Outlook for the Mexican Economy

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April, 2018

BANCO DE MÉXICO

Outline

|	
1	**External Conditions Current Outlook**

2	**Monetary Policy and Inflation Determinants in Mexico**

2.1	**Evolution of Economic Activity**

|	
2.2	**Recent Monetary Policy and Inflation**

Global activity has recovered, both in advanced and emerging economies. For 2018 and 2019, global output is expected to show a stronger expansion.


GDP Growth Forecasts
Annual % change

April 2018
October 2017

Forecasts

Emerging

World

Advanced
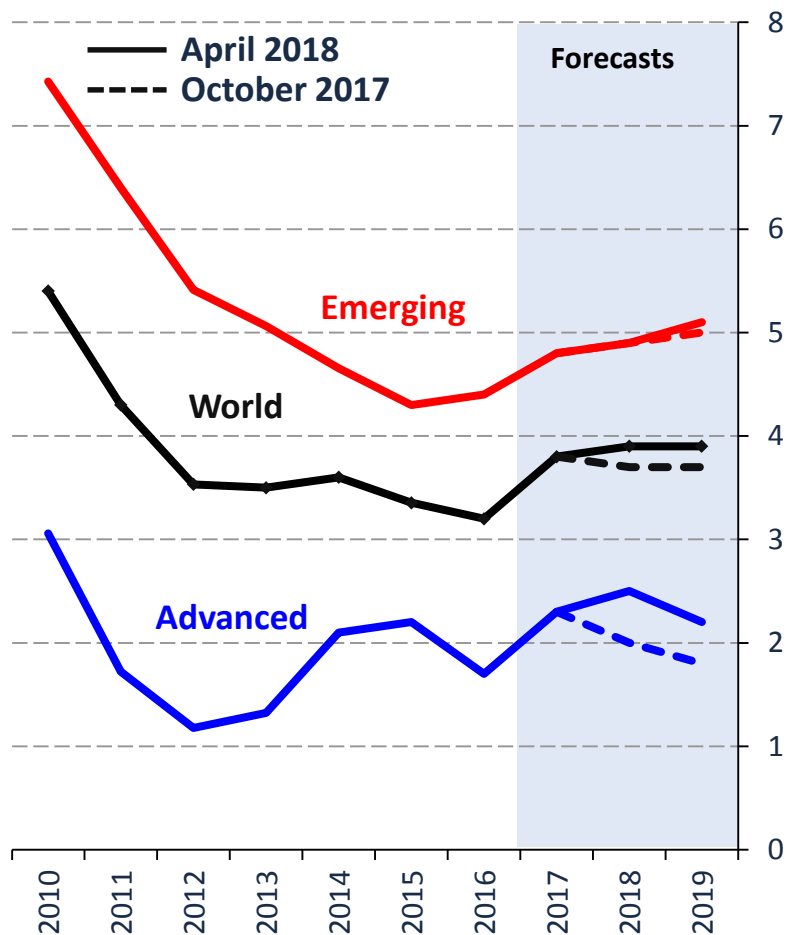
Source: IMF, WEO October 2017 and April 2018.

G4: 2018 and 2019 GDP Growth Forecasts
Annual % change

April 2018
October 2017

U.S.   Eurozone   Japan   U.K.
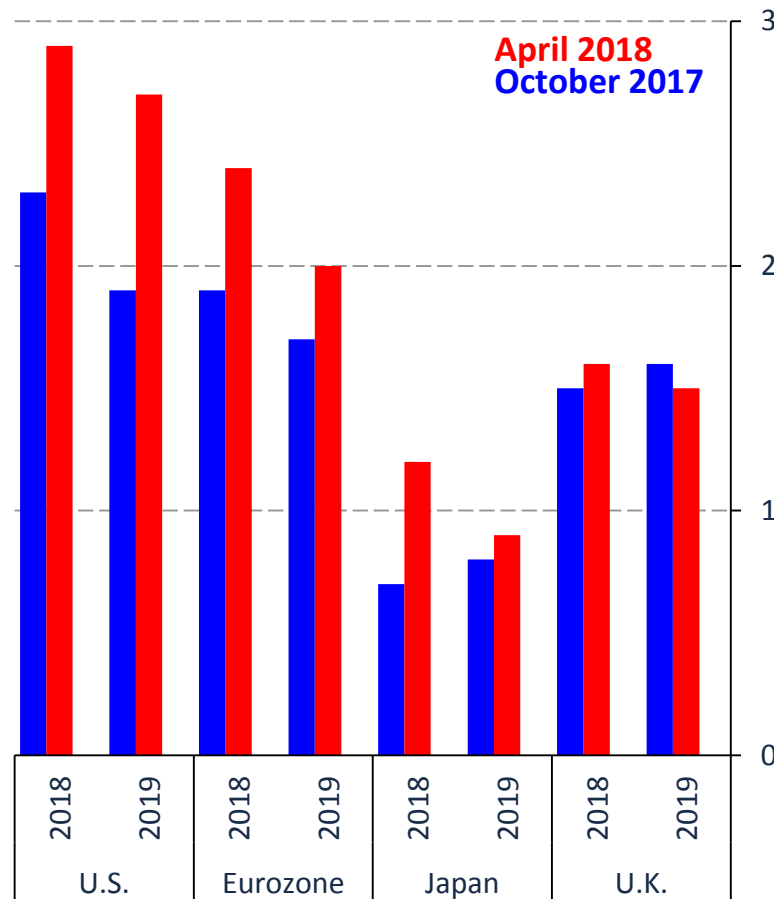
Source: IMF, WEO October 2017 and April 2018.

Emerging Economies: 2018 and 2019 GDP Growth Forecasts
Annual % change

April 2018
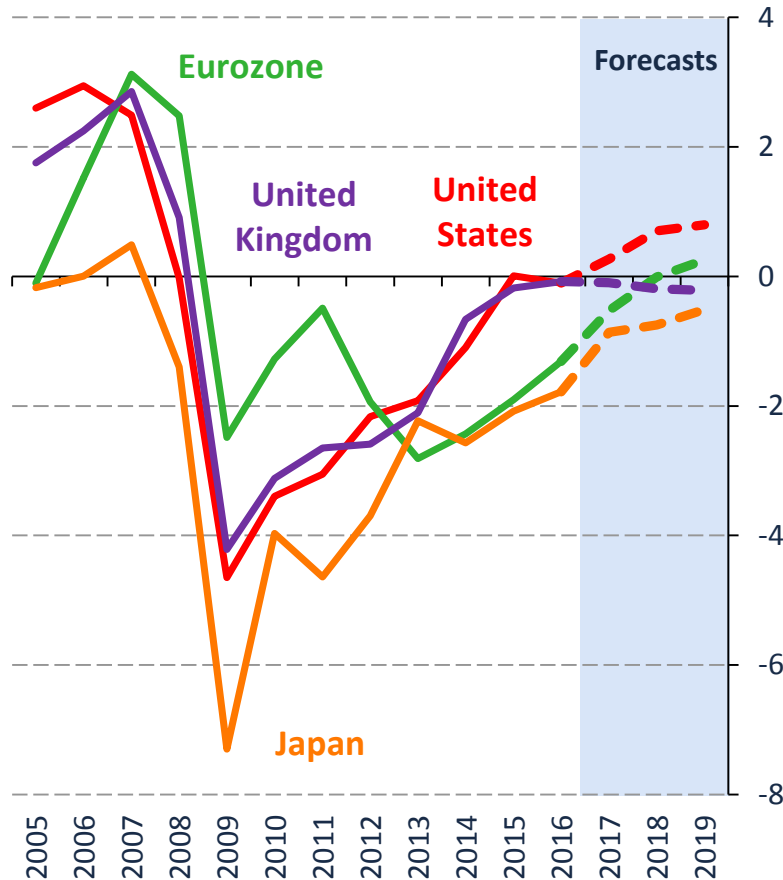October 2017

India   China   Russia   Brazil   Mexico
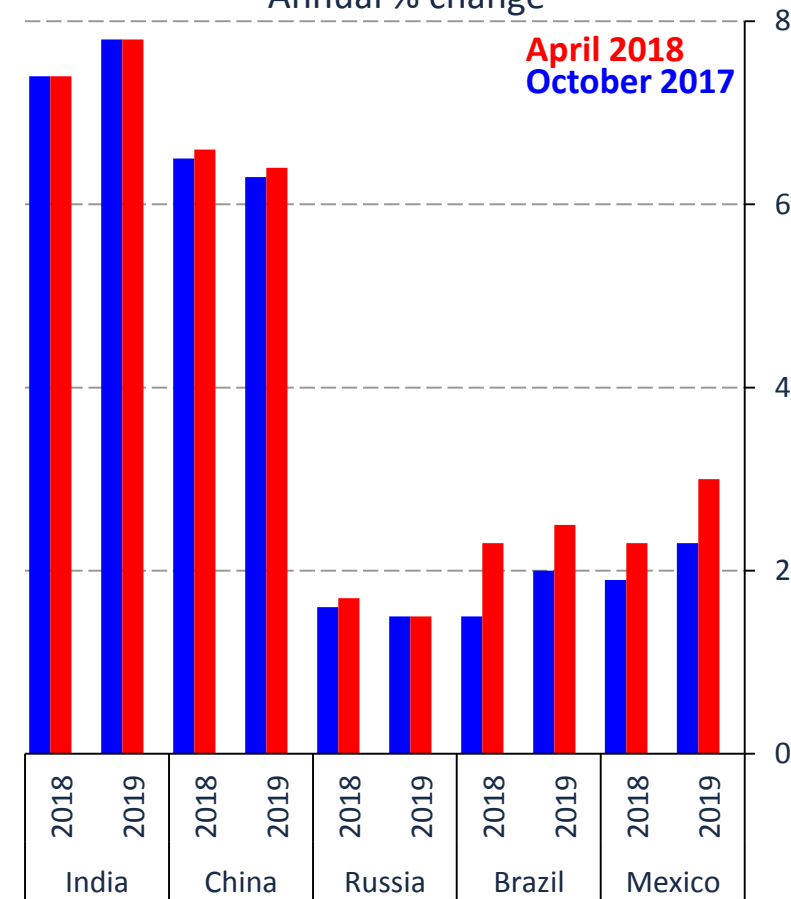
Source: IMF, WEO October 2017 and April 2018.

Decreasing slack in advanced economies has led to a gradual rise of inflation and inflation expectations. Nonetheless, both indicators remain below central banks' targets.

Advanced Economies

Output Gap [1]
% of potential GDP

Eurozone

Forecasts

United Kingdom

United States

Japan

Unemployment Gap
%

January
February
March

United States

United Kingdom

Eurozone

Japan

G7: Evolution and Analysts' Forecasts of Headline and Core inflation
%

Mar-2018 Forecast*
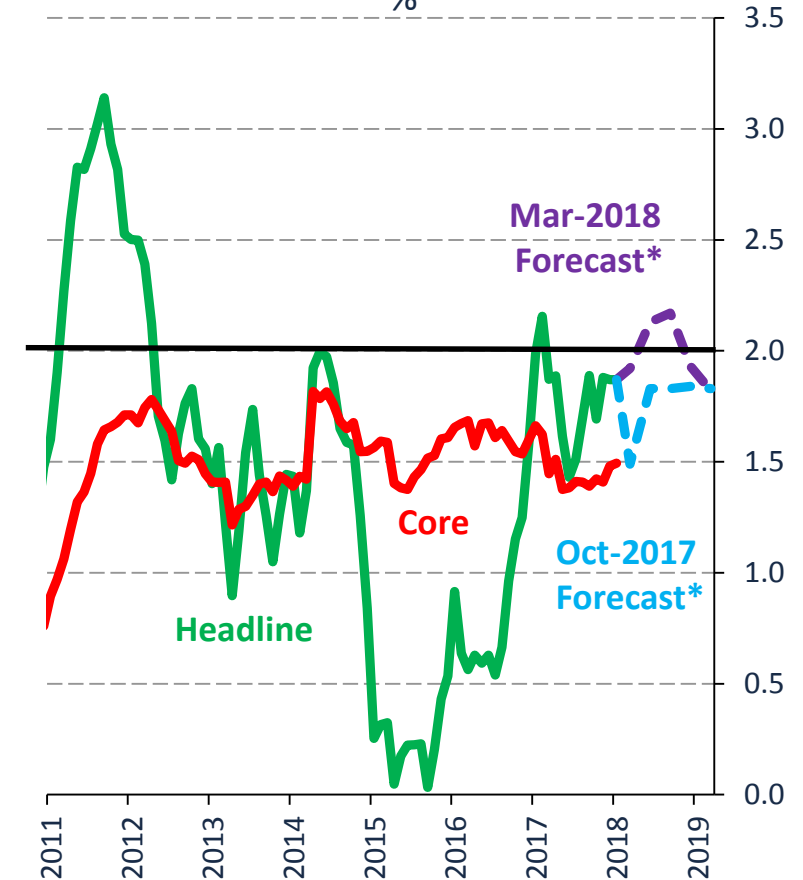
Core

Oct-2017 Forecast*

Headline

1/ The model is estimated through a system of multiple equations that explain the distance between observed GDP and potential GDP as a result of three types of shocks, to: (1) the level of inflation, (2) the rate of unemployment, and (3) growth and inflation expectations. Source: IMF.
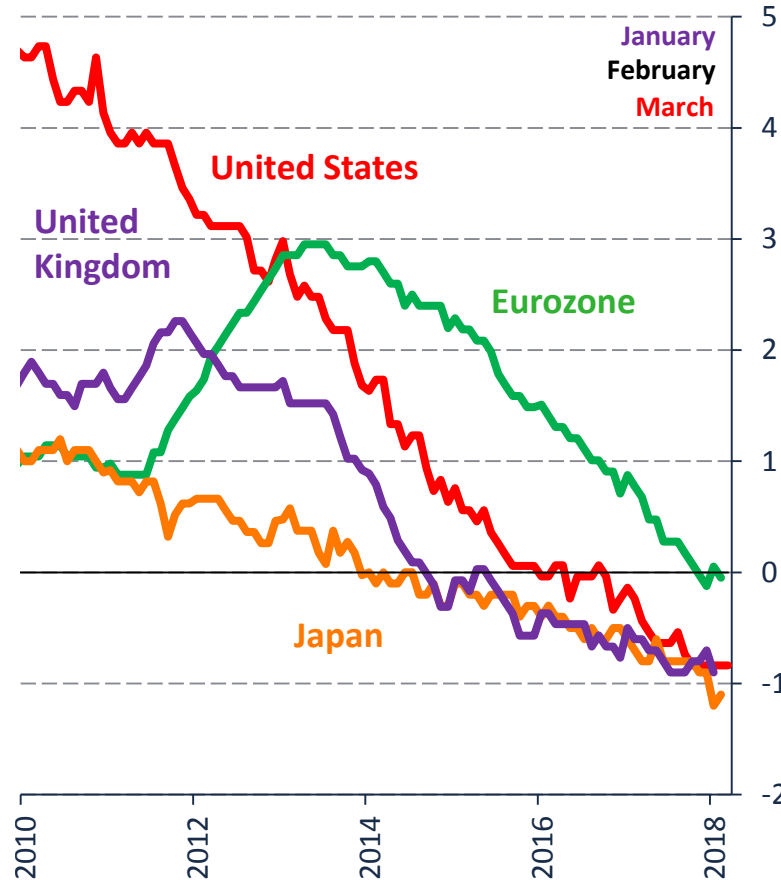
Note: The employment gap refers to the unemployment rate minus the natural rate of unemployment.
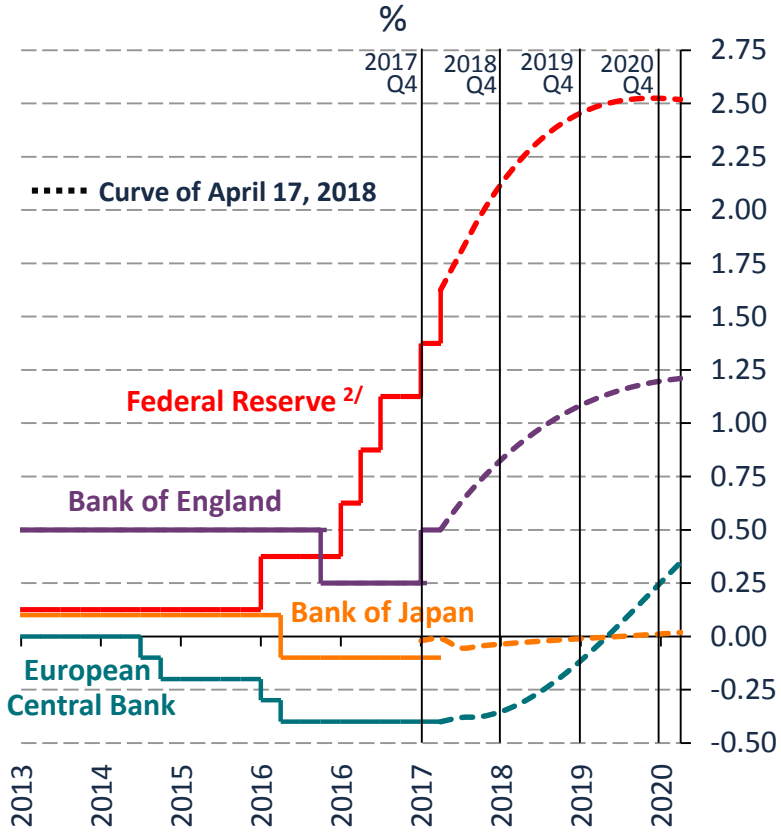Source: Bloomberg, Federal Reserve Bank of St. Louis, and OECD.

Note: Annual inflation is measured through the consumer price index of the G7 countries weighted by GDP. *Forecasts correspond to a GDP-weighted measure obtained from Bloomberg's analysts survey.
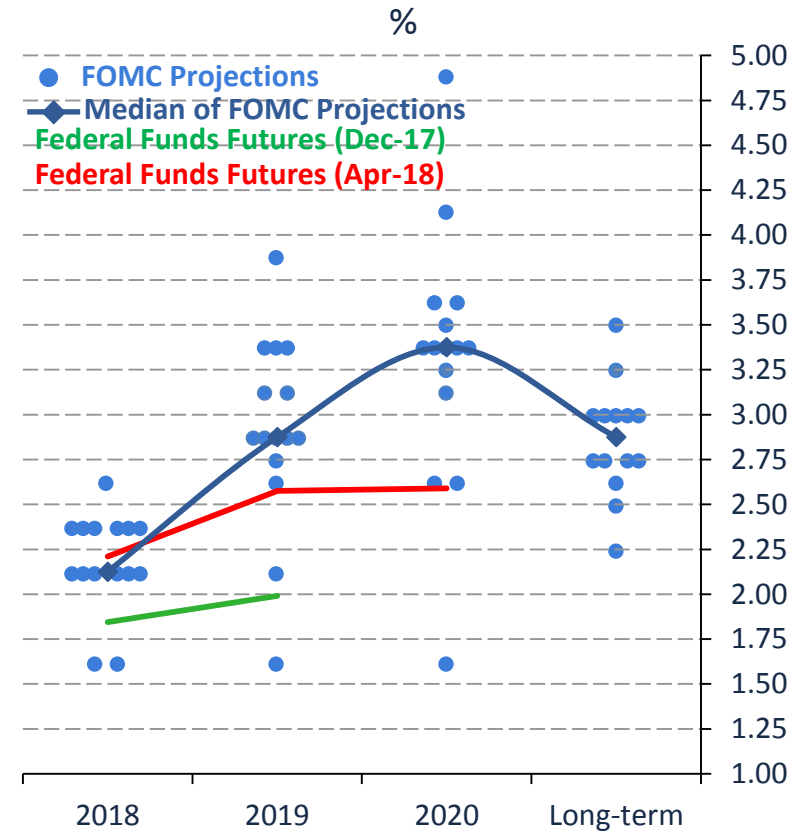Source: Banco de México with data from Bloomberg and Haver Analytics.

Most of the advanced economies' central banks are expected to move gradually towards a more neutral monetary policy stance. The Federal Reserve is expected to continue with a gradual normalization process, although there is greater uncertainty regarding interest rates in the medium term.

Expected Monetary Policy Rates Implicit in OIS Curve [1]
%

- •••• Curve of April 17, 2018
- Federal Reserve [2]
- Bank of England
- Bank of Japan
- European Central Bank

United States

Reference Rate Expectations for Selected Terms
%

- ● FOMC Projections
- ◆ Median of FOMC Projections
- Federal Funds Futures (Dec-17)
- Federal Funds Futures (Apr-18)

Interest Rates
%

- 10-Year
- 2-Year
- April

1/ OIS: Fixed-For-Floating swap where the fixed interest rate is the reference rate.
2/ Data for the observed federal funds rate corresponds to the average between the lower and upper bounds of the range (1.50% - 1.75%). Source: Banco de México with data from Bloomberg.

Source: Banco de México with data from Bloomberg.
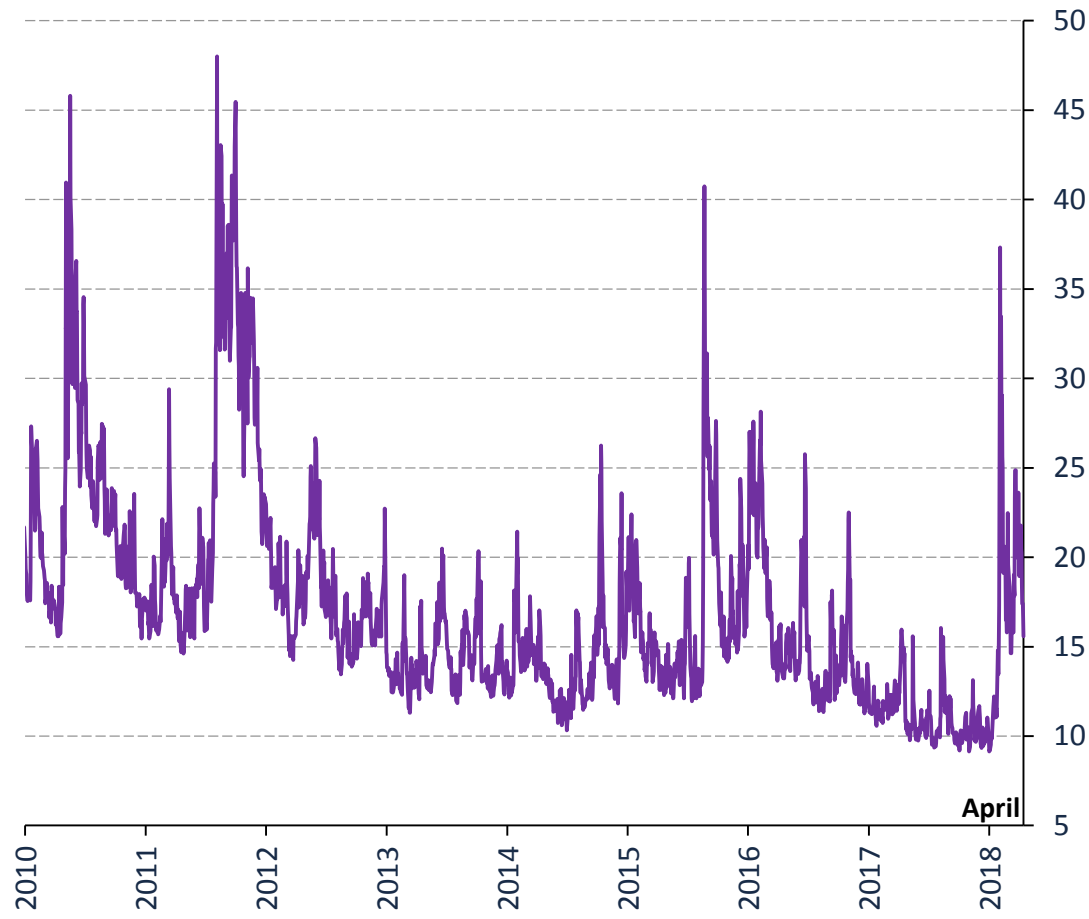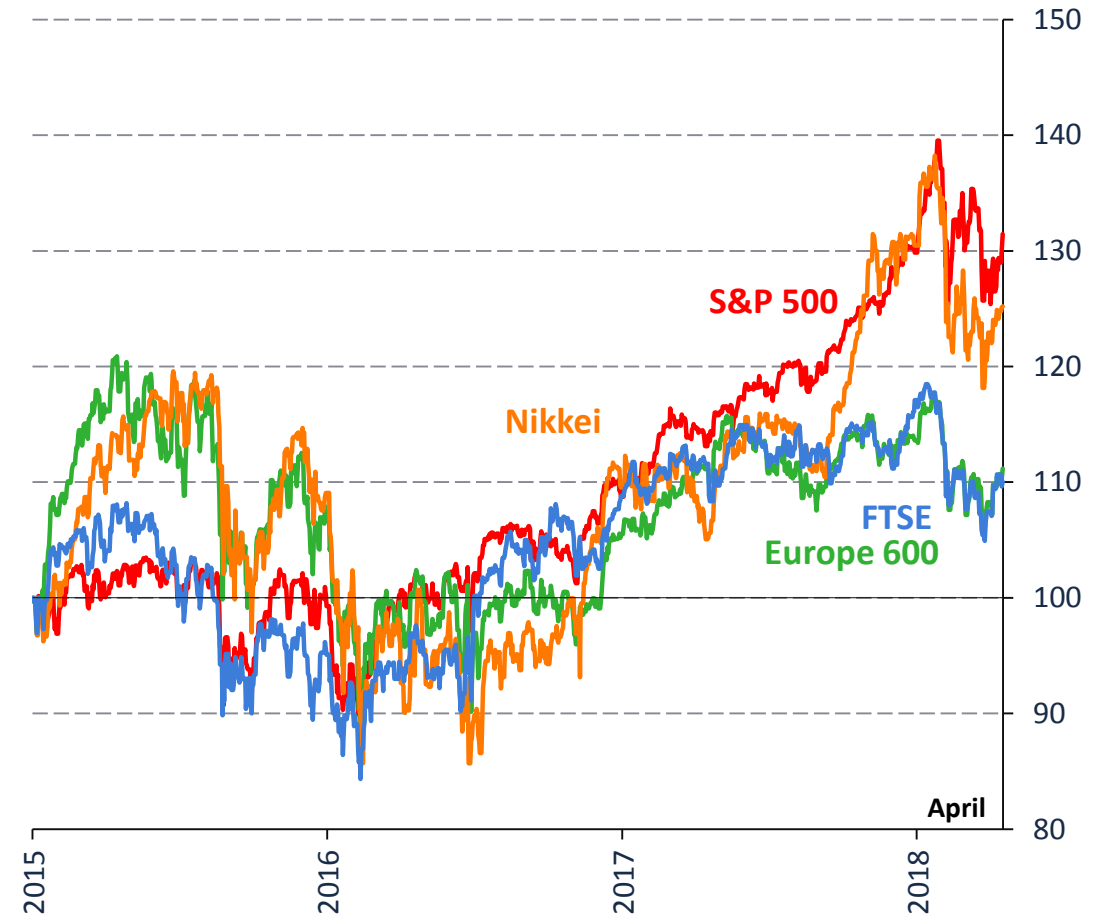
Source: Bloomberg.

U.S. interest rates have increased as a result of a strong cyclical recovery and an additional support from the fiscal expansion. This has generated more uncertainty in the outlook for inflation and induced an adjustment in other financial markets as well.

VIX
Index

Source: Bloomberg.

Advanced Economies: Stock Indexes
Index 01-Jan-2015 = 100


S&P 500

Nikkei

FTSE

Europe 600

Source: Bloomberg.

■ In this environment, Emerging Market Economies face three important challenges:

① The end of the commodity super cycle:

  ✓ *Terms of trade shock.*
  ✓ *Reduction of fiscal revenues.*
  ✓ *Impact on GDP growth (cyclical and potential).*

② The normalization of monetary policy in advanced economies:

  ✓ *Federal Reserve's monetary policy normalization (more uncertain environment).*
  ✓ *More restrictive financial conditions that could affect investment decisions and capital flows.*

③ Revision of the global integration model:

  ✓ *Review of regional integration agreements (Brexit and NAFTA renegotiation).*
  ✓ *Less convergence in public policies (trade, fiscal, environmental, cooperation, among others).*
  ✓ *Consequences for international trade, global chains of value and knowledge exchange.*

■ These elements influence emerging economies in function of their:

  ✓ *Dependence to commodities (external and fiscal accounts).*
  ✓ *Level of trade and financial flows' openness.*

In recent years, emerging market economies' currencies have depreciated, reflecting the fall in commodity prices, higher interest rates in the United States, and the effects of the revision of the global integration model.
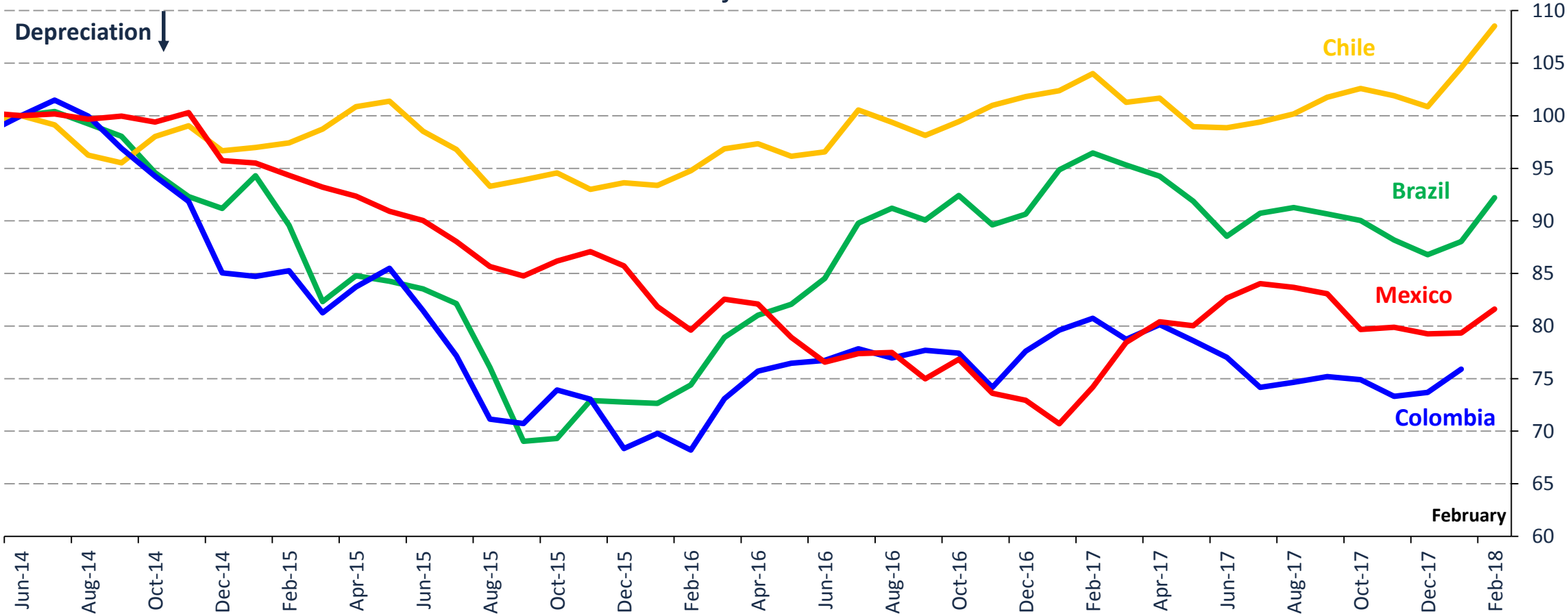
Nominal Exchange Rate and Commodities Prices [1]
Index 2-jun-2014=100
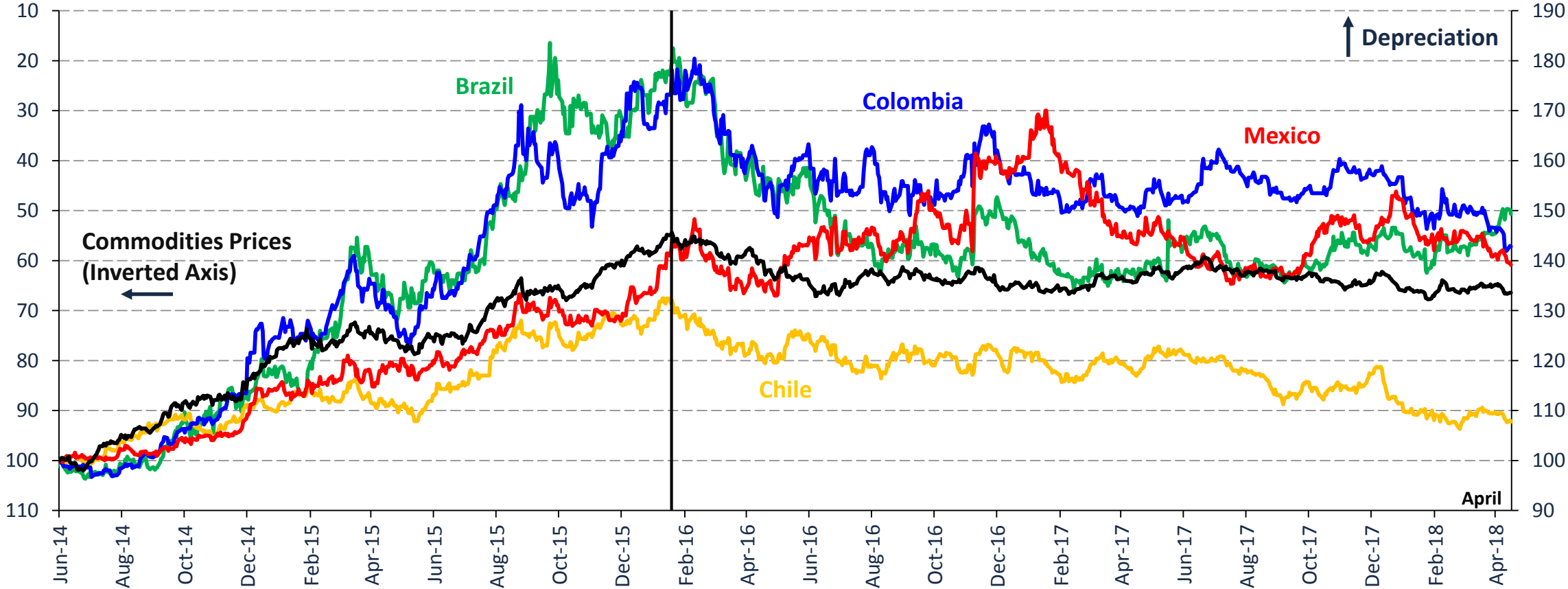
Note: The vertical line refers to the commodities' minimum price.
1/ Exchange rate in relation to USD.
Source: Bloomberg.

In this context, real exchange rates have depreciated, although this trend has recently reverted.

Real Exchange Rate [1]

Index jun-2014=100

1/ Refers to the BIS real effective exchange rate monthly averages.
Source: BIS.

Outline

Available information suggests that, during the first months of 2018, Mexican economic activity kept expanding, driven mainly by the services sector and by a modest recovery of industrial production.

Gross Domestic Product
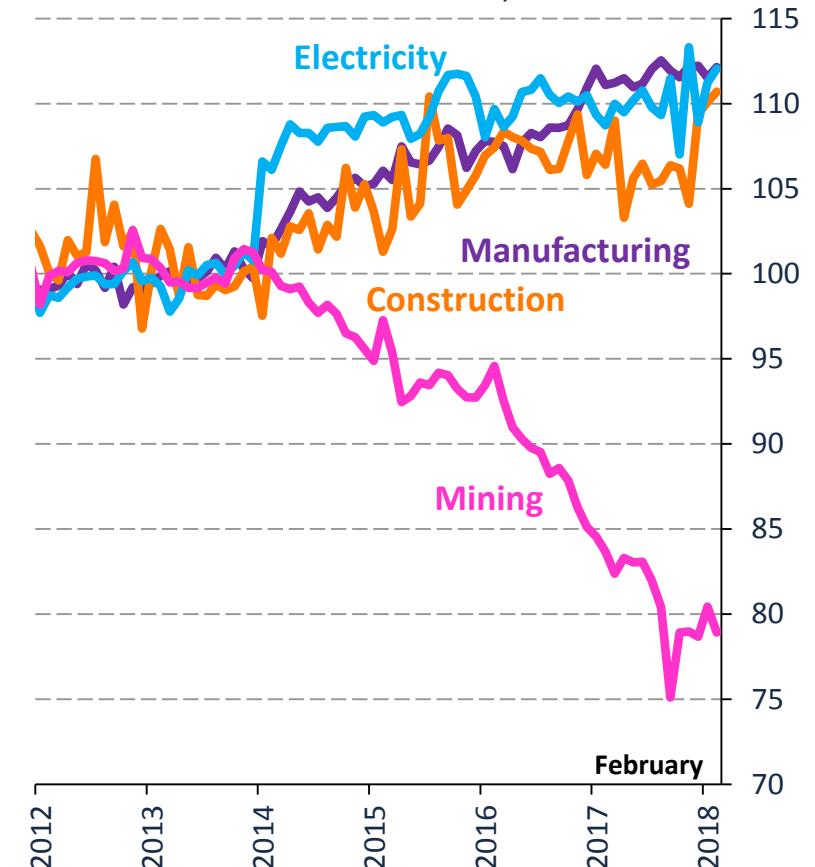Quarterly % change, s. a.
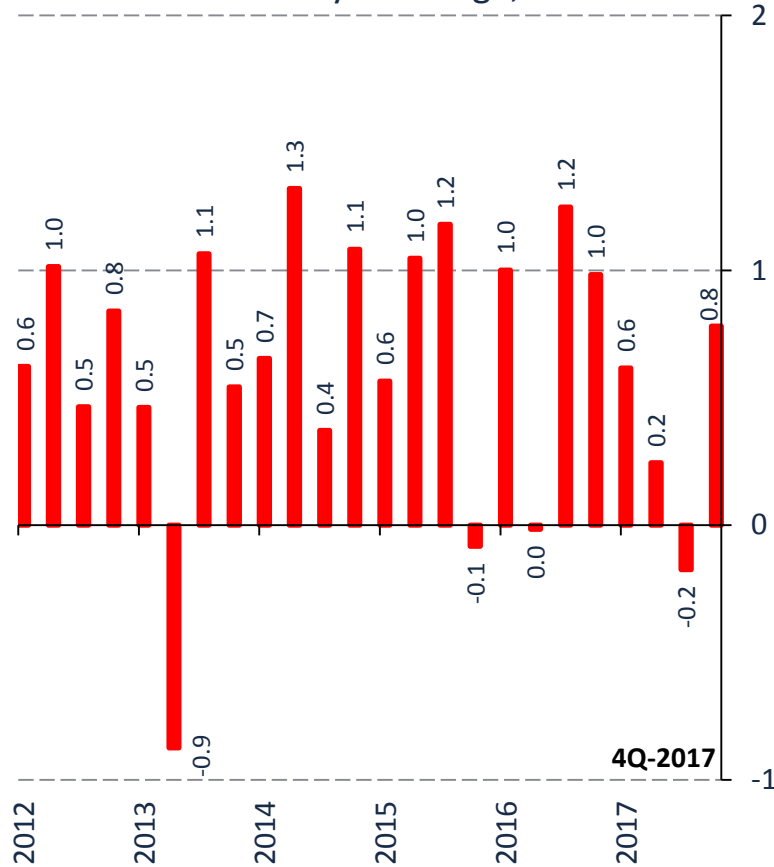
s. a. / Seasonally adjusted data.
Source: Mexican National Accounts System (SCNM), INEGI.

Economic Activity Indicators
Index 2013=100, s. a.
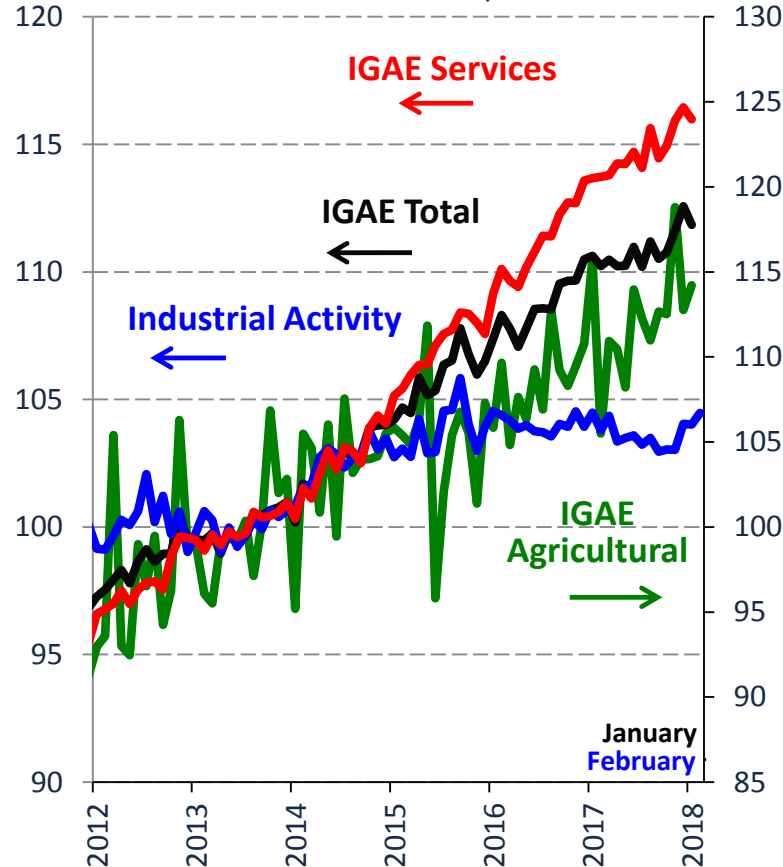
s. a. / Seasonally adjusted data.
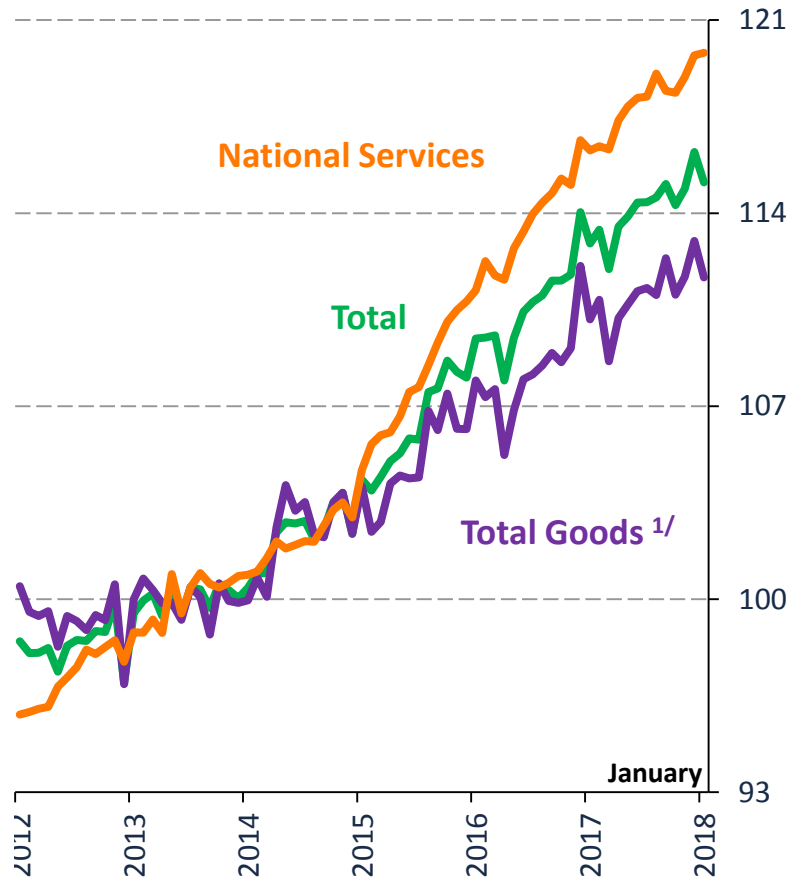Source: Mexican National Accounts System (SCNM), INEGI.

Industrial Activity
Index 2013=100, s. a.

s. a. / Seasonally adjusted data. Source: Monthly Industrial Activity Indicator, Mexican National Accounts System (SCNM), INEGI.

Private consumption kept expanding, although at a slower pace.

Monthly Indicator of Private Consumption and its Components
Index 2013 = 100, s. a.

National Services
Total
Total Goods [1]
January

Workers' Remittances
Billions of dollars and constant pesos, s. a.

Pesos [2]
Dollars
February

Consumer Confidence Index and Real Total Wage Bill
Index 2013 =100, s. a.

Real Wage Bill
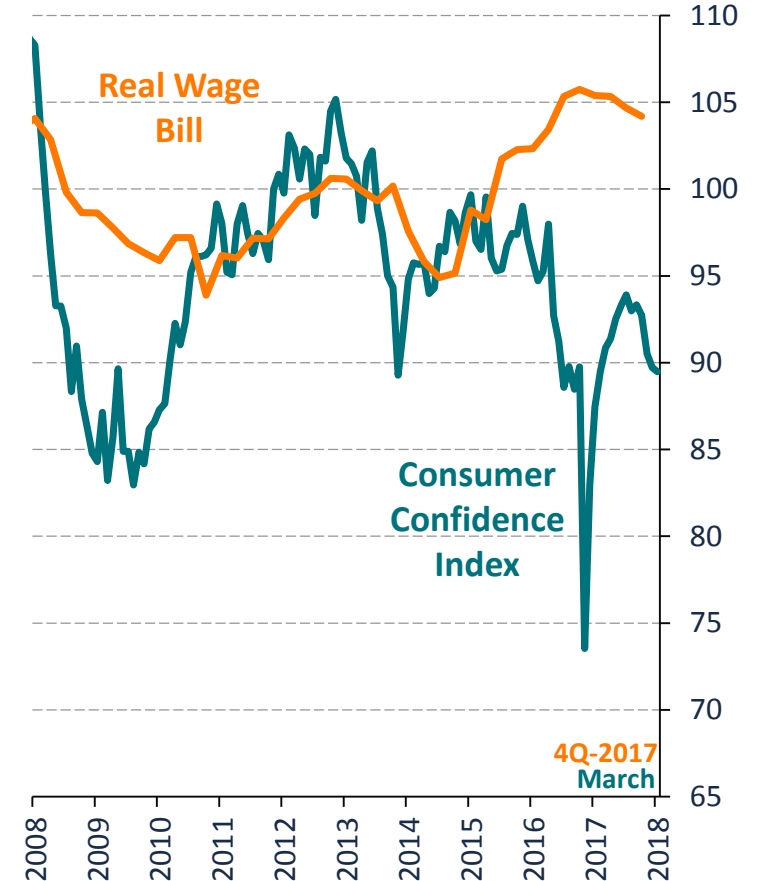Consumer Confidence Index
4Q-2017
March

s. a. / Seasonally adjusted data.
1/ Prepared and seasonally adjusted by Banco de México. Includes national and imported goods.
Source: Mexican National Accounts System (SCNM), INEGI.
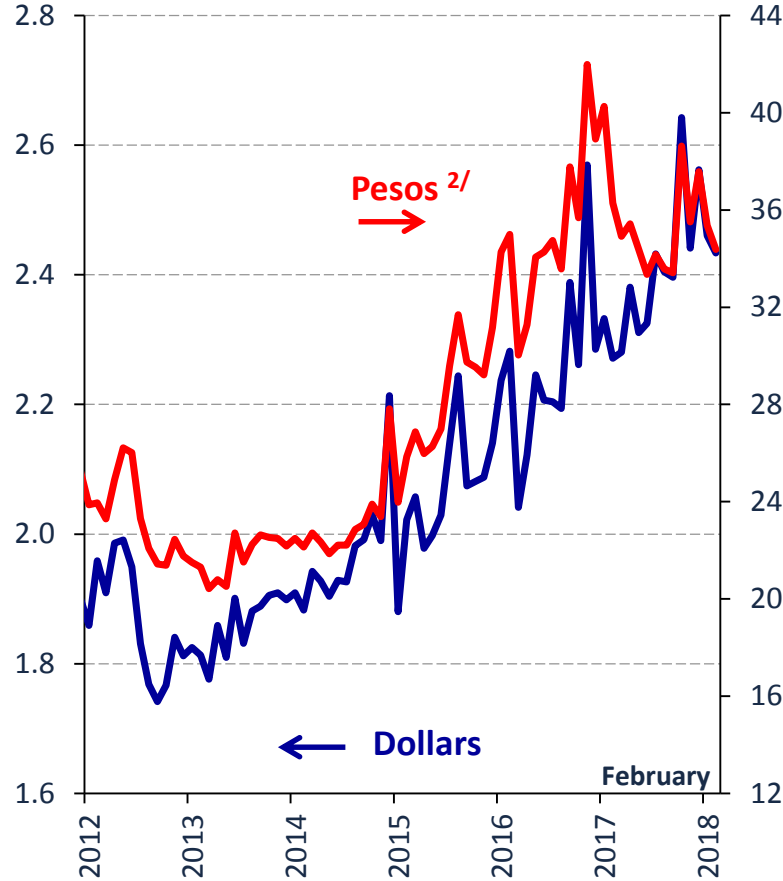
s. a. / Seasonally adjusted data.
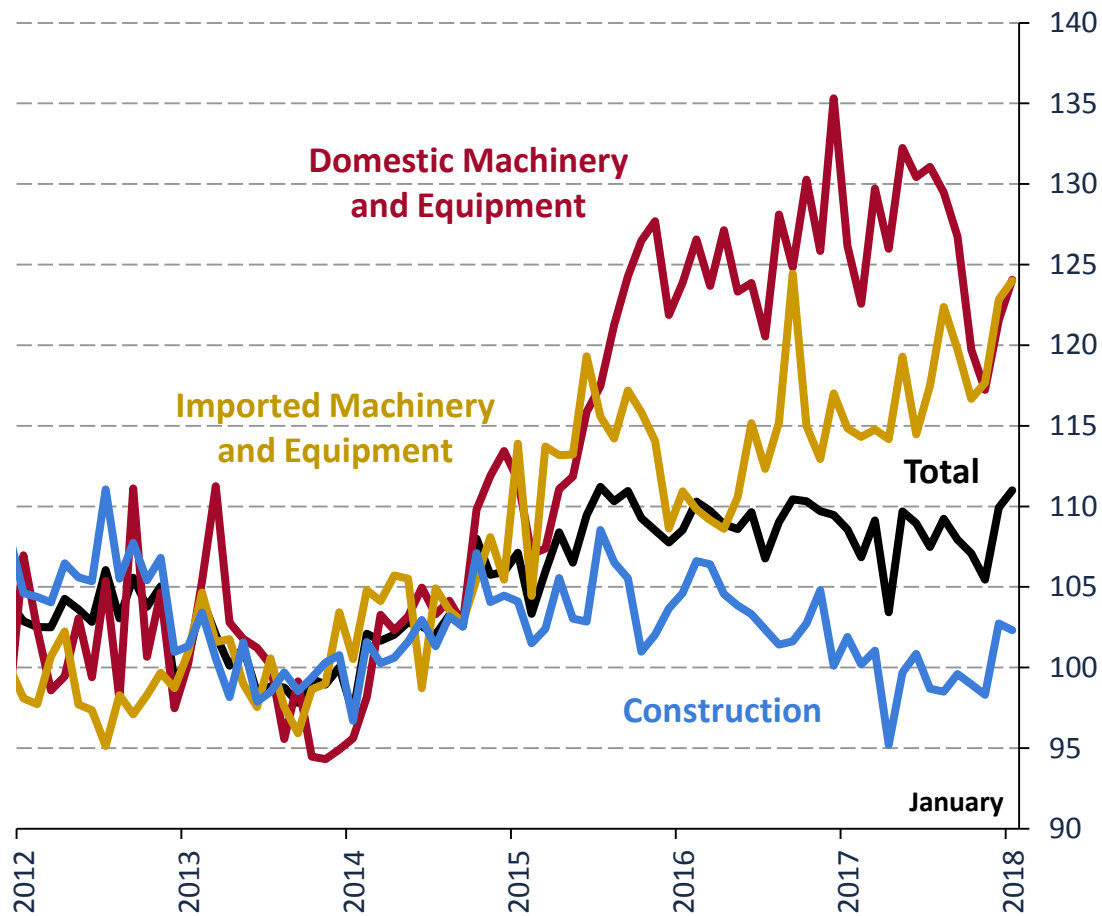2/ At prices from the December 2010 second half.
Source: Banco de México.

s. a./ Seasonally adjusted data.
Source: Preared by Banco de México with data from the National Employment Survey (*Encuesta Nacional de Ocupación y Empleo*), INEGI.

Investment has shown a modest recovery in the last months.

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

Domestic Machinery and Equipment

Imported Machinery and Equipment

Total

Construction

January

s . a./ Seasonally adjusted data.
Source: Mexican National Accounts System, INEGI.

Real Value of Construction Output by Contracting Institutional Sector [1]
Index Jan-2012=100, s. a.

Private Excluding Housing

Private

Total

Public

Private Housing

January
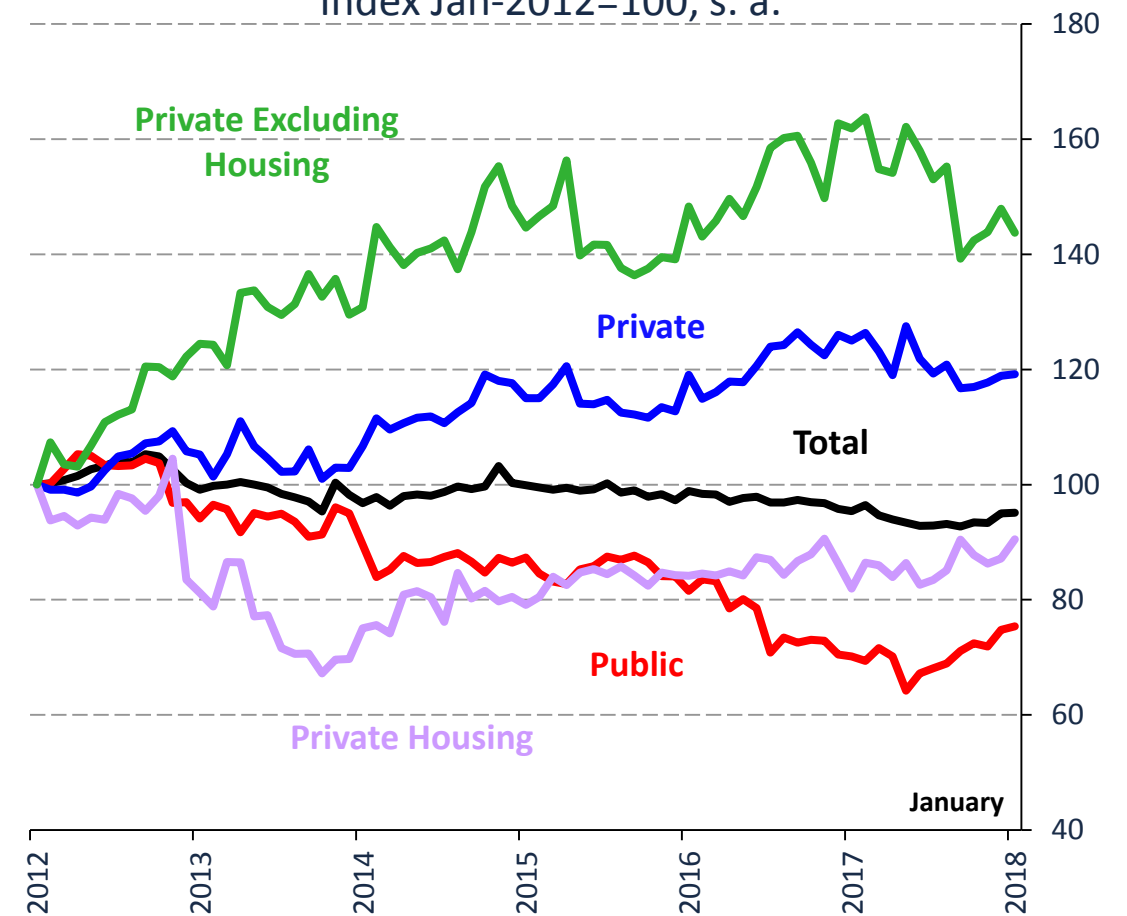
s. a./ Seasonally adjusted data.
1/ Seasonally adjusted by Banco de México, except for the total item.
Source: Own calculations with data from ENEC, INEGI.

In recent years, the external sources of funding have declined, while domestic sources have substituted them. This, along with a decrease in the use of resources by the public sector, has allowed to mitigate the deceleration of financing to the private sector.

Sources and Uses of Financial Resources
Annual flows as % of GDP

	2013	2014	2015	2016	2017
Total sources	**10.0**	**9.7**	**5.8**	**7.4**	**7.8**
Domestic sources [1]	5.7	5.6	4.6	5.5	6.6
External sources [2]	4.2	4.1	1.2	1.9	1.2
Total uses	**10.0**	**9.7**	**5.8**	**7.4**	**7.8**
International reserves	1.0	1.3	-1.5	0.0	-0.4
Public sector financing	4.1	4.7	4.2	2.8	1.1
Private sector financing	4.2	2.5	3.1	3.0	3.8
Domestic	2.5	1.7	3.0	3.0	3.3
External	1.7	0.8	0.1	0.0	0.5
Other concepts [3]	0.7	1.2	0.1	1.6	3.2
Current Account Deficit	**2.4**	**1.8**	**2.5**	**2.1**	**1.6**

Nota: Figures expressed in percent of the nominal average annual GDP.
1 / Corresponds to the domestic financial assets aggregate F1, which includes the monetary aggregate M3 plus other instruments held by resident sectors that hold money, and which are not considered in the monetary aggregates.
2/ Includes the monetary aggregate M4 held by non-residents, the external debt of the Federal Government, the external debt of public agencies and companies, the external liabilities of commercial banks, external financing to the non-financial private sector, the fund raising of agencies and other holdings of non-monetary instruments by non-residents.
3/ 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.

Domestic Financing to the Non-Financial Private Sector [4]
### Real annual % change
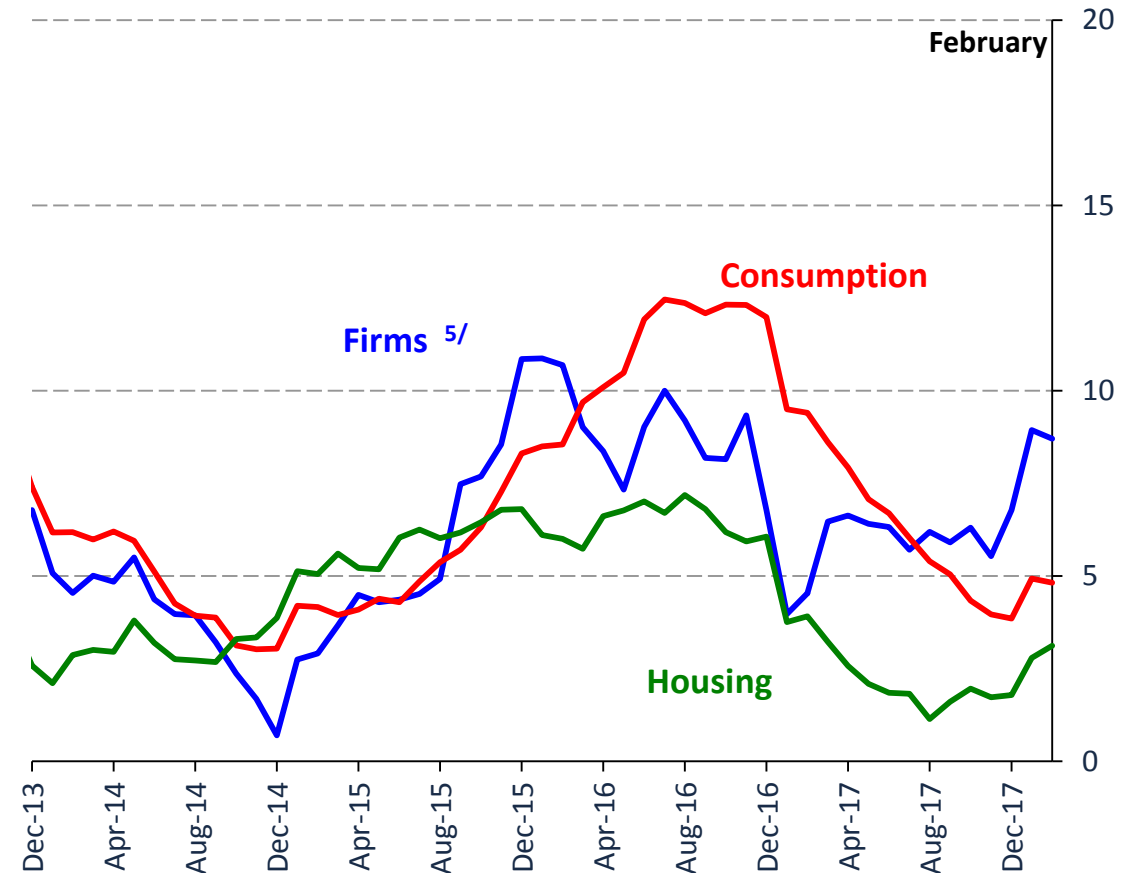
4/ Data adjusted due to the withdrawal from and the incorporation of some financial intermediaries to the credit statistics. 5/ Data adjusted due to exchange rate variations.
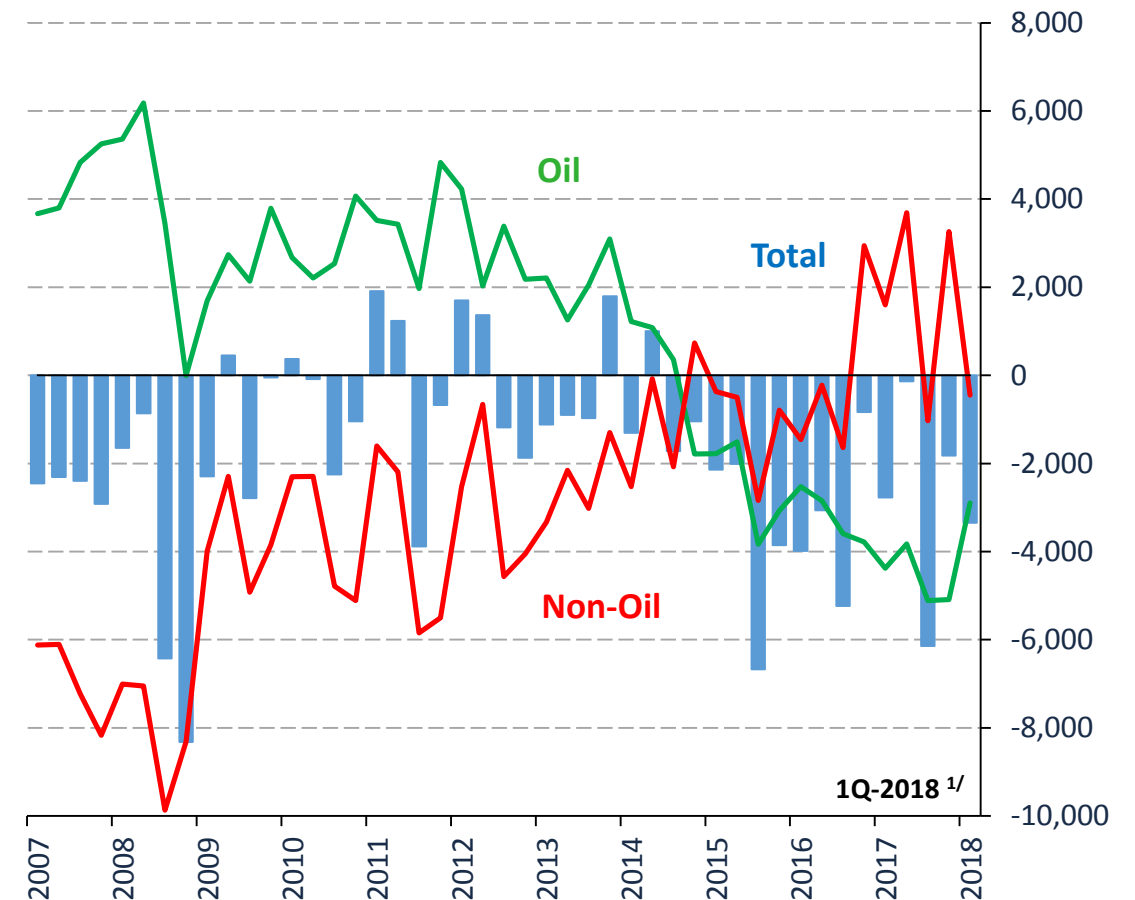Source: Banco de México.

The external accounts have reverted their medium-term trends, and now the oil-trade balance is in deficit and the non-oil balance showed a surplus in 2017.

Exports
Index 2013=100, s. a.

Non-Oil

Total

Oil
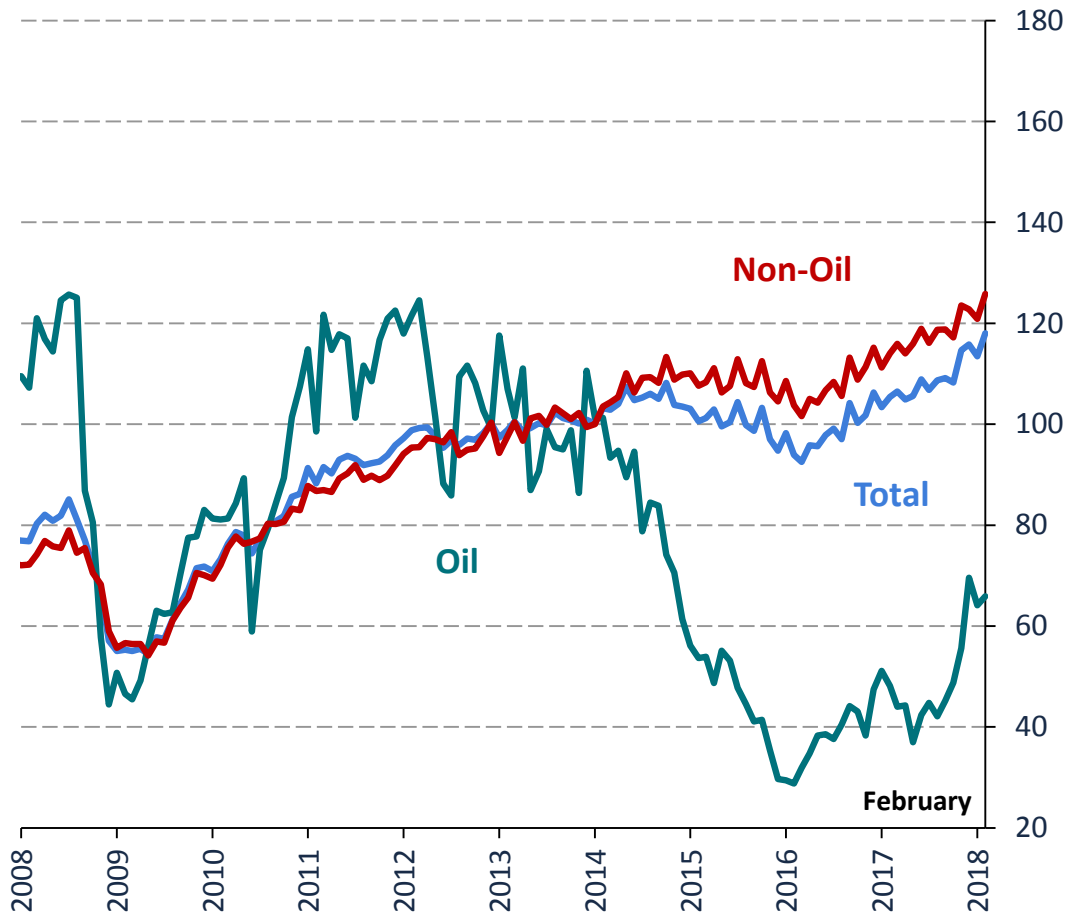
February

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

Trade Balance
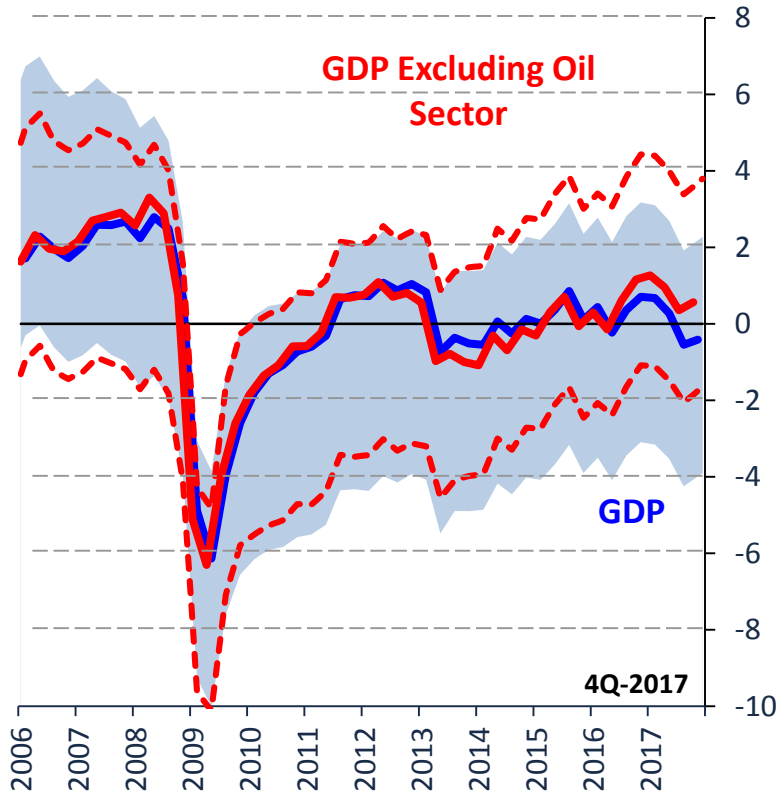USD millions

Oil

Total

Non-Oil

1Q-2018 [1/]

1/ Data up to February 2018.
Source: SAT, SE, Banco de México, INEGI. Merchandise Trade Balance, SNIEG. Information of National Interest.

Regarding the cyclical position of the economy, slack conditions have been tightening, particularly in the labor market.

Output Gap [1/]
% of potential output, s. a.


GDP Excluding Oil Sector

GDP

4Q-2017

Note: Confidence interval of the output gap calculated with an unobserved components method. The dotted line refers to the confidence interval for the gap calculated excluding the oil sector while the blue area is the interval corresponding to the total GDP.
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.
Source: Estimated by Banco de México with data from INEGI.

Monthly Slack Index [2/]
%
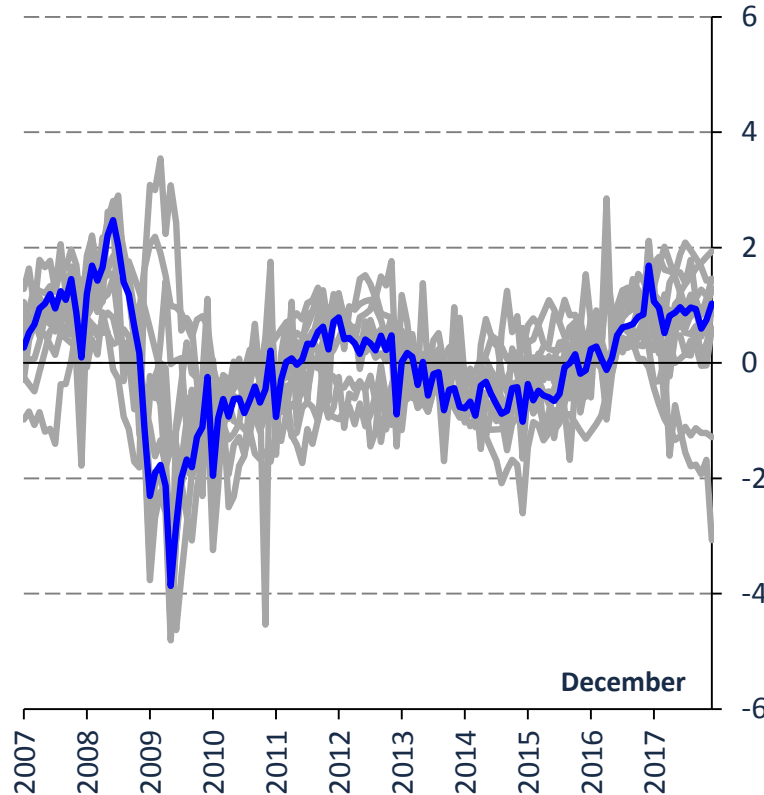
December

2/ Index constructed based on the Model Confidence Set (MCS) methodology; see Banco de México Inflation Report, October – December 2017. Monthly slack index is based on the first principal component of a set that includes 11 indicators. The first component represents 51% of the joint variation of the monthly indicator. Gray lines correspond to individual slack indicators used in the analysis of Principal Components.
Source: Own elaboration with data from INEGI and Banco de México.

Labor Market Gap: Unemployment Rate and Informal Salaried Workers
Percentage points, s. a.
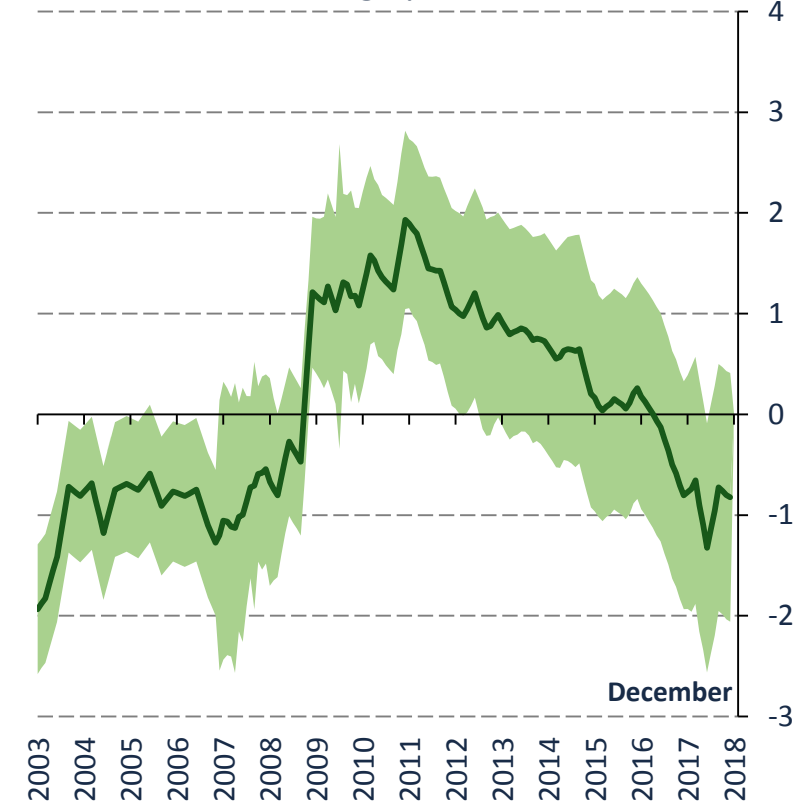
December

s. a./ Seasonally adjusted data.
Note: The interval corresponds to two average standard deviations among all estimates; see Banco de México (2017), "Quarterly Report, October-December 2016", page 47. Source: Banco de México.
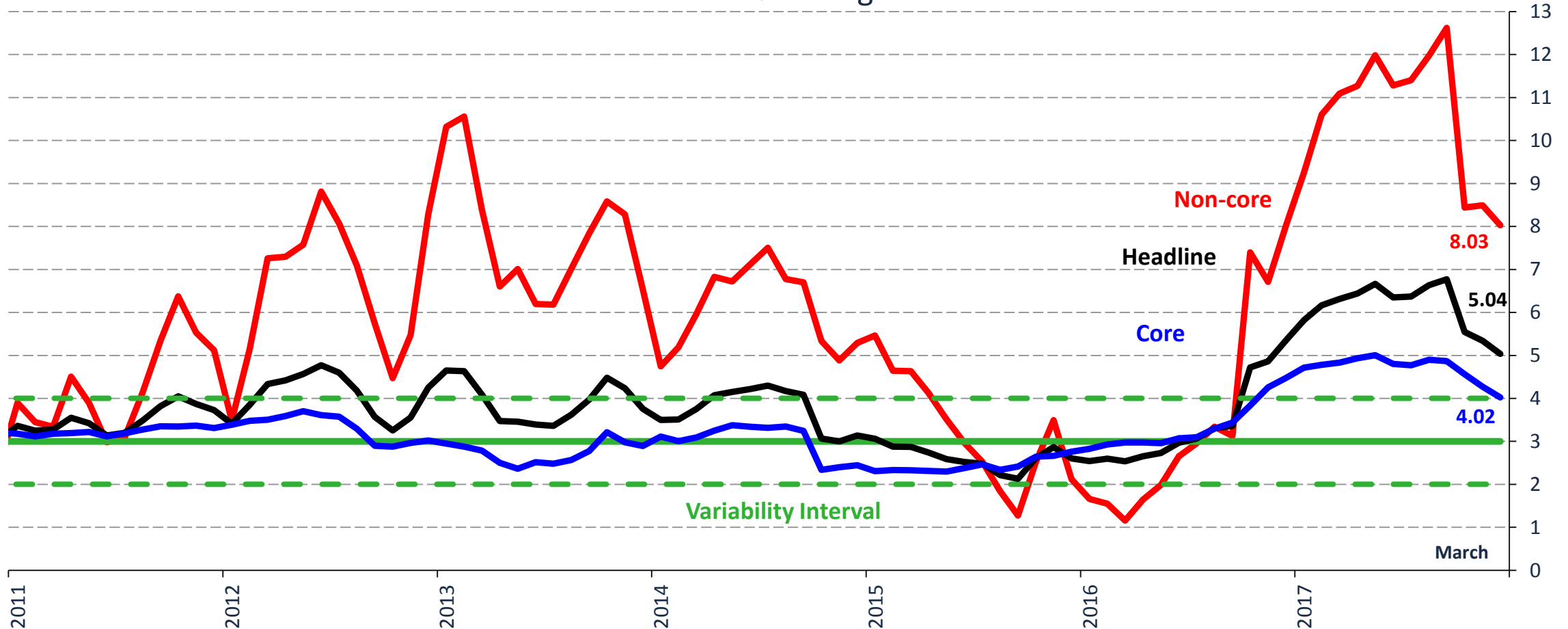
Outline

1	**External Conditions Current Outlook**

2	**Monetary Policy and Inflation Determinants in Mexico**

2.1	**Evolution of Economic Activity**

2.2	**Recent Monetary Policy and Inflation**

In 2017, inflation was strongly influenced by a series of domestic and external shocks of considerable magnitude, including: the depreciation of the Mexican peso, higher energy prices, higher public transportation fares, and increased prices for some agricultural products. However, as anticipated, in January it started to decline as a result of a decrease in both core and non-core inflation, reaching 5.04% in March.
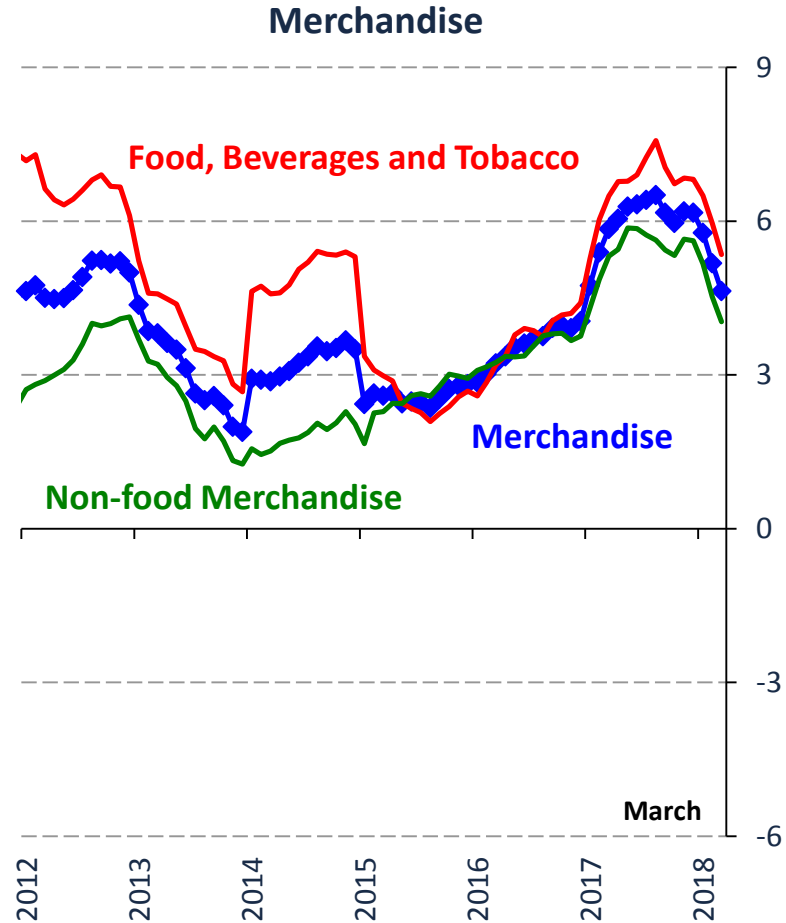
Consumer Price Index
Annual % change

Non-core

Headline

Core

8.03

5.04

4.02

Variability Interval

March

2011   2012   2013   2014   2015   2016   2017
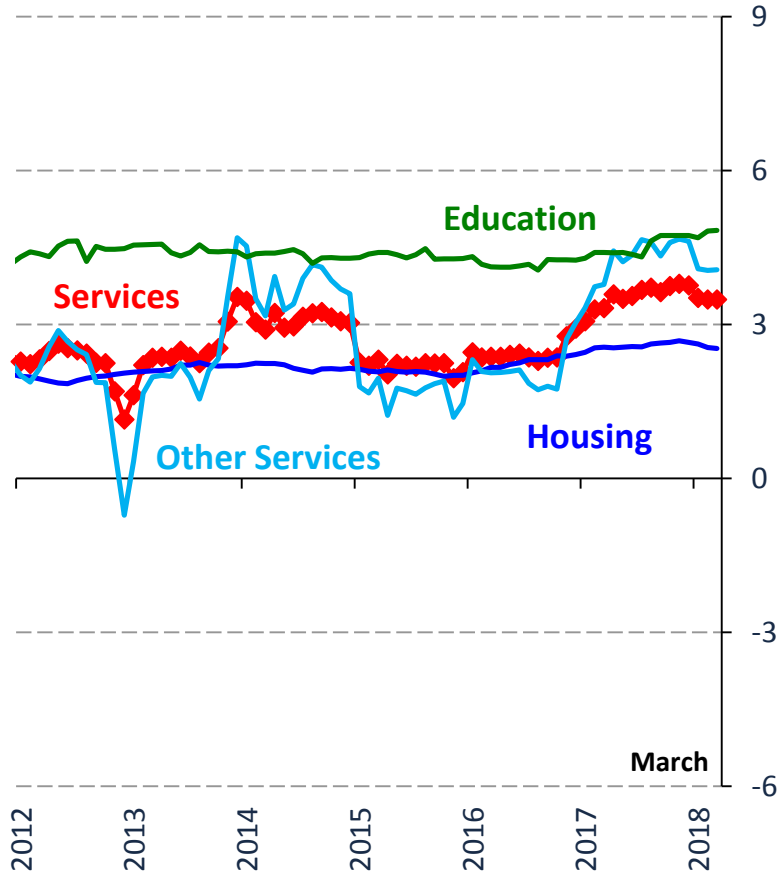
Source: Banco de México and INEGI.

As for core inflation, the difference in the growth of merchandise and services prices reflects the adjustment in relative prices, originated by the real exchange rate depreciation. Both subindexes have started to decrease, partly due to the fading of indirect effects generated by cost increases.
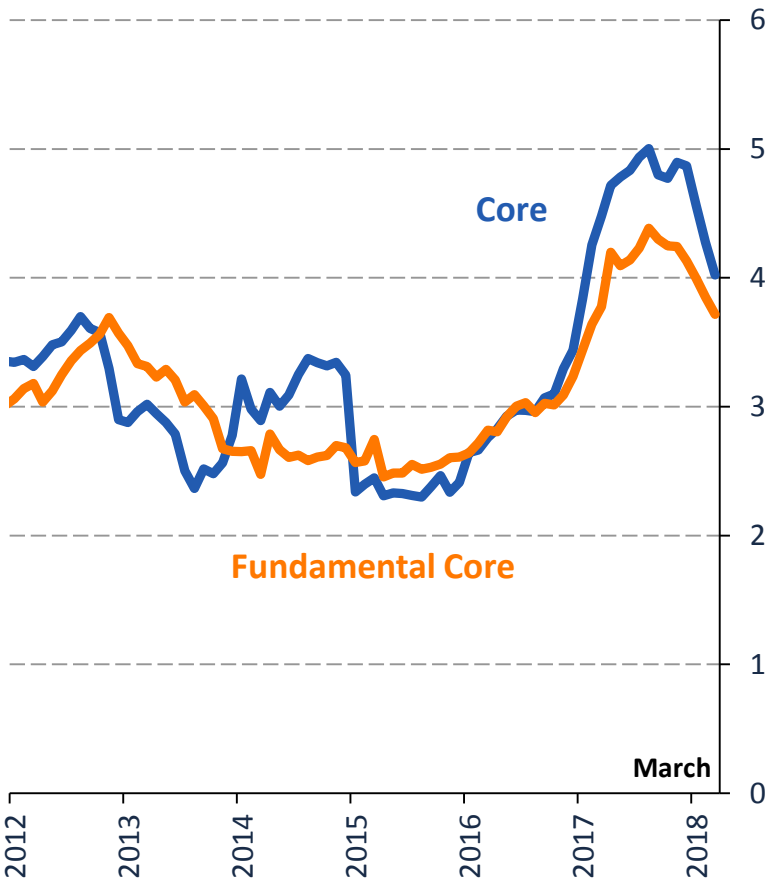

Core Price Index
Annual % change

Merchandise

Food, Beverages and Tobacco

Merchandise

Non-food Merchandise

March

Services

Education

Services

Other Services

Housing

March

Core Inflation and Fundamental Core Inflation
Annual % change

Core

Fundamental Core

March

Source: Banco de México and INEGI.

Source: Banco de México and INEGI.

Source: Banco de México and INEGI.

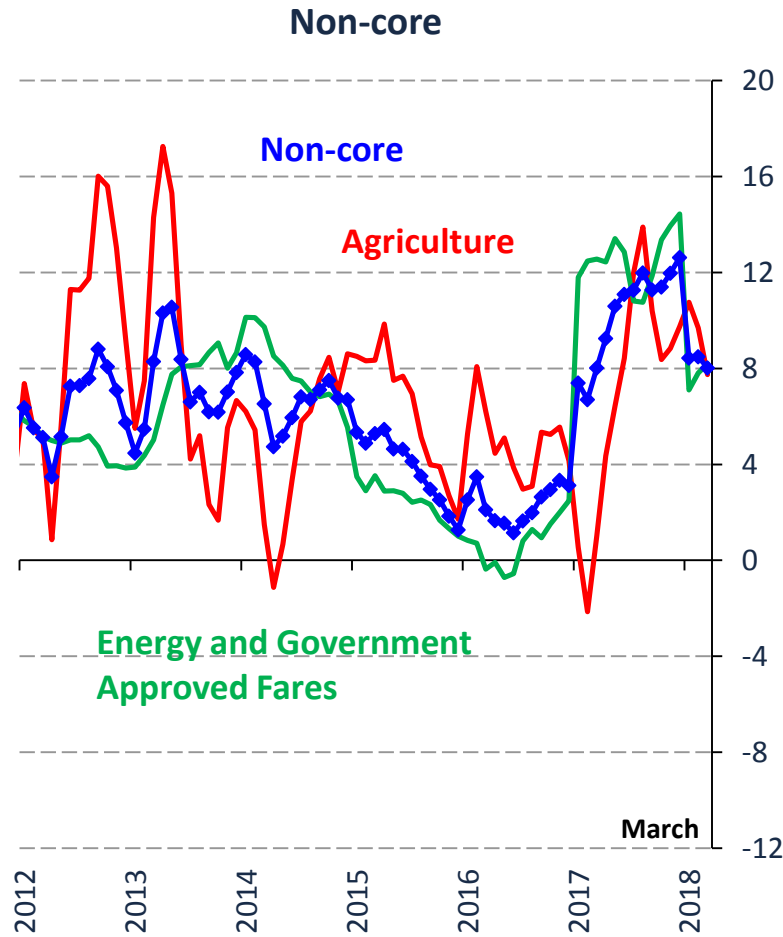# In 2017, a number of significant shocks influenced non-core inflation, pushing it to high levels by late 2017. Even though in early 2018 non-core inflation began to decline, it continued to reflect the shocks that had affected it in late 2017.

Non-core Price Index
Annual % change

Non-core

Selected Fruits and Vegetables
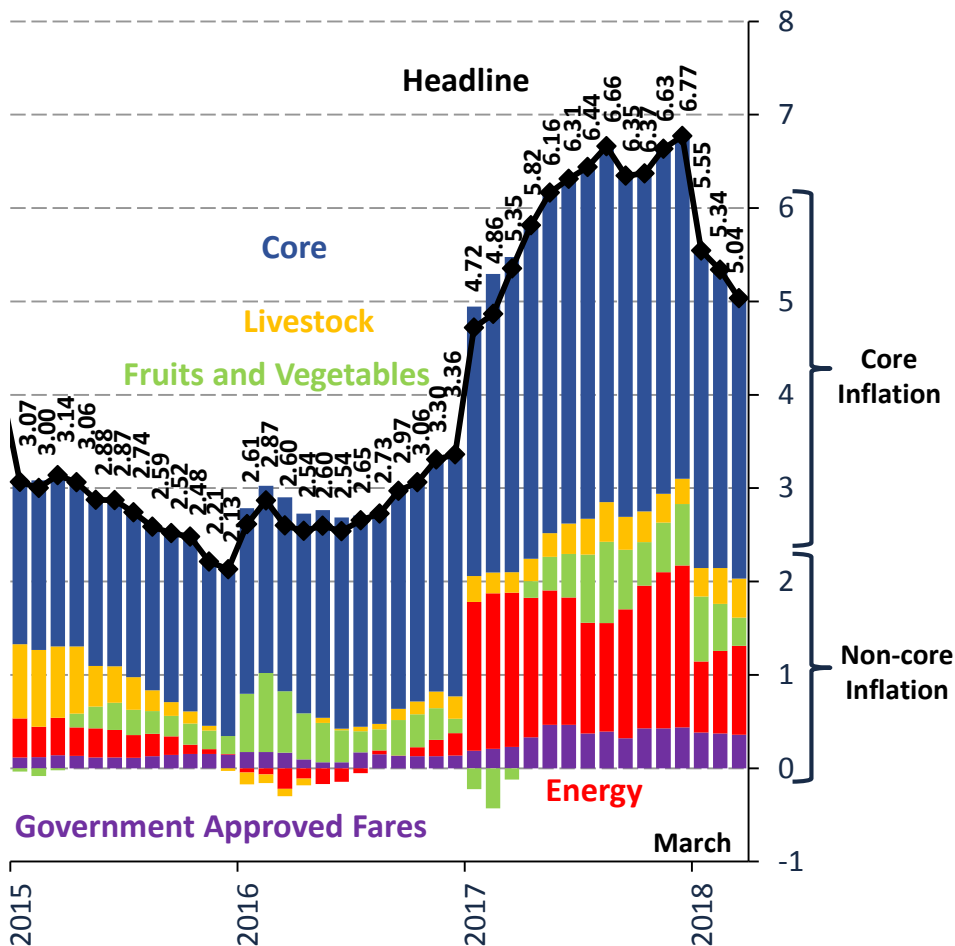
Selected Energy Products
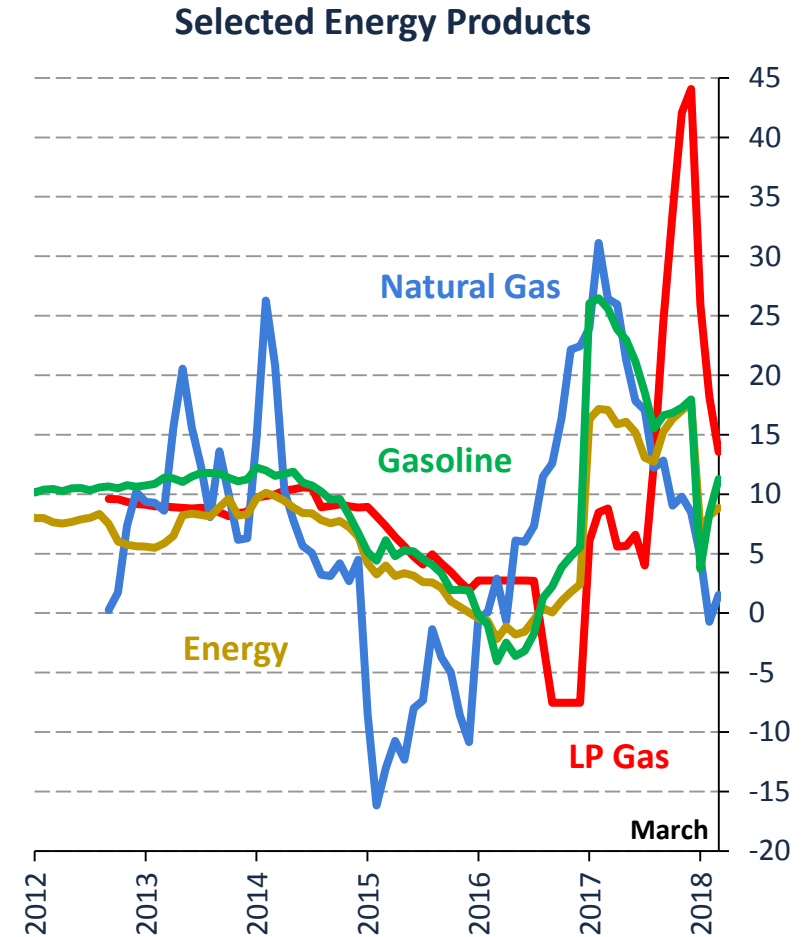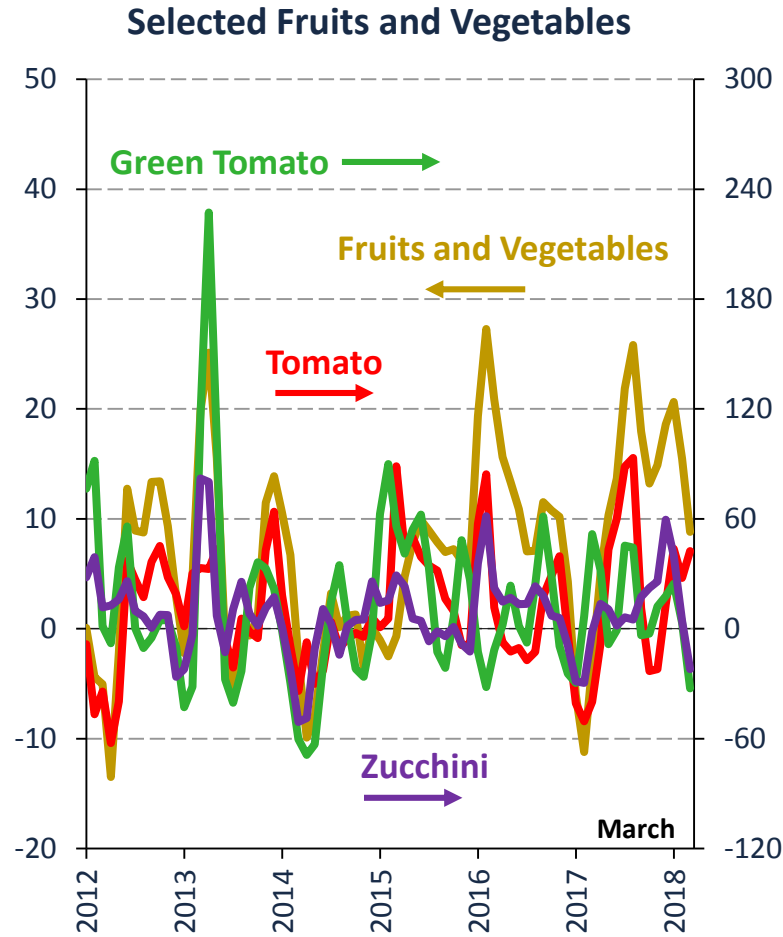
Source: Banco de México and INEGI.

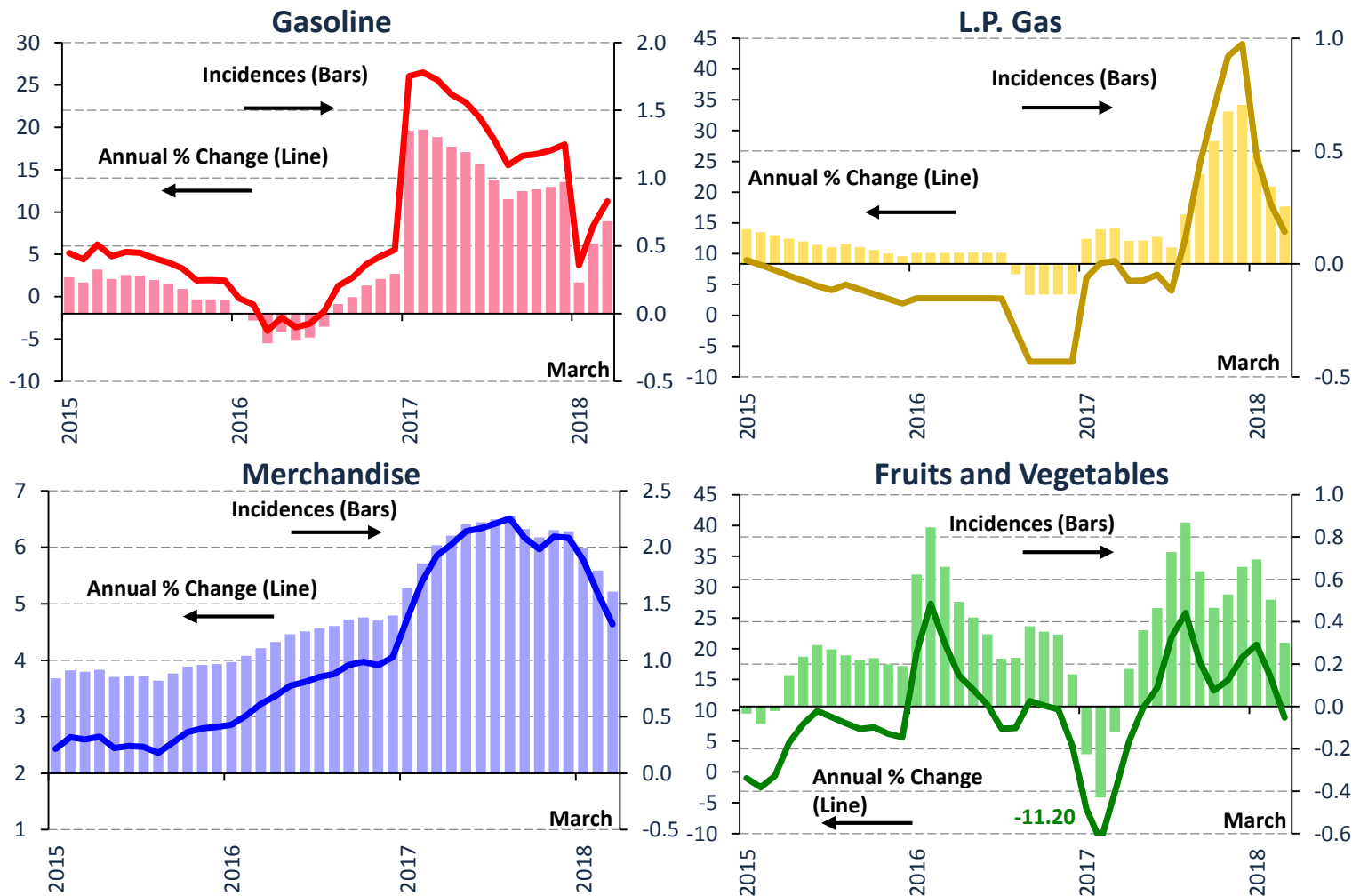# At the beginning of the year, the prices of LP gas, fruits and vegetables, and merchandise started to decrease.

Consumer Price Index (CPI)
Incidences in percentage points

Selected Components of CPI
Annual % change and incidences in percentage points

Source: Banco de México and INEGI.

Despite the significant depreciation of the peso in recent years, the exchange rate pass-through to prices remains at low levels, reflecting a better functioning of the nominal system of the economy.

**Real Bilateral Exchange Rate
Between Mexico and the United States**
Index 1992=100
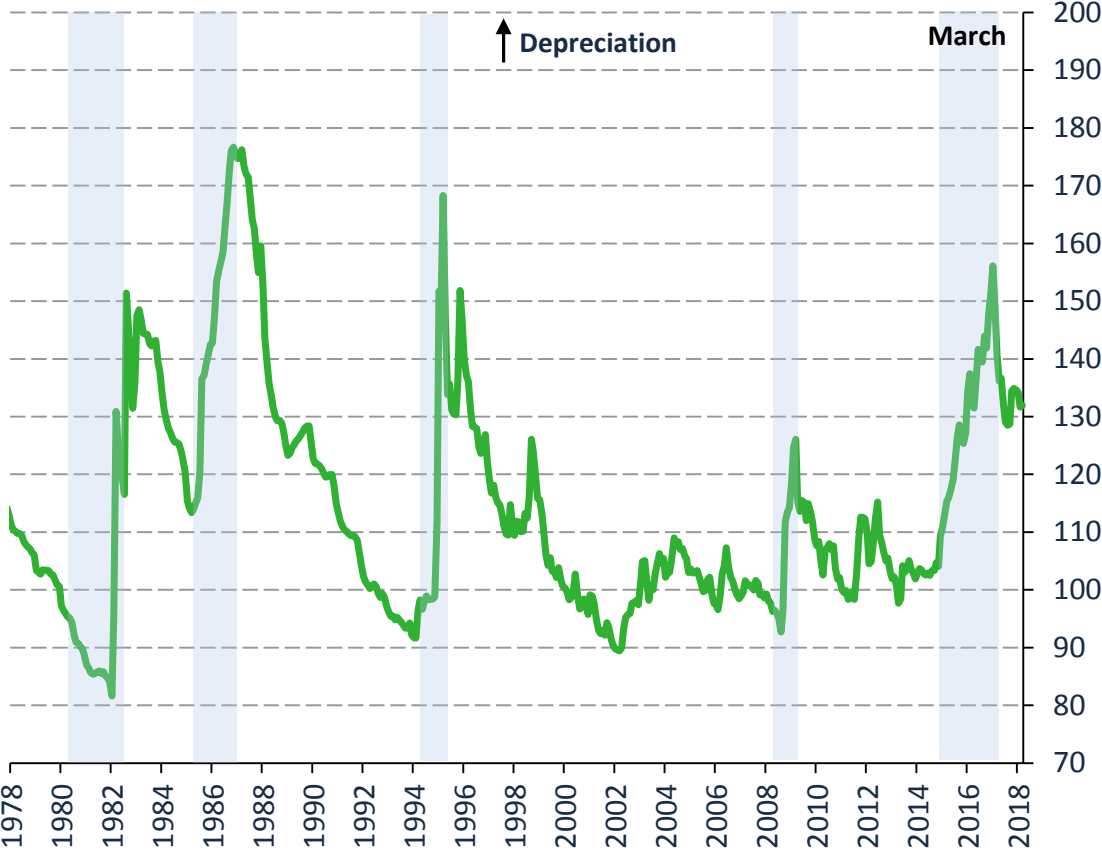
Source: Bureau of Labor Statistics, INEGI, and Banco de México.

Headline Inflation and Nominal Depreciation Rate
Annual % change
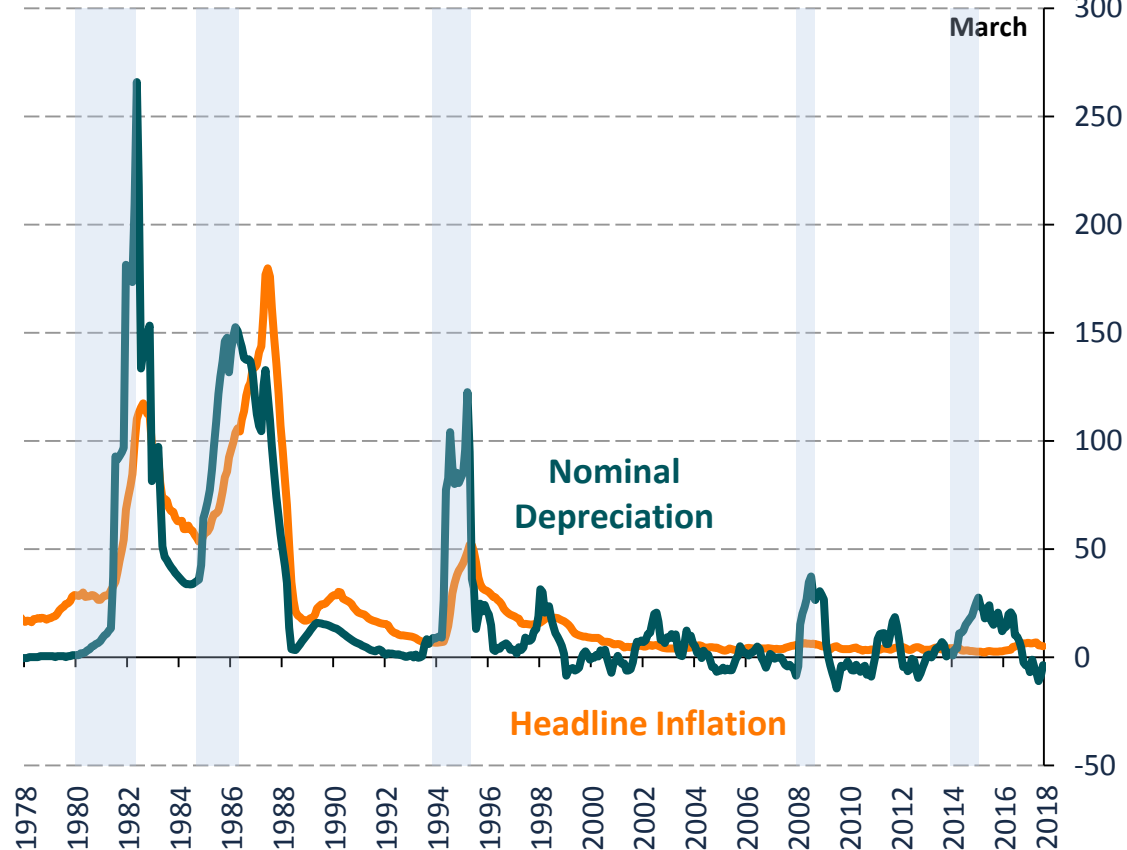
Source: Banco de México and INEGI.

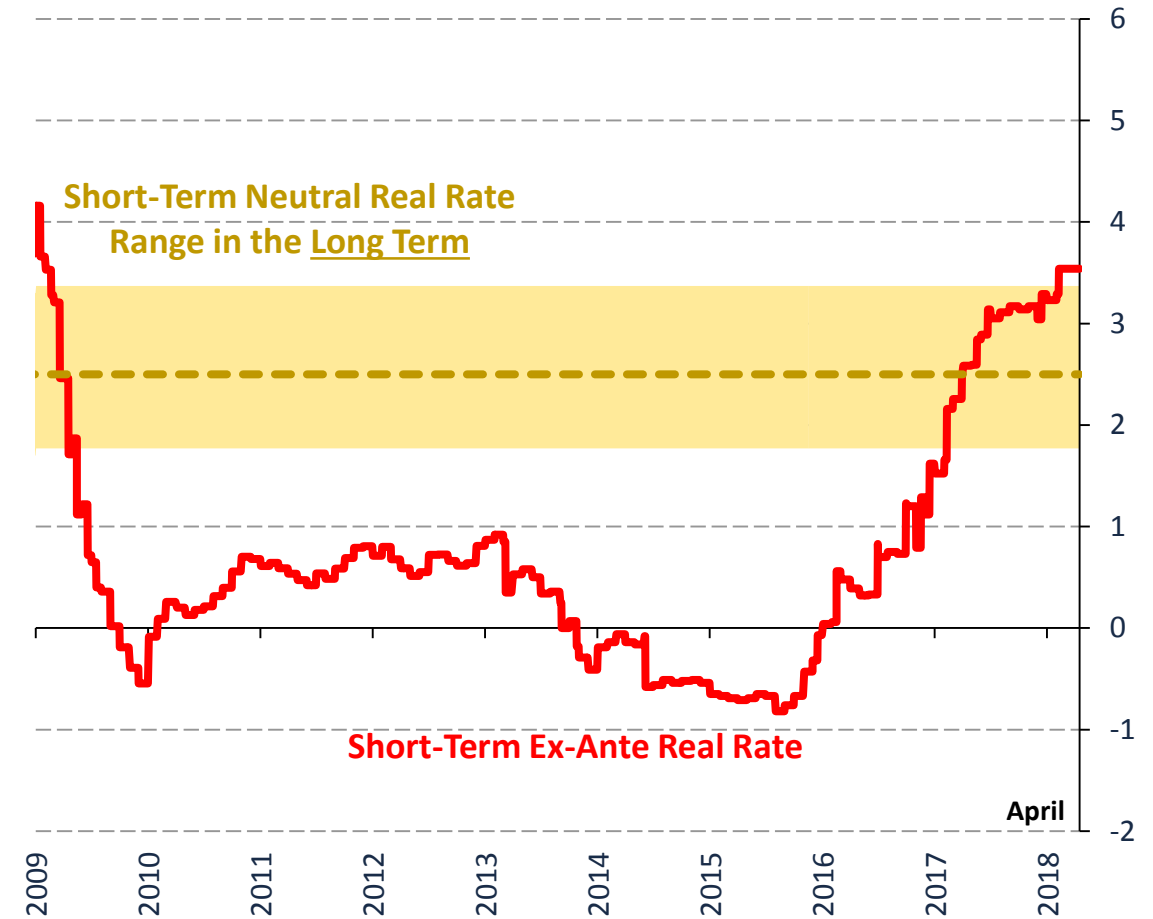**In the monetary policy meeting of February, Banco de México's Governing Board raised the target for the Overnight Interbank Interest Rate to 7.50%. In April, the Board decided to leave the reference rate unchanged. The current monetary policy stance is consistent with both the anchoring of inflation expectations and the downward trend of annual inflation to its target.**

Monetary Policy Rate and Consumer Price Index
% and annual % change

Target for the Overnight Interbank Interest Rate

Headline Inflation

Core Inflation

Inflation Target

March
April
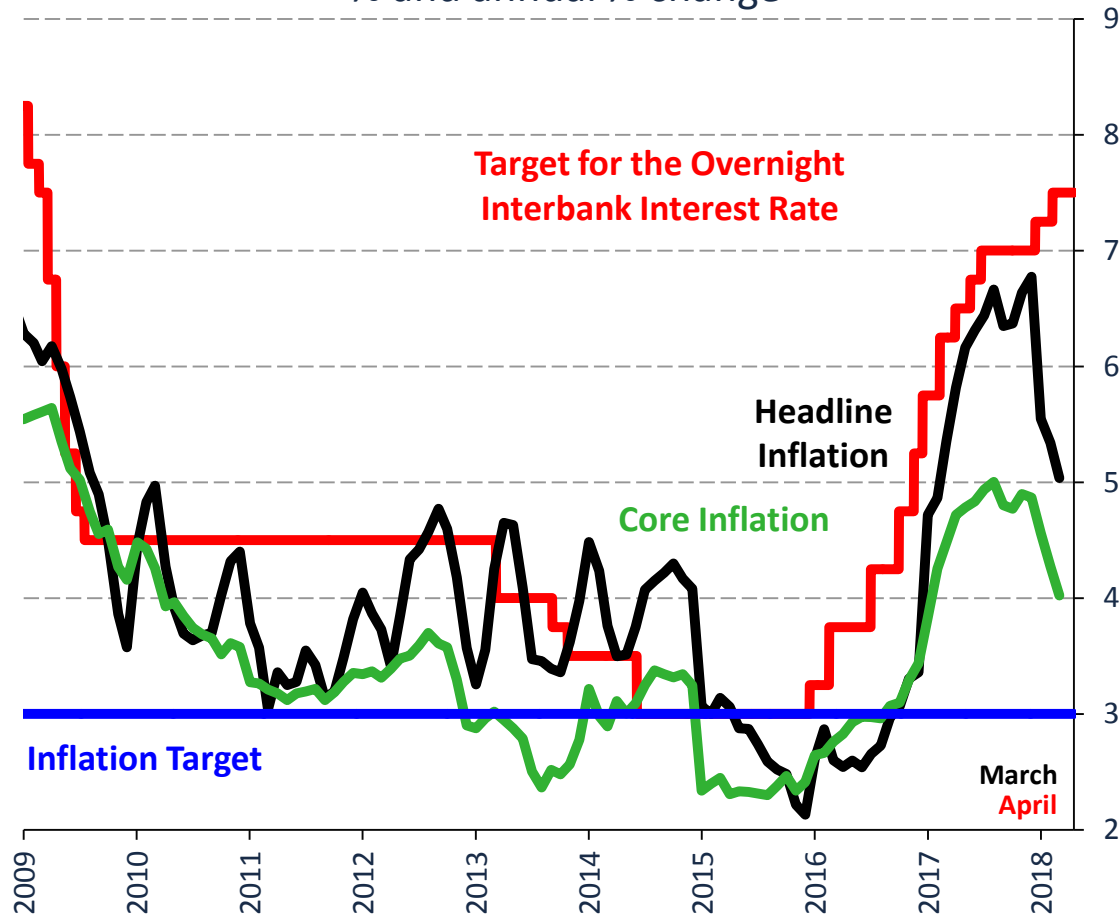
Source: Banco de México and INEGI.

Short-Term Ex-Ante Real Rate [1]
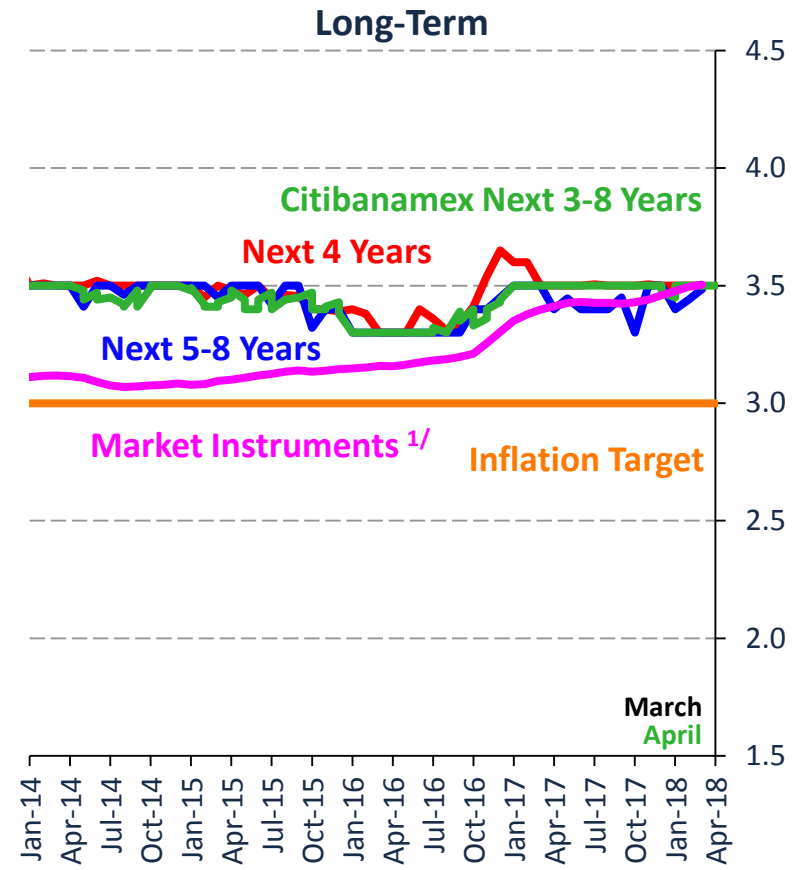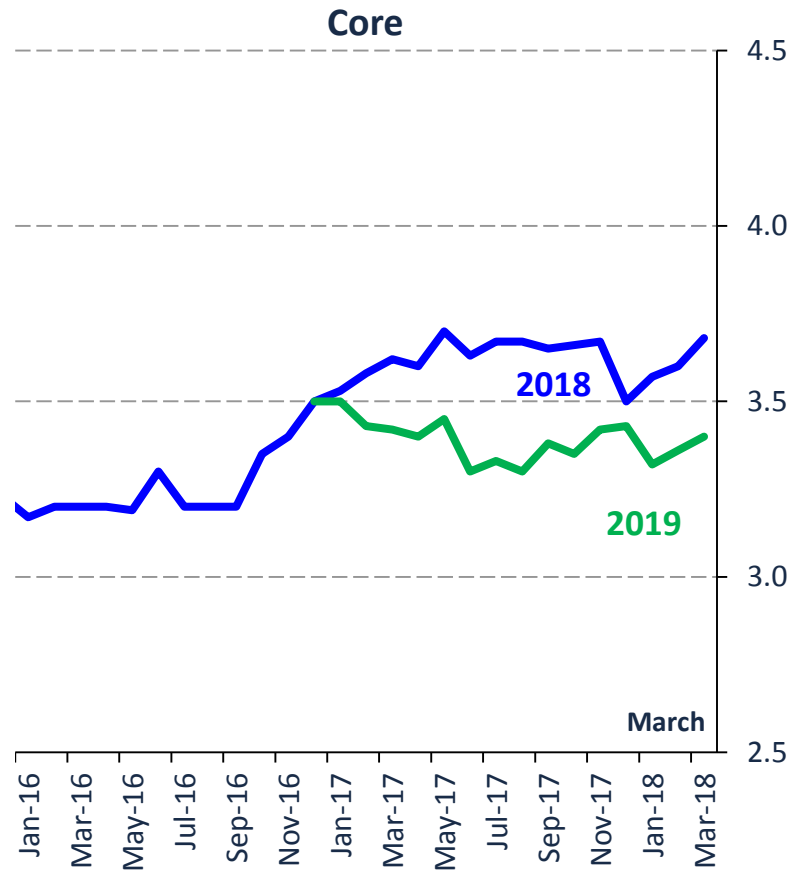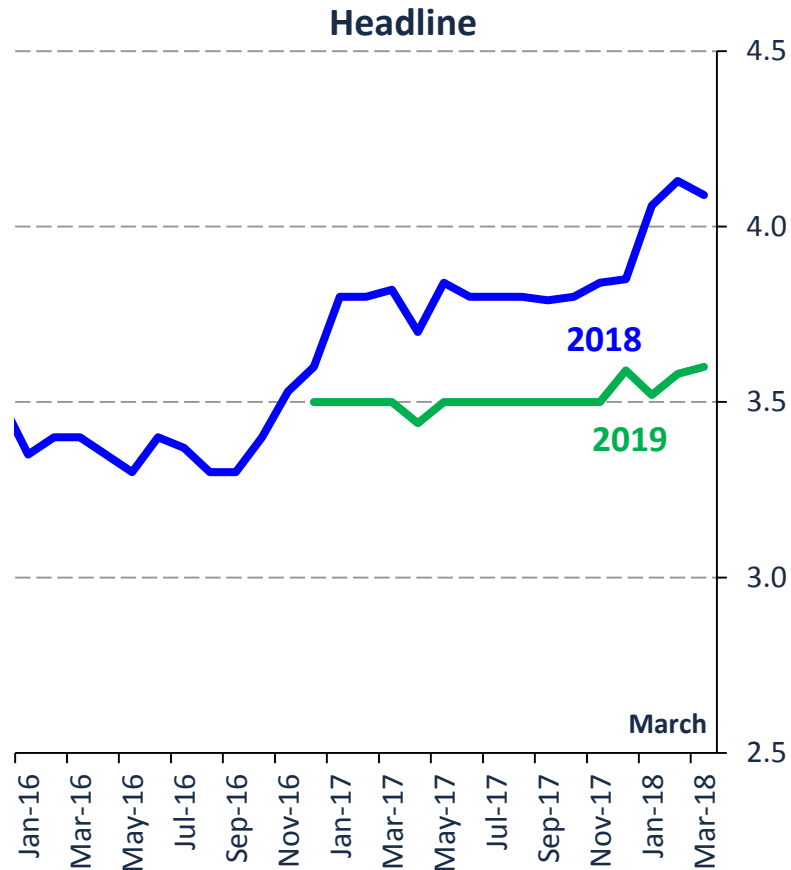### %

Short-Term Neutral Real Rate Range in the Long Term

Short-Term Ex-Ante Real Rate

April

1/ The short-term ex-ante real rate is constructed using the Target for the Overnight Interbank Interest Rate and 12-month inflation expectations from Banco de México Survey. The dotted line corresponds to the midpoint of the range. Source: Banco de México.

The evolution of non-core inflation led to increases in headline inflation expectations for the end of 2018. However, medium- and long-term expectations remained stable, although at around 3.5%, slightly above the target level.

Inflation Expectations
Median, %

Headline

Core

Long-Term

2018

2019

2018

2019

Citibanamex Next 3-8 Years

Next 4 Years

Next 5-8 Years

Market Instruments [1]

Inflation Target

March

March

March
April

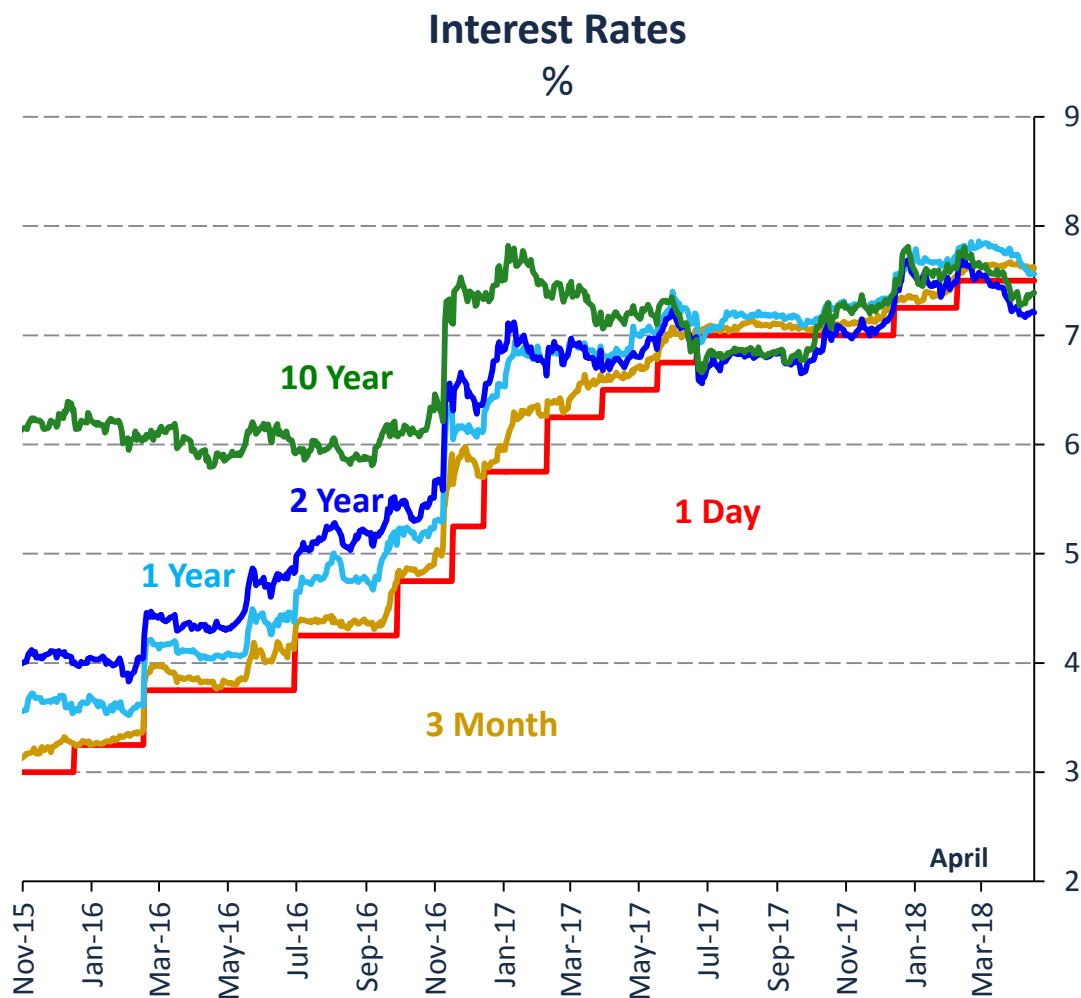

Source: Banco de México Survey (monthly periodicity).

1/ For a description of the estimation of log-term inflation expectations, see the Box "Decomposition of Break-even Inflation" in the Quarterly Report, October – December 2013. The estimate was updated by including data as of November 2017. Source: Banco de México Survey (monthly periodicity) and Citibanamex Survey (biweekly periodicity).

The increase in the reference rate in February has been reflected in higher short-term interest rates, while also contributing to a decline in medium- and longer-term rates.

Interest Rates
%

10 Year
2 Year
1 Year
1 Day
3 Month

Nov-15, Jan-16, Mar-16, May-16, Jul-16, Sep-16, Nov-16, Jan-17, Mar-17, May-17, Jul-17, Sep-17, Nov-17, Jan-18, Mar-18

April

Source: Banco de México and *Proveedor Integral de Precios* (PiP).

Yield Curve
%

Apr 17, 2018
Dec 15, 2017
Sep 29, 2017
Mar 31, 2017
Dec 01, 2015

1 Day
1 3 6 Months
1 2 3 5 10 20 30 Years
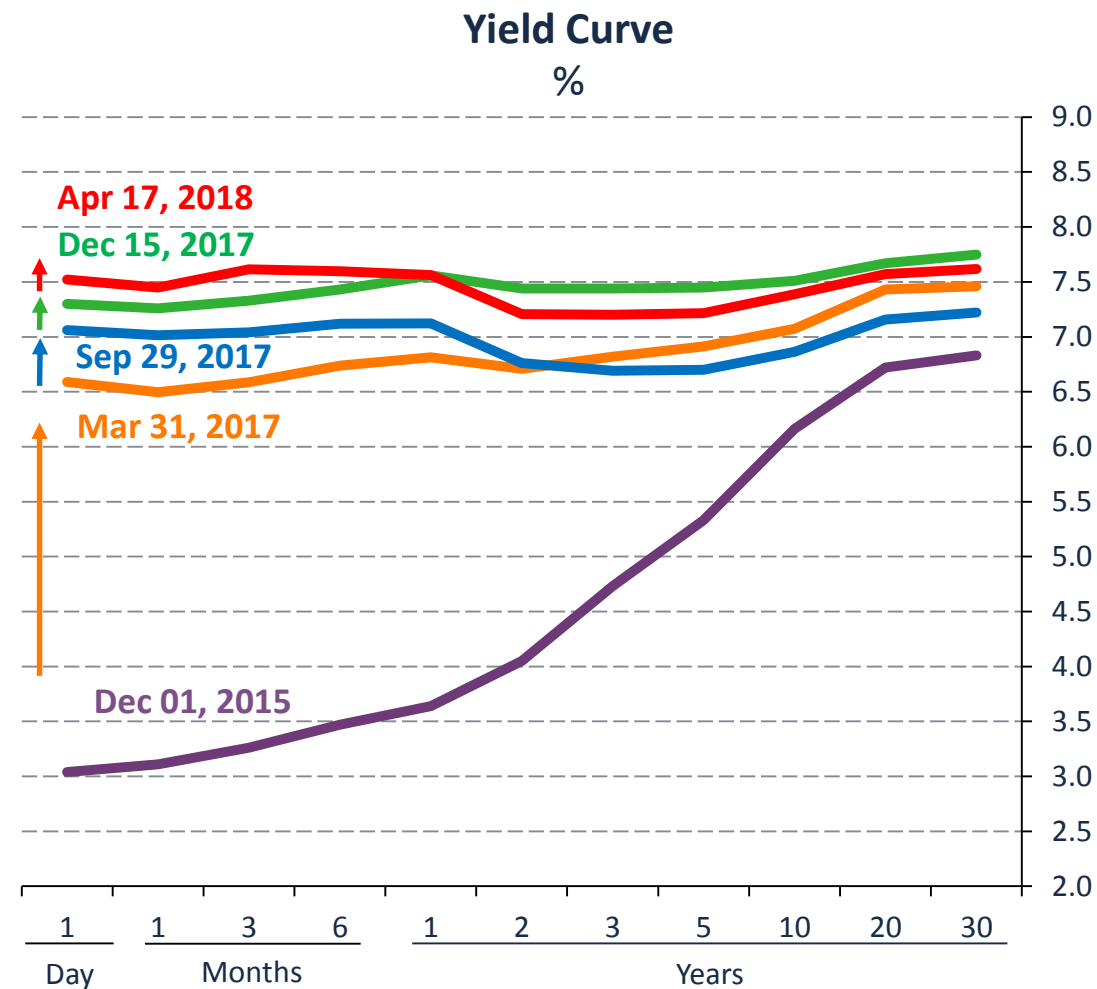
Source: Banco de México and *Proveedor Integral de Precios* (PiP).

# Medium and long-term interest rate spreads between Mexico and the United States have decreased, while medium and long-term bond's holdings by foreign investors have remained relatively stable.

Mexico and United States Interest Rate Spreads Curve [1]
Percentage points

Apr 17, 2018

Dec 15, 2017

Sep 29, 2017

Mar 31, 2017

Dec 01, 2015

1 day | 1 3 6 months | 1 2 3 5 10 20 30 years

Volatility-adjusted 3-month Interest Rate Spread for Selected Emerging Countries [2]
Index

Range
Emerging Economies Average
Mexico

April

Mexico: Government Securities' Holdings by Foreign Investors
MXN billion

Total [3]

Bonds

CETES

April
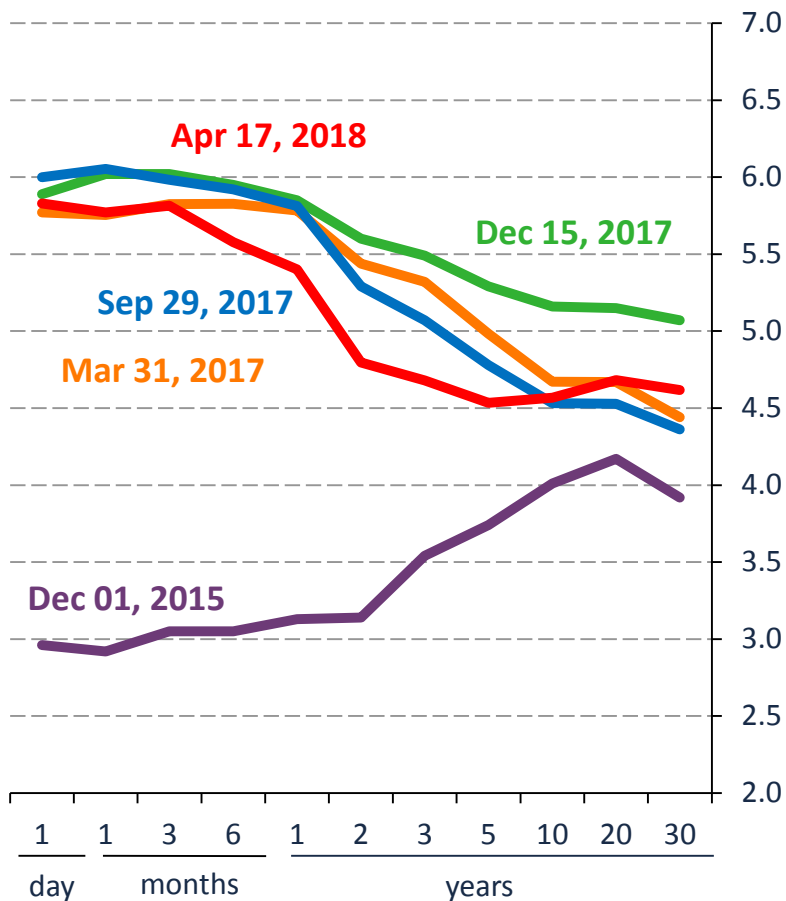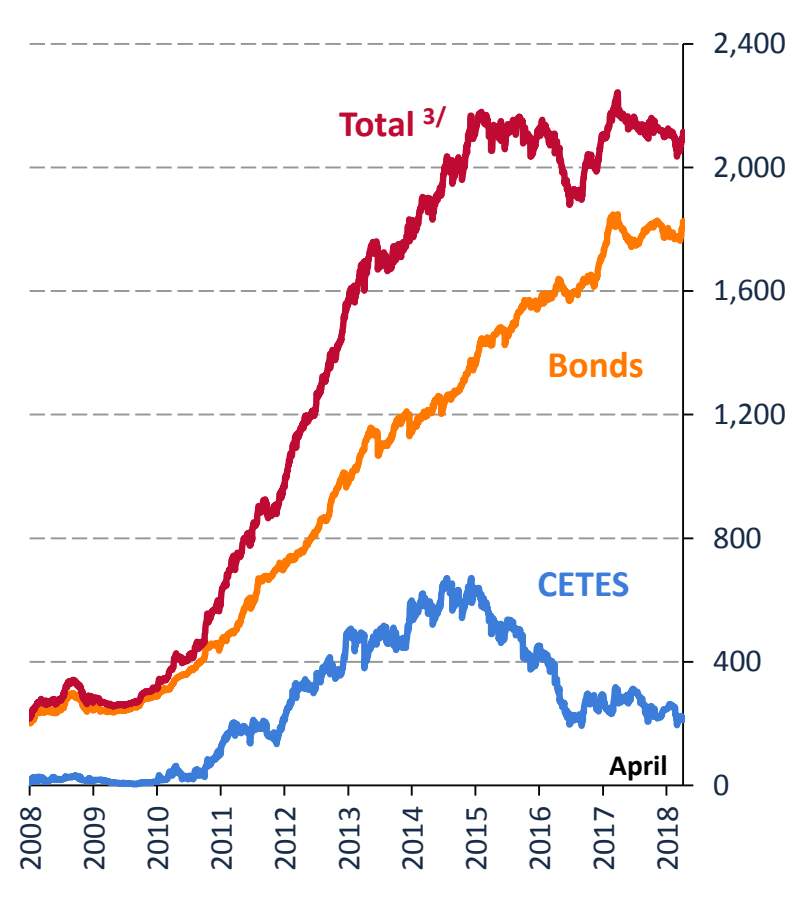
1/ The United States objective rate is the average of the interval considered by the Federal Reserve.
Source: *Proveedor Integral de Precios* (PiP) and U.S. Treasury Department.
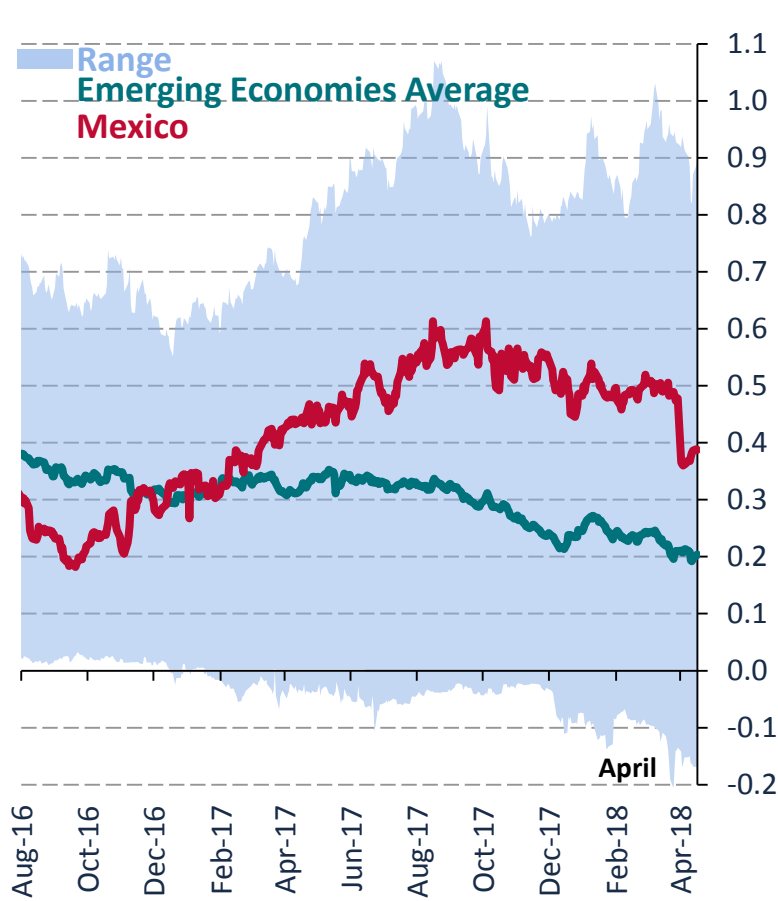
2/ The countries selected are Brazil, Chile, Colombia, Turkey, South Africa, South Korea and Poland.
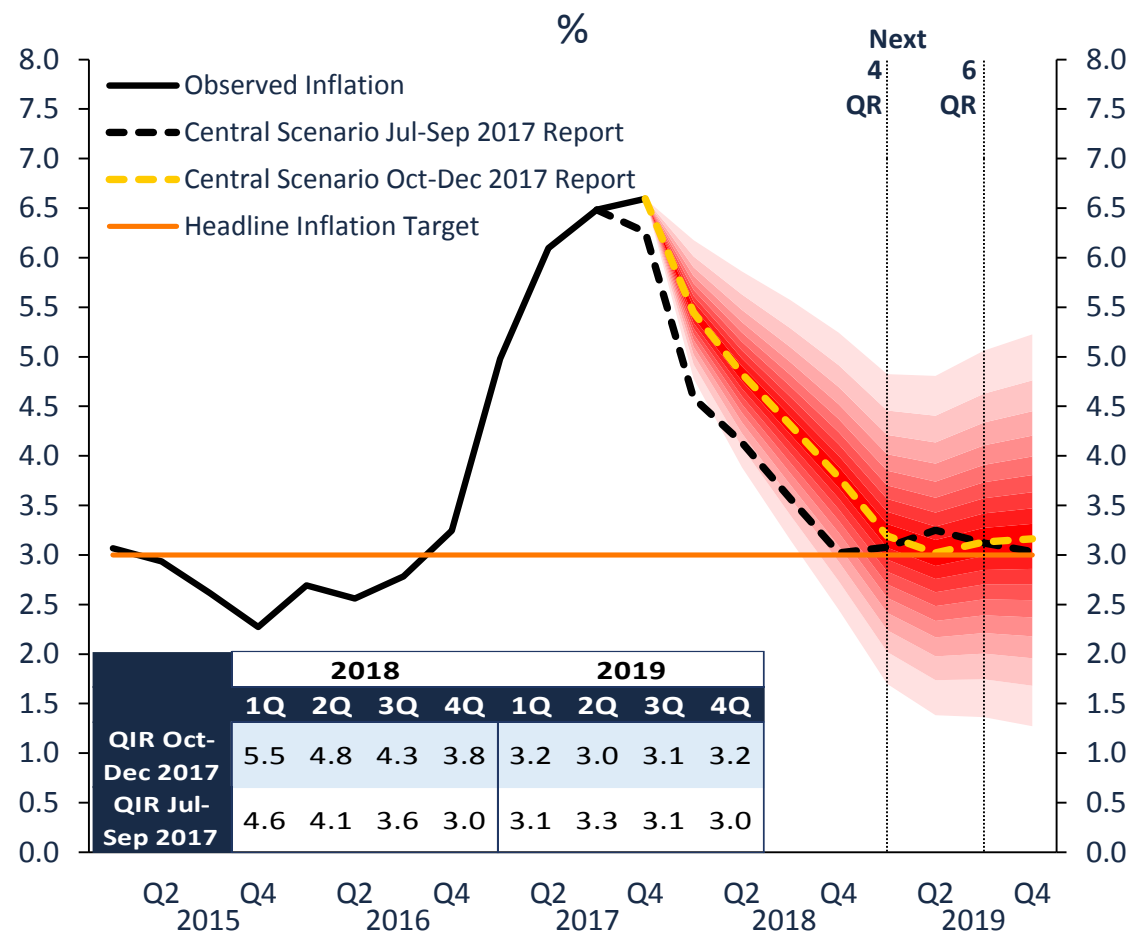Source: Bloomberg.

3/ The total includes CETES, bonds, udibonos, bondes and bondes D.
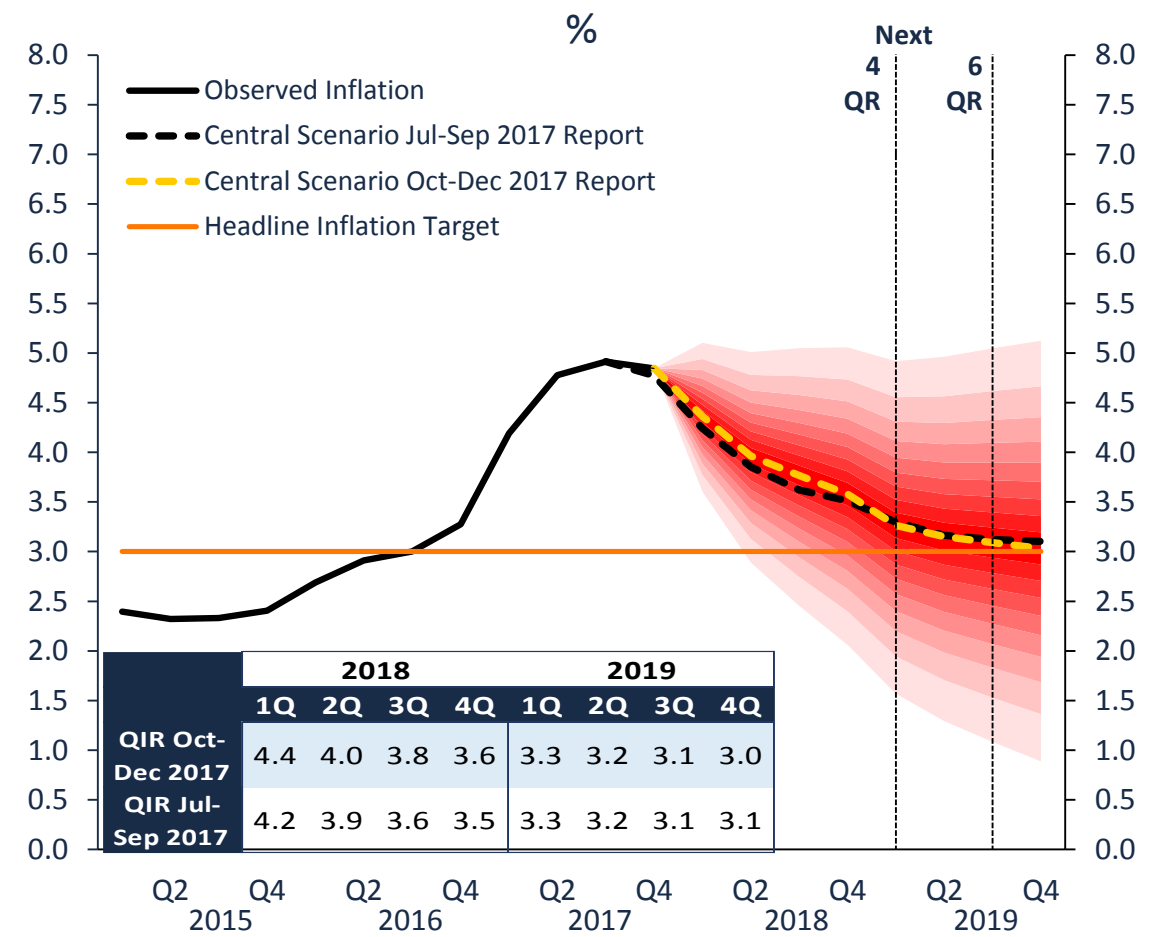Source: Banco de México.

Headline inflation is expected to continue to decline, approaching the 3.0% target during the year, attaining it in Q1 2019, and fluctuating around such target for the remainder of that year. Core inflation will continue to decline gradually, reaching levels close to 3.0% in Q1 2019, and it is expected to consolidate its convergence to 3.0% during the rest of that year.

Fan Chart

Annual Headline Inflation [1/]

%

- Observed Inflation
- Central Scenario Jul-Sep 2017 Report
- Central Scenario Oct-Dec 2017 Report
- Headline Inflation Target

	2018				2019			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
QIR Oct-Dec 2017	5.5	4.8	4.3	3.8	3.2	3.0	3.1	3.2
QIR Jul-Sep 2017	4.6	4.1	3.6	3.0	3.1	3.3	3.1	3.0

Annual Core Inflation [1/]

%

- Observed Inflation
- Central Scenario Jul-Sep 2017 Report
- Central Scenario Oct-Dec 2017 Report
- Headline Inflation Target

	2018				2019			
	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q
QIR Oct-Dec 2017	4.4	4.0	3.8	3.6	3.3	3.2	3.1	3.0
QIR Jul-Sep 2017	4.2	3.9	3.6	3.5	3.3	3.2	3.1	3.1

1/ Quarterly average of annual inflation. The next four and six quarters are indicated as of the first quarter of 2018, that is, the first and third quarters of 2019, periods in which the monetary policy transmission channels fully operate.
Note: For the tables presented, the calculation of annual inflation for each quarter is obtained by comparing the average index of the quarter with respect to the average index of the same quarter of the previous year. Hence, this figures can differ from the simple average of annual inflations of each month of the corresponding quarter.
Source: Banco de México and INEGI.

Monetary Policy Stance

- To guide monetary policy actions, the Governing Board closely monitors *inflation with respect to its expected path*, *considering the adopted monetary policy stance and the horizon at which monetary policy operates*, as well as available information of all inflation determinants and medium- and long-term inflation expectations, including the balance of risks.

- Looking forward, the Board has emphasized that it will continue to follow the:

  - ✓ *Potential pass-through of exchange rate fluctuations on prices.*

  - ✓ *Relative monetary policy stance between Mexico and the U.S.*

  - ✓ *Evolution of slack conditions in the economy.*

- In light of factors that imply risks for inflation and inflation expectations, the **monetary policy** will act in a **timely and robust** manner.

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