taken with caution, as the type of the models from which they derive assumes that economic agents make decisions based on rational expectations. This implies, in the case of counterfactual exercises, 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 41b).[10]

[10] 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.

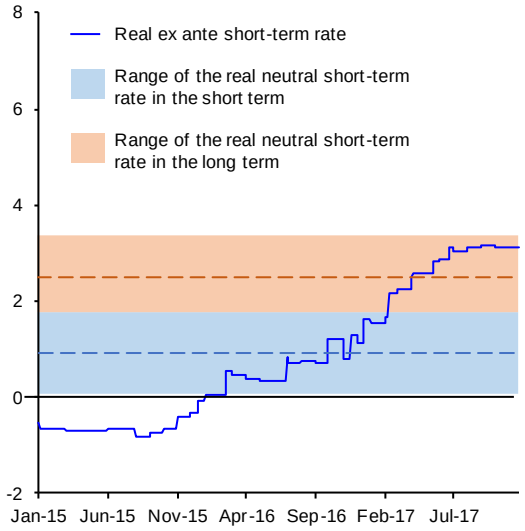
Chart 41
Target for the Overnight Interbank Interest Rate, Headline Inflation and Real Ex ante Rate
Annual percent

a) Target for the Overnight Interbank Interest Rate and Headline Inflation 1/



1/ The Overnight Interbank Interest Rate is shown until January 20, 2008. The latest inflation figure corresponds to October.
Source: Banco de México.

b) Real Ex ante Short-term Rate and Estimated Ranges for Real Neutral Short-term Rate in the Short and Long Terms 1/



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.

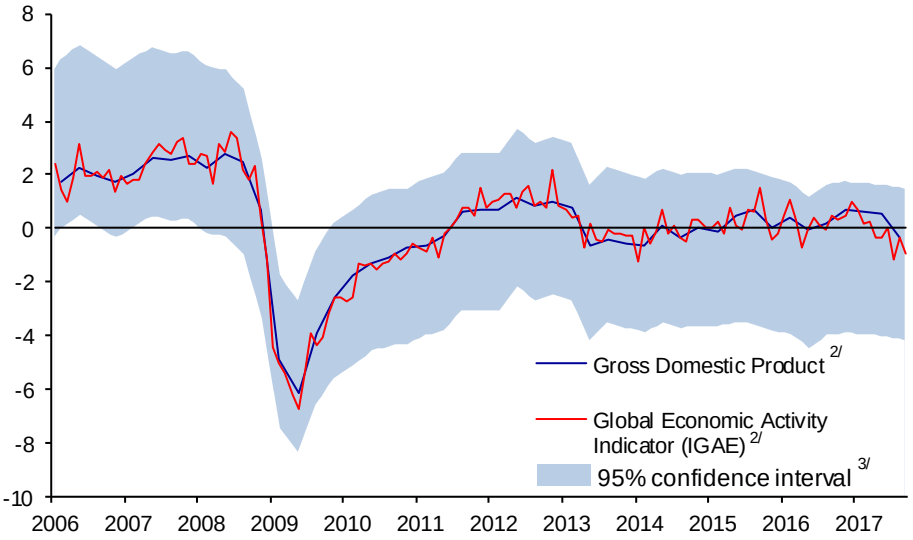
ii. Inflation expectations continue reflecting a temporary inflation increase. Although the median of inflation expectations based on surveys conducted by Banco de México for the end of 2017 has been adjusted upwards during the year, recently no changes have been observed. In addition, the one corresponding to the end of 2018 has persisted at 3.8 percent, while that for 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 42). Meanwhile, labor market conditions have been tightening, so that no slack seems to be present in thatmarket. 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 43a and Chart 43b). 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 44a and Chart 44b).

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.

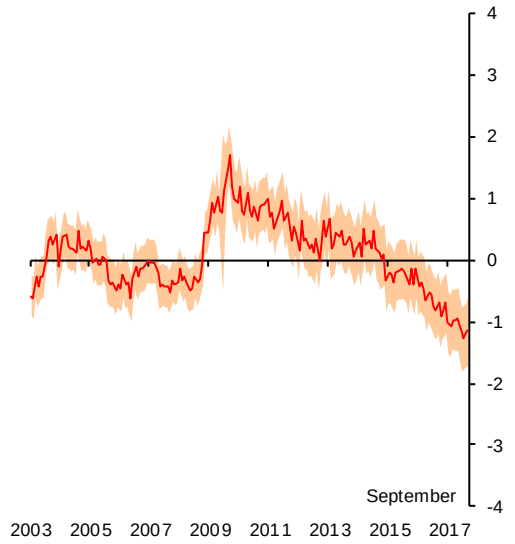
Chart 42
Output Gap Estimate 1/
Percentage of potential output, s. a.



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 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.

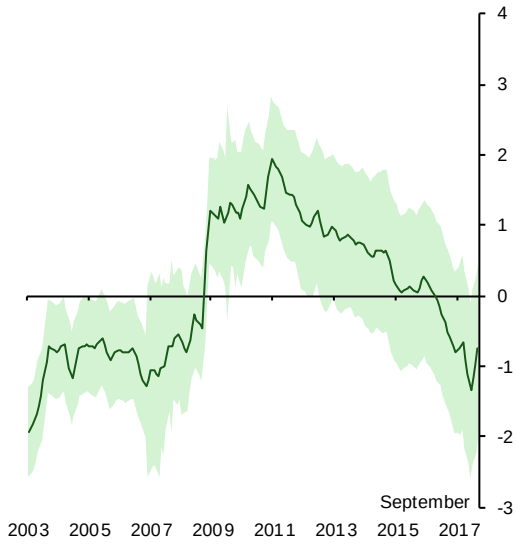
Chart 43
Estimate of the Unemployment Gap
Percent, s. a.

a) Unemployment Rate 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.

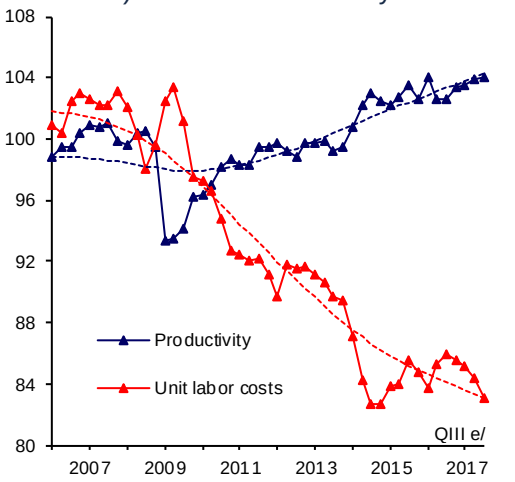
b) Unemployment Rate and Informal Wage Workers 1/



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.

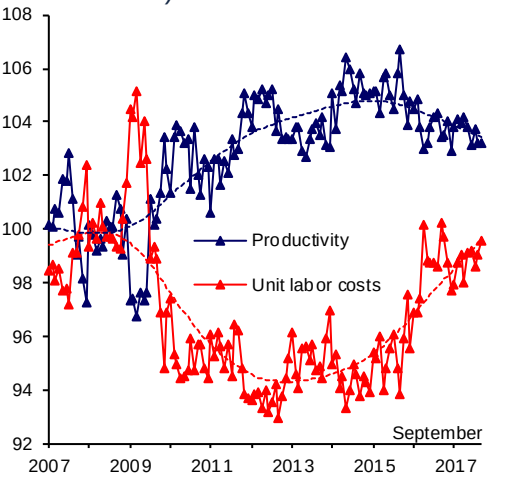
Chart 44
Productivity and Unit Labor Cost
Index 2008=100, s. a.

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 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.

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 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:

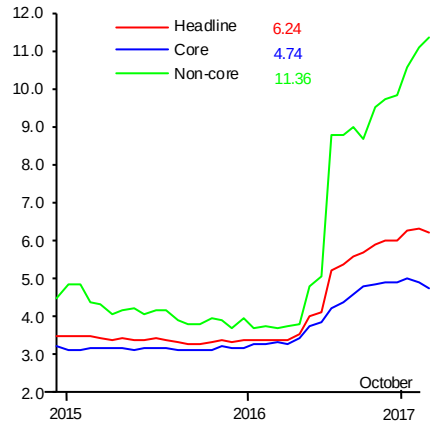
i. The median of headline inflation expectations for the end of 2017 increased from 6.00 to 6.24 percent between June and October, although it is noteworthy that between August and October it remained unchanged (Chart 45a).[11] In turn, the median of the core component was adjusted downwards from 4.90 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.[12] 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 45b).

iii. Longer-term expectations remained anchored around 3.5 percent (Chart 45c). [13]

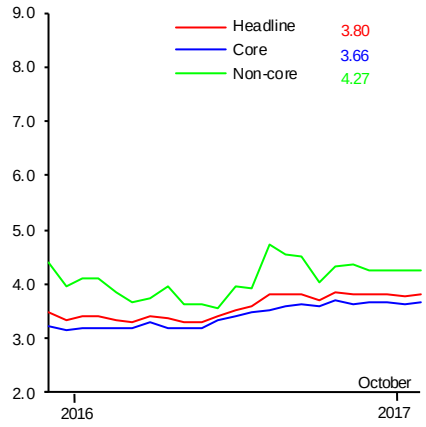
Chart 45
Inflation Expectations
Percent

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



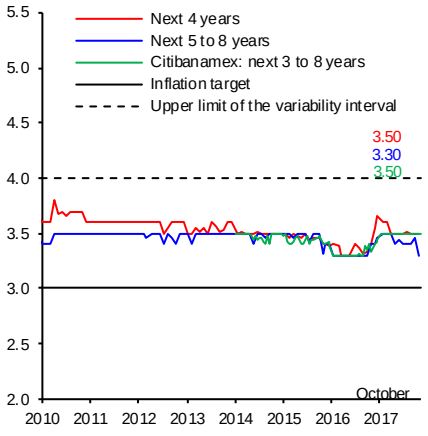
Source: Banco de México's Survey.

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



Source: Banco de México's Survey.

c) Medians of Headline Inflation Expectations for Different Terms



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

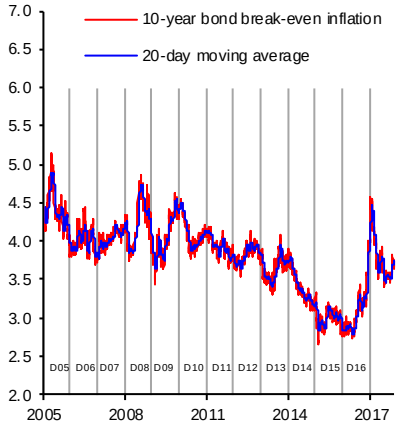
As regards the break-even inflation (the difference between long-term nominal and real interest rates), despite a moderation throughout most of the reference period, it increased from 3.65 to 3.70 percent between June and October (Chart 46a). As regards its components, it stands out that, on the one hand, long-term inflation

[11] 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.
[12] 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.
[13] 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.

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 46b). Meanwhile, the estimate of the 10-year inflation risk premium declined from 24 to 21 basis points between June and October 2017 (Chart 46c).[14]

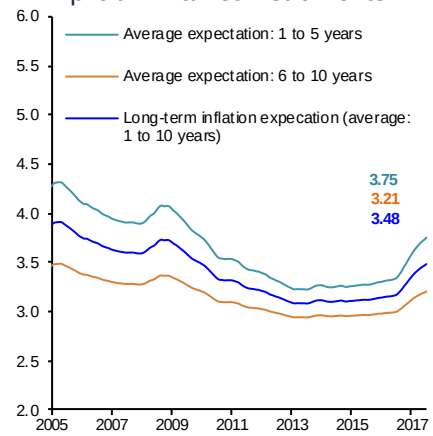
Chart 46
Inflation Expectations
Percent

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



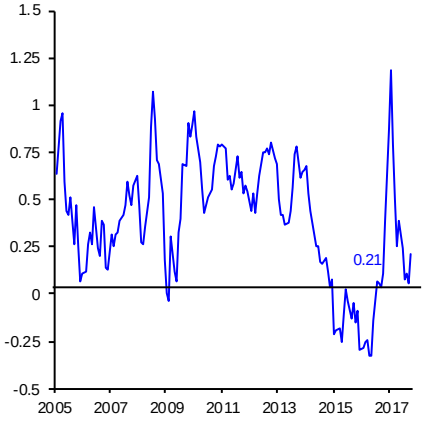
Source: Estimated by Banco de México with data from Valmer and Bloomberg.

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 47a and Chart 47b). 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 47a).

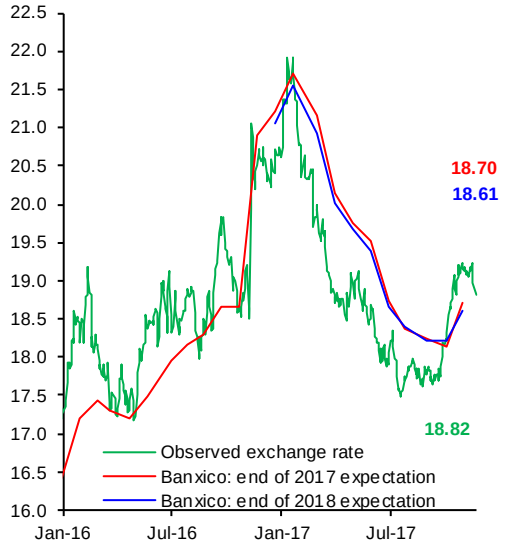
In light of an episode of higher volatility over the last weeks, on October 25 the Foreign Exchange Commission announced an increment of USD 4 billion in non-

[14] 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.

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.

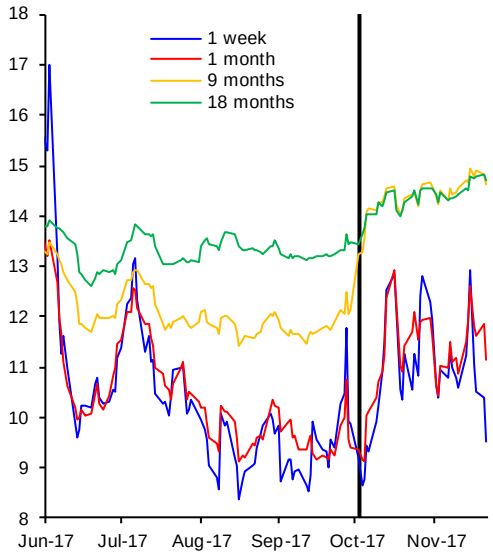
Chart 47
Exchange Rate and Implied Volatility

a) Nominal Exchange Rate 1/
MXN/USD



1/ The observed rate is the daily FIX exchange rate. Expectations correspond to the average of the October survey by Banco de México.
Source: Banco de México.

b) Implied Volatility in FX Options 1/
Percent

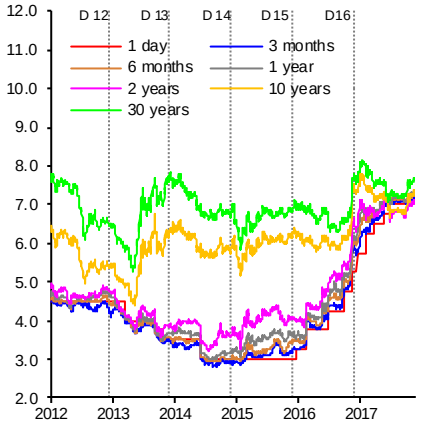


1/ The black vertical line indicates October 2, 2017, 9 months prior to the 2018 federal elections.
Source: Bloomberg.

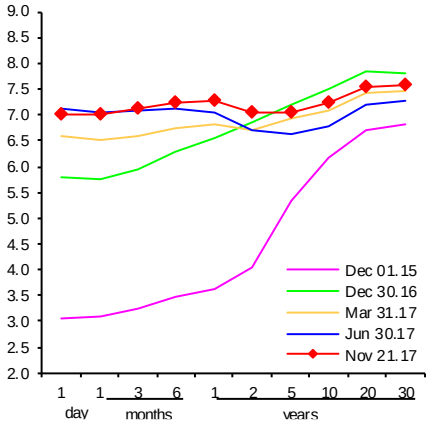
Interest rates for all terms increased. In particular, short-term ones rose moderately, while longer-term ones, especially 2 year and over, registered more considerable increments. In this sense, between the end of June and mid-November 2017, the 3-month interest rate went up by 5 basis points, from 7.05 to 7.1 percent, the 2-year interst 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 48a and Chart 48b). 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 48c).

Chart 48
Interest Rates in Mexico

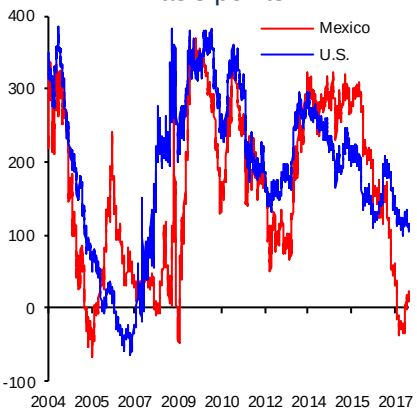
a) Government Bond Interest Rates
Percent



b) Yield Curve
Percent



c) Slope of the Yield Curve
Basis points

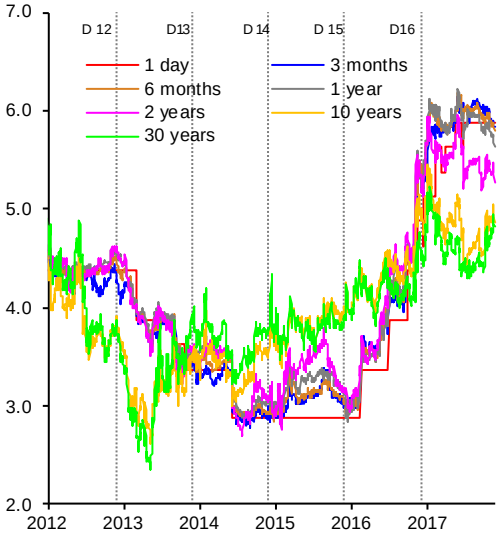


Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

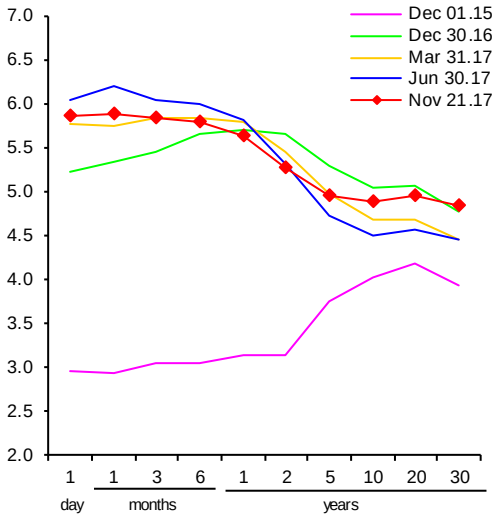
Consistent with the above performance, and given that short-term interest rates in the U.S. grew more than the domestic ones, the respective spreads between Mexico and the U.S. declined. In turn, medium- and long-term interest rate spreads expanded in view of the increase of a lower magnitude in the 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 49a and Chart 49b).

Chart 49
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

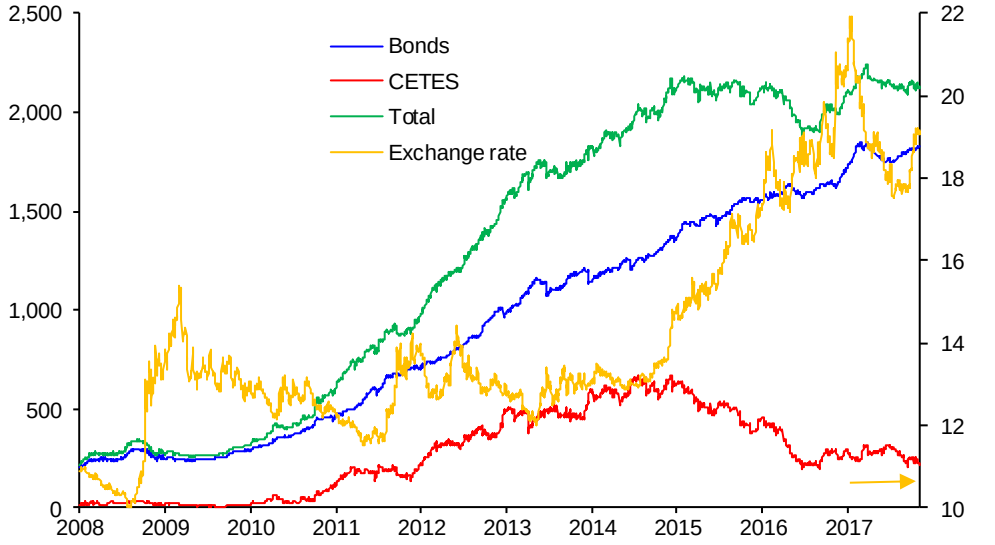


1/ For the U.S. target rate, an average interval considered by the Federal Reserve is considered.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Department of the Treasury.

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 50). 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 50
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 51a). As in the previous Report, for the forecast horizon an increasingcontribution 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.[15] 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 51b).

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

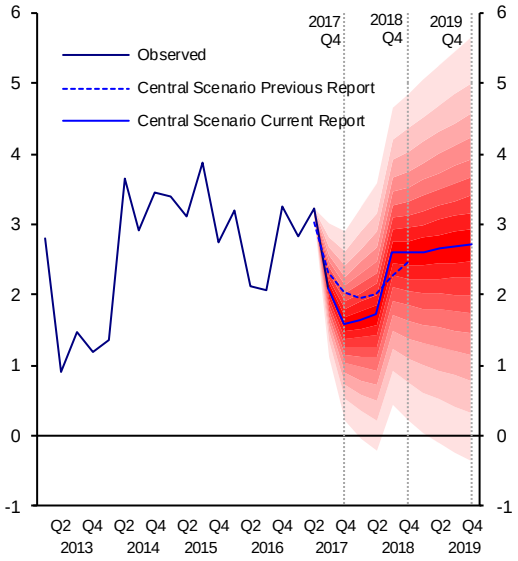
[15] The expectations for the U.S. industrial production in 2017 and 2018 are based on the consensus among business analysts surveyed by Blue Chip in November 2017. In particular, in 2017 and 2018 this indicator is anticipated to grow by 1.6 and 2.3 percent, respectively. These figures are compared to 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).

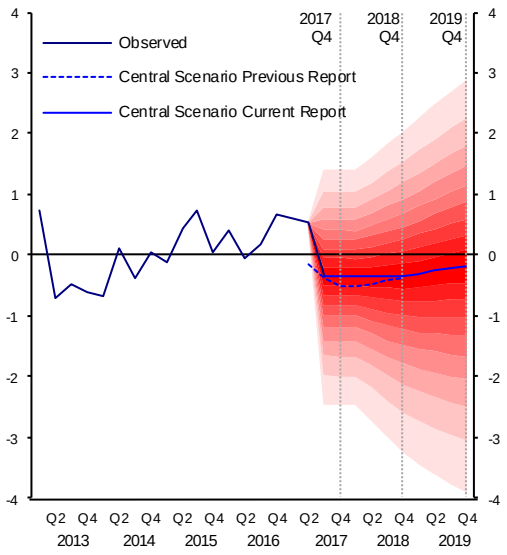
Chart 51
Fan Charts: GDP Growth and Output Gap

a) GDP Growth, s. a.
Annual percent



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

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



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 52 and Chart 53). 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:

i. 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.

ii. That prices of some agricultural goods increase, even though their impact onto inflation would be transitory.

iii. That considerable upward pressures onto the prices of some energy products, especially LP gas, continue, as it has been recently observed.

iv. 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:

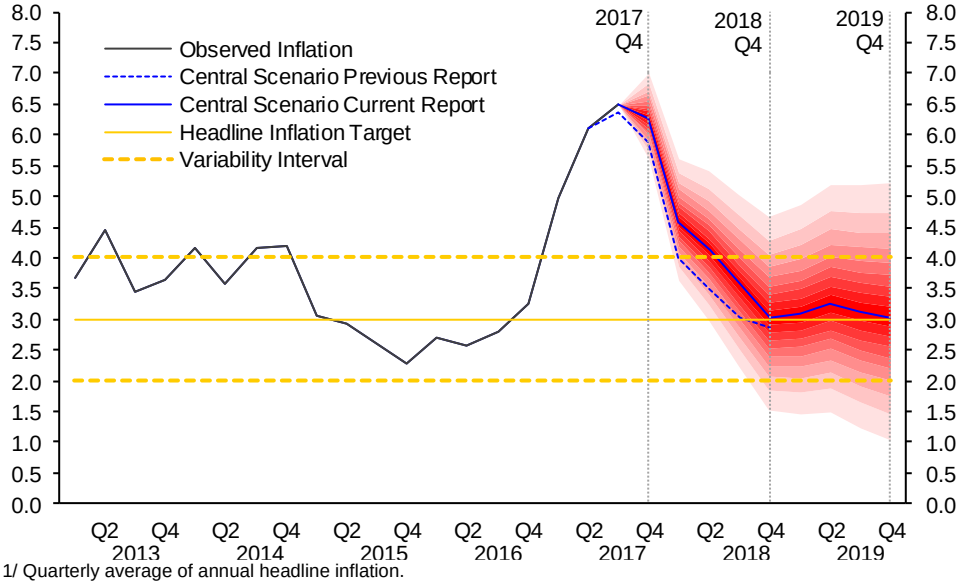
i. That a more favorable environment related to the outcome of the NAFTA negotiations leads to the appreciation of the national currency.

ii. That the structural reforms contribute to further reductions in different prices of the economy.

iii. That economic activity observes a lower-than-anticipated dynamism.

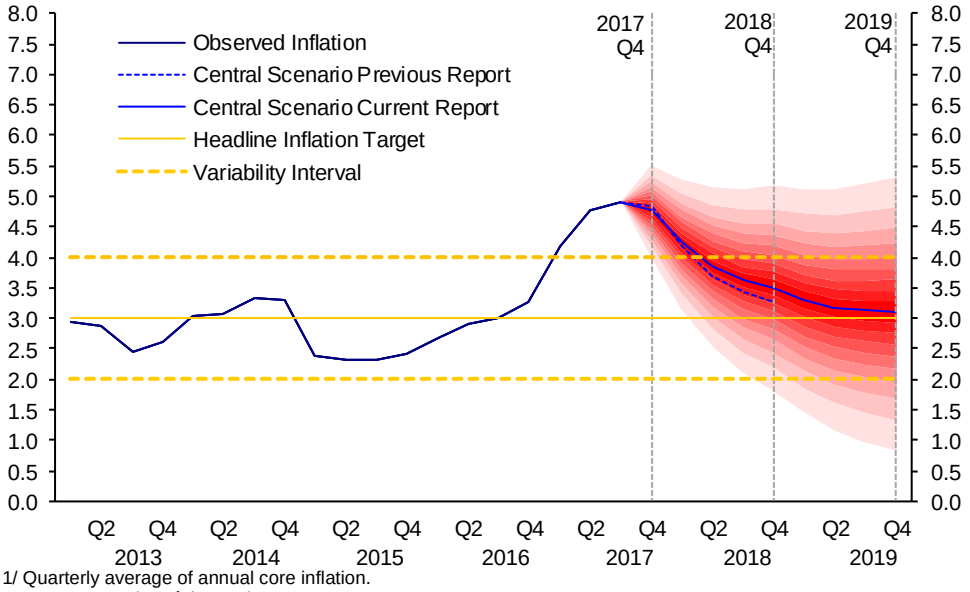
Given that some upward risks have been gaining relevance, it is considered that the balance of risks related to the inflation trajectory expected by this Central Institute has deteriorated and exhibits an upward bias in the horizon in which monetary policy operates.

Chart 52
Fan Chart: Annual Headline Inflation [1/]
Percent



1/ Quarterly average of annual headline inflation.
Source: Banco de México and INEGI.

Chart 53
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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November 2017

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