# INFLATION REPORT

*March 2018*

## Recent trends and macroeconomic forecasts 2018-2019

CENTRAL RESERVE BANK OF PERU

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# Recent Trends and Macroeconomic Forecasts 2018 - 2019

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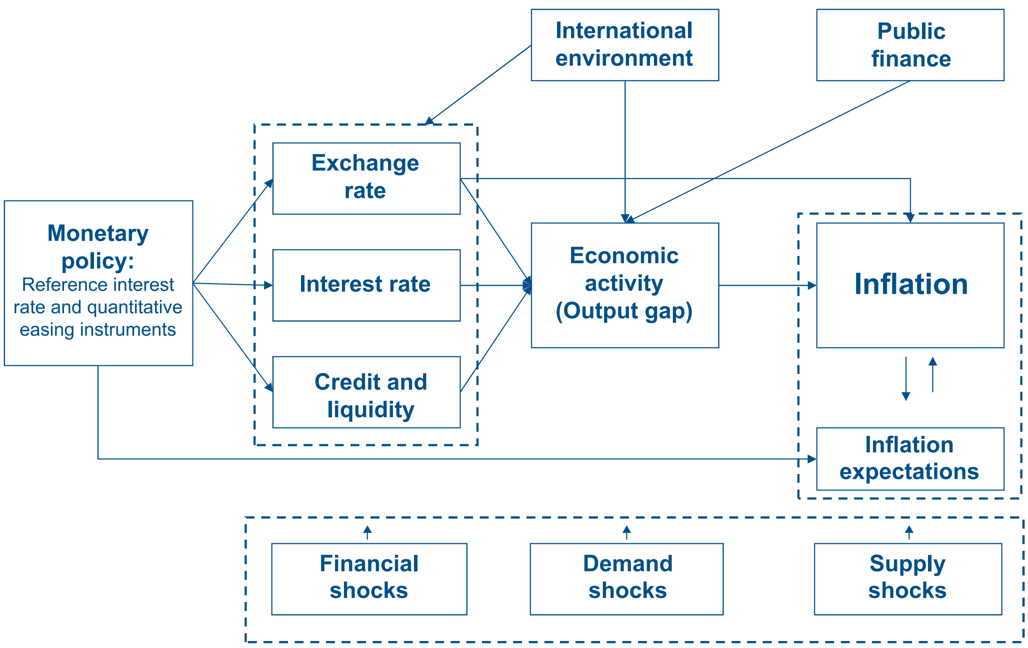


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## CONTENT



**BOXES**



This ***Inflation Report*** was prepared using data on the Balance of Payments and the Gross Domestic Product as of the fourth quarter of 2017, and data on Monetary Accounts, the operations of the Non-Financial Public Sector, Inflation, Financial Markets, and the Exchange Rate as of February 2018.

# Foreword

- According to the Constitution of Peru, the Central Reserve Bank of Peru (BCRP) is a public autonomous entity whose role is to preserve monetary stability. The BCRP is responsible for regulating the money supply and credit in the financial system, for managing the country's international reserves, and for reporting on the nation's finances.

- In order to consolidate this goal, the Bank's monetary policy is based on an inflation targeting scheme, with an inflation target of 2.0 percent, plus or minus one percentage point (between 1.0 and 3.0 percent). The Central Bank's inflation target is aimed at anchoring inflation expectations at a similar level to the inflation rate observed in developed economies and reflects the BCRP's permanent commitment with monetary stability.

- Each month, and according to a previously announced schedule, the Board of BCRP sets a benchmark rate for the interbank lending market. Since this interest rate, which is the monetary operational target, affects the rate of inflation through several channels with time lags, this rate is set on the basis of inflation forecasts and forecasts of inflation determinants.

- Inflation may transitorily deviate from the target range due to shocks that may temporarily affect the supply of goods and services, such as fluctuations in the prices of imported products or domestic climate factors. It should also be pointed out that the effectiveness of monetary policy is also assessed in terms of the success in returning and maintaining inflation expectations within the target range.

- Additionally, the Central Bank implements preventive actions to preserve financial stability and monetary policy transmission mechanisms. Through interventions in the foreign exchange market, the Central Bank reduces excessive volatility in the exchange rate and accumulates international reserves in periods of capital inflows or high export prices, thus developing strengths to face negative events in an economy with still high levels of financial dollarization. The Central Bank also uses other monetary policy tools that affect the volume and composition of credit in a more direct manner, such as reserve requirements in domestic currency and in foreign currency, to avoid excessive credit or credit constraints.

- This Inflation Report includes macroeconomic forecasts that support the monetary policy decisions of BCRP as well as an analysis of the risk factors that can modify such forecasts.

- This Inflation Report was approved by the Board of Directors of BCRP on March 15, 2018.

# Summary


i. During 2017, the **world economy** recorded a growth rate of 3.7 percent, the highest rate since 2011. The increased dynamism of domestic demand and better conditions in the labor market and credit stood out in the developed economies, while growth in the developing countries was favored mostly by higher commodity prices and better international financial conditions. In line with recent data of some global indicators on manufacturing activity, services, and global trade, as well as with a gradual withdrawal of monetary stimulus by the Federal Reserve and other central banks, the projections of global growth for 2018 and for 2019 have been revised up, from 3.7 to 3.8 percent in 2018 and from 3.6 to 3.7 percent in 2019.

ii. In 2017 the terms of trade grew 7.3 percent, reflecting mostly the higher prices of commodity exports. So far this year, metal prices have remained high (as foreseen in our previous Inflation Report), supported by an increased global demand, supply constraints, increased speculative positions, and the depreciation of the dollar. Because of this, the growth of the **terms of trade** in 2018 is also corrected up from 2.8 to 7.4 percent, while the projection of a stabilization of the terms of trade in 2019 remains unchanged.

iii. In 2017, the deficit in the **current account of the balance of payments** declined to 1.3 percent of GDP, reflecting basically a higher trade surplus as a result of the recovery of the terms of trade and sustained growth in our trading partners which translated into a higher volume of exports of both traditional and non-traditional products. In the forecast horizon, the revision of terms of trade on the upside and the higher growth of our trading partners imply a current account deficit of 1.2 and 1.3 percent of GDP in 2018 and 2019, respectively, in line with the expected recovery of domestic demand. The **long term financial account** (equivalent to 4.4 percent of GDP in 2018 and 2019) will continue to be the main source of financing of the balance of payments, exceeding largely the requirements of the current account.

iv. **Economic activity** continued recovering after the reversal of the shocks that affected the economy at the beginning of last year and showed a growth rate of 2.5 percent, driven by the increase observed in the terms of trade. In 2017, **domestic demand** grew 1.6 percent in annual terms as a result of the recovery of private investment in mining a context of higher prices for our mining exports and increased public expenditure during the second half of the year. At the sector level, the growth of the construction sector was noteworthy, in line with the better evolution of public and private investment. The growth of the output, however, was lower than expected since the recovery of investment at the end of the year was lower than anticipated.

The GDP growth rate projected for the forecast horizon has been revised down, from 4.2 in 2018 and 2019 (estimated in the previous report) to 4.0 percent in each

of these years, in line with the lower dynamism of private expenditure due to the deterioration of consumer and business expectations. This effect would be offset in part by the positive impact of the increase in the terms of trade. Public expenditure would recover as estimated in the previous report, in line with the fiscal impulse associated with the Reconstruction Plan and the Pan American Games.

v. In 2017, the **fiscal deficit** increased to 3.1 percent of GDP, after having recorded a rate of 2.6 percent of GDP in 2016. This higher deficit reflected mainly the reduction of 0.5 percent of GDP in current revenues, affected by the slowdown of economic activity, as well as changes in the tax regime (implementation of the new tax regime for MSE and the Fair VAT), and the increase of tax rebates, which showed historic levels. Another element that contributed to this, although to a lesser extent, was the increase of the non-financial expenditure of the general government due to higher current expenditure in wages. It is also worth pointing out the reversal of gross capital formation since the third quarter of 2017.

Revenue is expected to recover in the forecast horizon, driven by the better performance of domestic demand, increased revenue from mining, lower rebates, and a higher tax withholdings rate. Public investment is also expected to show a faster pace of growth due to the beginning of the reconstruction works after the damages caused by El Niño Costero and the projects to be carried out for the Pan American Games. Thus, the fiscal deficit projected for 2018 remains at 3.5 percent of GDP. In 2019, the deficit is expected to decrease to 2.9 percent of GDP, in line with fiscal consolidation. This projection implies a positive weighted fiscal stimulus in 2018, which would reverse in 2019, coinciding with the closure of the output gap.

vi. **Credit to the private sector** recorded a YoY growth rate of 6.6 percent in 2017 and increased to a YoY rate to 7.3 percent in February 2018, this growth rate being explained mainly by the growth of personal loans (9.6 percent) in a context of recovery of the demand of the private sector. In the forecast horizon, credit to the private sector is expected to evolve in line with the pace of growth of domestic demand, with growth rates of 7.5 percent and 7.8 percent being expected in 2018 and 2019, respectively. This is consistent with the monetary easing measures implemented, that is, with the reduction of the benchmark interest rate and with the reduction of the rates of reserves requirements in both domestic currency and foreign currency.

vii. **Inflation** decreased from 1.54 percent in November to 1.18 percent in February 2018 due mainly to the rapid reversal of the persistent supply shocks that affected agricultural products, i.e. the water deficit registered in late 2016 and El Niño Costero in the first quarter of 2017, as well as due to the context of a weak economic cycle. Moreover, expectations of inflation in twelve months have also continued to decline and remain within the inflation target range since March 2017.

viii. In this context, the Board of BCRP lowered the **benchmark rate**, for the second time time this year, to 2.75 percent in March. This reduction in the benchmark interest rate is consistent with inflation's convergence to a rate of 2.0 percent once the effect of the reversal of the supply shocks that led inflation to the lower band of the target range disappears.

ix. **Inflation** is expected to show levels below 2.0 percent during the first half of 2018 due to the correction of the supply shocks that increased prices between the last months of 2016 and the first half of 2017, and to converge gradually towards 2 percent thereafter. Moreover, inflation without food and energy and inflation expectations are also expected to show levels around 2 percent in the forecast horizon, in a context in which no inflationary pressures are foreseen on the side of demand and moderate levels of imported inflation are expected.

x. The balance of the **risk factors** considered in this Report –demand shocks (a more gradual recovery of private and public investment), greater volatility in international financial markets, and supply shocks (increase in the prices of fuels and in the prices of some imported food products) translates into a slight downward bias on the inflation forecast.

## SUMMARY OF INFLATION REPORT FORECAST

| | 2016 | 2017 | 2018 1/ | | 2019 1/ | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Real % change** | | | | | | |
| 1. Gross Domestic Product | 4.0 | 2.5 | 4.2 | 4.0 | 4.2 | 4.0 |
| 2. Domestic demand | 1.1 | 1.6 | 4.4 | 4.2 | 4.3 | 4.2 |
| a. Private consumption | 3.3 | 2.5 | 3.3 | 3.2 | 3.8 | 3.6 |
| b. Public consumption | -0.5 | 1.0 | 3.6 | 4.0 | 2.0 | 2.5 |
| c. Fixed private investment | -5.7 | 0.3 | 6.5 | 5.5 | 7.5 | 7.5 |
| d. Public investment | 0.2 | -2.8 | 12.5 | 14.2 | 4.0 | 5.0 |
| 3. Exports (good and services) | 9.5 | 7.2 | 3.5 | 3.2 | 3.8 | 3.6 |
| 4. Imports (good and services) | -2.2 | 4.0 | 4.3 | 4.0 | 4.3 | 4.3 |
| 5. Economic growth in main trading partners | 2.8 | 3.5 | 3.4 | 3.6 | 3.3 | 3.4 |
| **Memo:** | | | | | | |
| Output gap 2/ (%) | -1.0 ; 0.0 | -1.3 ; -0.7 | -0.5 ; 0.0 | -1.0 ; -0.3 | -0.5 ; 0.0 | -0.7 ; 0.0 |
| **% change** | | | | | | |
| 6. Inflation | 3.2 | 1.4 | 2.0 | 2.0 | 2.0 | 2.0 |
| 7. Expected inflation 3/ | - | - | 2.5 | 2.2 | 2.7 | 2.5 |
| 8. Expected depreciation 3/ | - | - | 1.4 | 0.8 | 0.6 | 1.1 |
| 9. Terms of trade 4/ | -0.7 | 7.3 | 2.8 | 7.4 | 0.0 | 0.2 |
| a. Export prices | -3.6 | 13.1 | 4.0 | 12.0 | 1.0 | 0.1 |
| b. Import prices | -3.0 | 5.4 | 1.2 | 4.3 | 1.0 | -0.1 |
| **% change** | | | | | | |
| 10. Currency in circulation | 6.5 | 6.7 | 6.0 | 7.6 | 6.0 | 8.0 |
| 11. Credit to the private sector 5/ | 5.6 | 6.6 | 7.0 | 7.5 | 7.0 | 7.8 |
| **% GDP** | | | | | | |
| 12. Gross fixed investment | 22.8 | 21.6 | 22.5 | 22.2 | 23.1 | 22.8 |
| 13. Current account of the balance of payments | -2.7 | -1.3 | -1.6 | -1.2 | -1.7 | -1.3 |
| 14. Trade balance | 1.0 | 2.9 | 3.1 | 4.3 | 2.9 | 4.2 |
| 15. Long-term external financing of the private sector 6/ | 4.6 | 5.6 | 4.1 | 4.4 | 4.2 | 4.4 |
| 16. Current revenue of the general government | 18.5 | 18.0 | 18.3 | 18.3 | 18.5 | 18.5 |
| 17. Non-financial expenditure of the general government | 19.9 | 20.0 | 20.5 | 20.3 | 20.0 | 20.0 |
| 18. Overall balance of the non-financial public sector | -2.6 | -3.1 | -3.5 | -3.5 | -2.9 | -2.9 |
| 19. Balance of total public debt | 23.6 | 24.7 | 26.2 | 25.3 | 27.4 | 26.3 |
| 20. Balance of net public debt | 6.7 | 9.4 | 12.6 | 12.3 | 15.0 | 14.8 |

1/ Forecast.
2/ Differential between GDP and potential GDP (as a percentage of potential GDP).
3/ Survey on expectations to the analysts and financial entities.
4/ Average.
5/ Includes loans made by banks' branches abroad.
6/ Includes net direct investment, portfolio investment and private sector's long term disbursement.
IR: Inflation Report.

# I. International Environment

## World Economy

1. The global economy grew 3.7 percent in 2017, the highest growth rate observed since 2011, due to a synchronized growth in the world economy. Growth in the developed economies was favored by an increased dynamism of domestic demand and better conditions, both in the labor market and the credit market, while growth in the developing countries was driven by higher commodity prices, better international financial conditions, and the boost associated with China's economic growth.

2. The projections of global growth for 2018 and 2019 have been revised up from 3.7 to 3.8 percent in 2018 and from 3.6 to 3.7 percent in 2019, in line with recent indicators on manufacturing activity and services, favorable conditions in the labor markets of most developed economies, and the recovery of global trade. This scenario is consistent with a gradual withdrawal of monetary stimulus by the Federal Reserve (Fed) and other central banks.

**Table 1**
**WORLD GDP GROWTH**
(Annual % change)

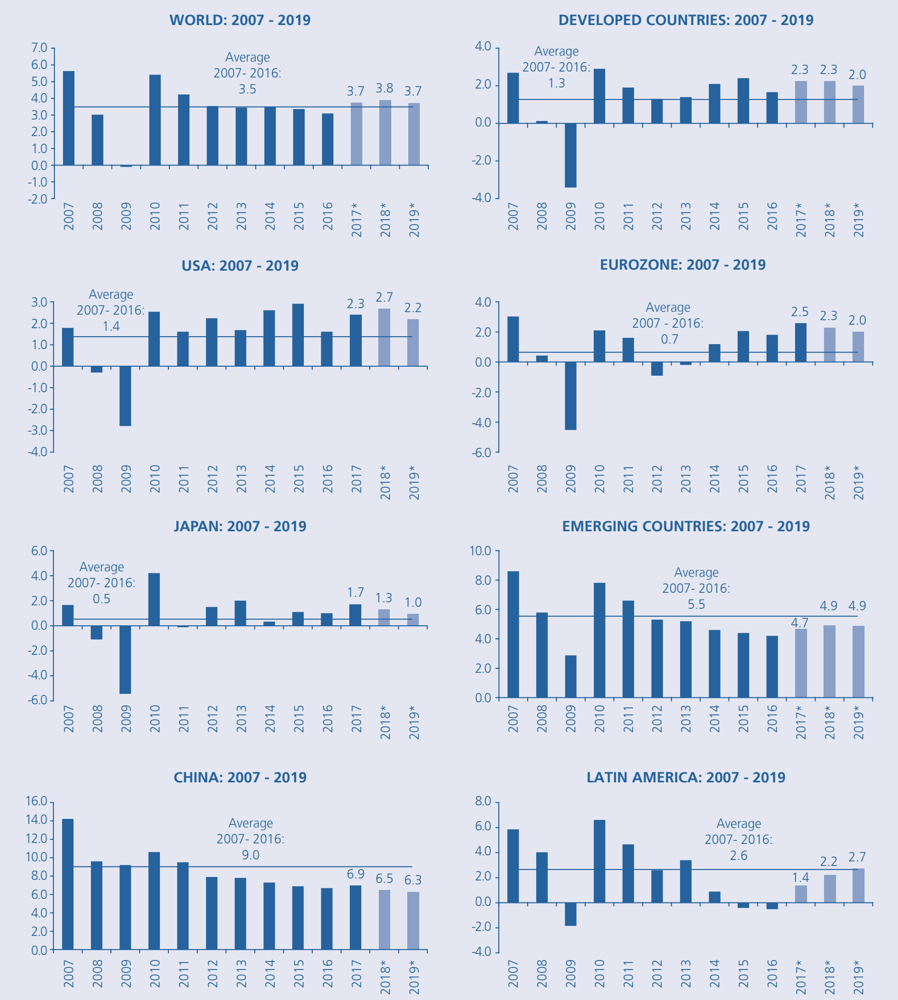
| | PPP%[1/] | Trading Peru %[1/] | 2016 | 2017* | 2018* | | 2019* | |
|---|---|---|---|---|---|---|---|---|
| | | | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Advanced economies** | **41.9** | **47.3** | **1.7** | **2.3** | **2.0** | **2.3** | **1.9** | **2.0** |
| *Of which:* | | | | | | | | |
| 1. United States of America | 15.5 | 18.0 | 1.5 | 2.3 | 2.3 | 2.7 | 2.0 | 2.2 |
| 2. Eurozone | 11.8 | 11.2 | 1.8 | 2.5 | 2.1 | 2.3 | 1.8 | 2.0 |
| 3. Japan | 4.4 | 3.1 | 1.0 | 1.7 | 1.1 | 1.3 | 1.0 | 1.0 |
| 4. United Kingdom | 2.3 | 1.2 | 1.8 | 1.8 | 1.3 | 1.4 | 1.3 | 1.4 |
| **Emerging market and developing economies** | **58.1** | **52.7** | **4.2** | **4.7** | **4.9** | **4.9** | **4.9** | **4.9** |
| *Of which:* | | | | | | | | |
| 1. Developing Asia | 31.6 | 28.0 | 6.4 | 6.5 | 6.5 | 6.5 | 6.4 | 6.5 |
| China | 17.8 | 22.9 | 6.7 | 6.9 | 6.4 | 6.5 | 6.2 | 6.3 |
| India | 7.2 | 2.4 | 7.1 | 6.7 | 7.6 | 7.4 | 7.9 | 7.8 |
| 2. Commonwealth of Independent States | 4.5 | 0.6 | 0.4 | 2.2 | 2.2 | 2.2 | 2.2 | 2.2 |
| Russia | 3.2 | 0.5 | -0.2 | 1.8 | 1.7 | 1.7 | 1.7 | 1.7 |
| 3. Latin America and the Caribbean | 7.9 | 21.9 | -0.5 | 1.4 | 2.4 | 2.2 | 2.7 | 2.7 |
| Brazil | 2.6 | 4.5 | -3.4 | 1.0 | 2.5 | 2.5 | 2.4 | 2.4 |
| Chile | 0.4 | 3.0 | 1.7 | 1.5 | 2.9 | 3.0 | 2.7 | 3.0 |
| Colombia | 0.6 | 2.6 | 1.6 | 1.8 | 2.9 | 2.9 | 3.0 | 3.0 |
| Mexico | 1.9 | 2.9 | 2.4 | 2.1 | 2.0 | 2.2 | 2.5 | 2.5 |
| Peru | 0.3 | - | 4.0 | 2.5 | 4.2 | 4.0 | 4.2 | 4.0 |
| **World Economy** | **100.0** | **100.0** | **3.1** | **3.7** | **3.7** | **3.8** | **3.6** | **3.7** |
| Memo: | | | | | | | | |
| Peru's trading partners [1/ 2/] | 64.8 | | 2.8 | 3.5 | 3.5 | 3.6 | 3.3 | 3.4 |

1/ 2016.
2/ Basket of Peru's 20 main trading partners.
* Forecast.
Source: Bloomberg, FMI, and Consensus Forecast.

The growth forecast in the United States has seen the highest upward revision, in line with a tax cut program that would have an impact on growth in the short term. The emerging countries, on the other hand, would show similar growth rates to those foreseen in the previous report.

3. Despite this revision, the growth forecast still shows a series of risks on the downside. In financial markets, there is the risk of a disorderly adjustment and abrupt corrections in the price of assets due to changes in the policies of withdrawal of monetary stimulus. It is worth pointing out that, despite its short duration, an adjustment episode was observed in February after the market interpreted the indicators of activity in the United States released as elements that would lead the Fed to make greater adjustments in its interest rates.

**Graph 1**
**GDP GROWTH**
(Annual % change)




* Forecast.
Source: Bloomberg, FMI, and Consensus Forecast.

On the trade side, there is still the risk of having a context marked by increased protectionism associated with the U.S. trade policy and by the Brexit negotiations. As at the date of this report, the U.S. government has announced the application of a tax on imports of steel and aluminum of 25 and 10 percent, respectively (excluding imports from Canada and Mexico from this tax), which increases the probabilities of a trade war should the affected countries introduce retaliation actions.

On the other hand, the probability of seeing an abrupt economic slowdown in China has decreased substantially.

4. In the **United States**, data at end-2017 show a slightly better-than-expected evolution: the growth of GDP in the fourth quarter (2.5 percent) reflected a positive performance in most of the components of expenditure. In line with this, and foreseeing a more expansionary fiscal scenario, the GDP growth projection for 2018 has been revised up from 2.3 to 2.7 percent and the growth projection for 2019 has been revised up from 2.0 to 2.2 percent. It is worth mentioning that this more expansionary fiscal scenario is associated mainly with the tax reform approved in December which would imply a fiscal stimulus of approximately US$ 1.5 trillion in 10 years.

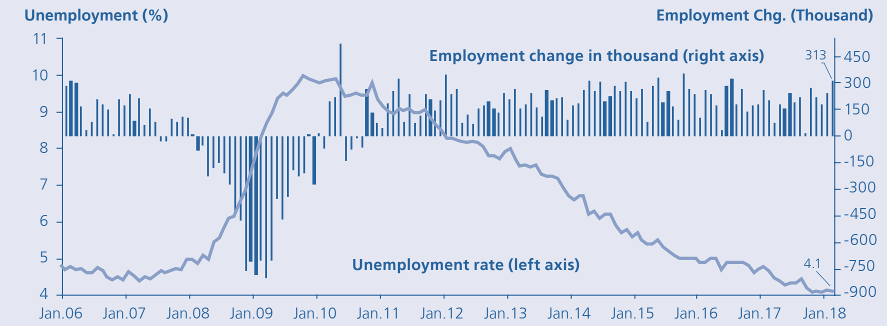
**Table 2**
**USA: GDP**
(Annual % change)

| | 2015 | 2016 | 2017 | | | | |
|---|---|---|---|---|---|---|---|
| | | | Q1 | Q2 | Q3 | Q4 | Year |
| Personal consumption | 2.5 | 2.7 | 1.9 | 3.3 | 2.2 | 3.8 | 2.7 |
| Gross fixed investment | 0.9 | -1.6 | -1.2 | 3.9 | 7.3 | 3.5 | 3.2 |
| Non-residential investment | 2.3 | -0.6 | 7.2 | 6.7 | 4.7 | 6.6 | 4.7 |
| Change on inventories * | 0.2 | -0.4 | -1.5 | 0.1 | 0.8 | -0.7 | -0.1 |
| Exports | 0.1 | -0.3 | 7.3 | 3.5 | 2.1 | 7.1 | 3.4 |
| Imports | -0.8 | 1.3 | 4.3 | 1.5 | -0.7 | 14.0 | 3.9 |
| Government expenditure | 0.3 | 0.8 | -0.6 | -0.2 | 0.7 | 2.9 | 0.1 |
| GDP | 2.9 | 1.5 | 1.2 | 3.1 | 3.2 | 2.5 | 2.3 |

* Contribution to growth.
Source: BEA.

As pointed out in previous reports, the domestic demand has been showing a sustained recovery. Consumption, which showed a higher rate of growth than the output for the second consecutive year, has been supported by the favorable conditions observed in the labor market: between December and February, an average of 242 thousand jobs were created per month, the rate of unemployment remained at 4.1 percent –its lowest level since 2000–, and the participation rate rose to 63.0 percent. On the other hand, investment, particularly non-residential investment, has shown a sustained pace of growth, reflecting higher spending on machinery and equipment, in line with the positive trend observed in corporate returns.

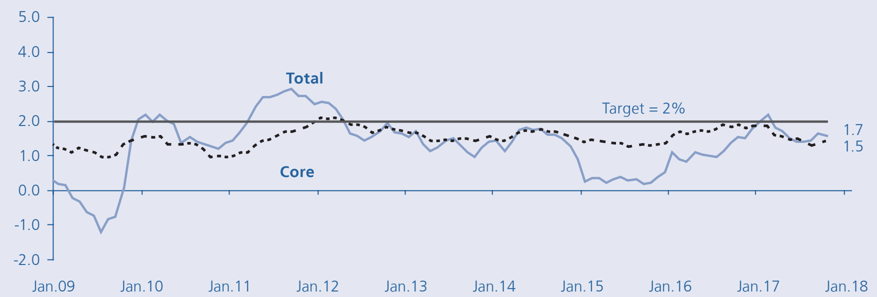
**Graph 2**
**USA: EMPLOYMENT AND UNEMPLOYMENT RATE**




Source: Bloomberg.

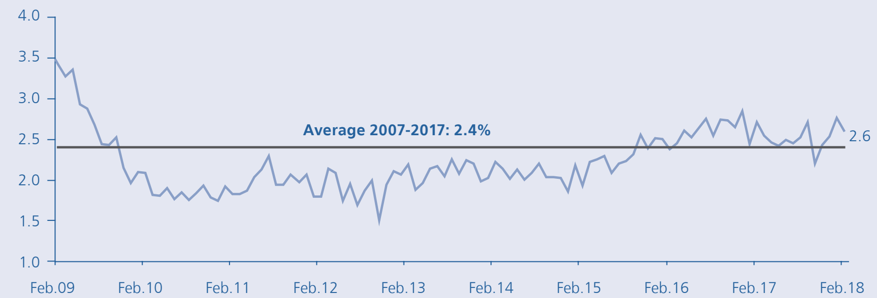
Inflation has remained below the target (2 percent) despite the recent improvement of the labor market. In January, the personal consumption expenditure price index (PCE) recorded an annual rate of 1.7 percent. The core PCE price index was 1.5 percent, similar to that recorded since November. Moreover, in February the average wage per hour increased 2.6 percent compared to same month of the previous year.

**Graph 3**
**USA: PERSONAL CONSUMPTION EXPENDITURE (PCE)**
(Annual % change)




Source: Bloomberg.

**Graph 4**
**USA: AVERAGE HOURLY WAGE IN THE PRIVATE SECTOR**
(Annual % change)




Source: Bloomberg.

The impact of fiscal stimulus on economic activity, the improvements in the labor market, and the evolution of inflation suggest that the output of the United States would be in its potential level, reversing in this way the negative output gap observed since 2009 as a result of the international financial crisis. This could mean more inflationary pressures in the forecast horizon, in line with the market's revision of growth on the upside.

In this context, after maintaining its rates unchanged in January, the Fed decided to raise its range of rates by 25 bps to 1.50-1.75 percent in its meeting of March. The projections of the Committee members showed a correction on the upside on the outlook for growth and inflation, whereas unemployment was revised down, in line with the most recent data. Moreover, the Fed maintains its profile of rates for 2018 and has raised it slightly for 2019 and 2020.

**Table 3**
**FED: FORECASTING***

| | 2018 | | 2019 | | 2020 | | Long-term | |
|---|---|---|---|---|---|---|---|---|
| | Dec.17 | Mar.18 | Dec.17 | Mar.18 | Dec.17 | Mar.18 | Dec.17 | Mar.18 |
| **Growth** | 2.5 | 2.7 | 2.1 | 2.4 | 2.0 | 2.0 | 1.8 | 1.8 |
| **Unemployment rate** | 3.9 | 3.8 | 3.9 | 3.6 | 4.0 | 3.6 | 4.6 | 4.5 |
| **Inflation (PCE)** | 1.9 | 1.9 | 2.0 | 2.0 | 2.0 | 2.1 | 2.0 | 2.0 |
| **Core Inflation (Core PCE)** | 1.9 | 1.9 | 2.0 | 2.1 | 2.0 | 2.1 | - | - |
| Memo: Core PCE excluding food and energy. | | | | | | | | |
| **Interest rate (%)** | 2.1 | 2.1 | 2.7 | 2.9 | 3.1 | 3.4 | 2.8 | 2.9 |

* It adds data from 16 individual projections of the FED's members at the end of period.

However, given the strengthening of the labor market, the possible pass-through of wage pressures on inflation acquires greater importance and could become a factor that could influence the speed and magnitude of the interest rate adjustments. Another important factor that could affect the Fed decisions is the expansionary fiscal policy, which has implied upward revisions on the outlook for growth in the following years. In this context, markets expect three or four rate hikes during 2018.

5. The growth projection for the **Eurozone** in 2018 has been revised up from 2.1 to 2.3 percent and from 1.8 to 2.0 percent in 2019.

   In 2017, the region's economy grew 2.5 percent, its highest growth rate in ten years, supported by the domestic demand and by a favorable international environment. Domestic demand showed a stronger level of growth due to the improvement of consumer confidence and business confidence, the index of economic confidence of the European Commission reaching a maximum level not observed since 2000. This increased level of growth was also supported by the continuity of expansionary policies as well as by improvements in labor market indicators –the rate of unemployment in the Eurozone (6.7 percent) is the lowest rate recorded since January 2009.

   In the following two years, the economy is foreseen to follow an expansionary path, although showing a more moderate pace of growth, with growth being led by private consumption, supported by the labor market. On the other hand, investment would continue to grow, favored by domestic demand, global growth, favorable financial conditions, and corporate returns.

Moreover, inflation, which reached 1.5 percent in 2017 due mainly to the evolution of energy prices, is expected to register minimum changes in the next years given that low salary pressures are foreseen. In this context, the European Central Bank (ECB), which in January reduced its asset purchase program to €30 billion monthly, has maintained its interest rates and has recently said that monetary stimulus is still necessary and that it will give attention to the impact that the appreciation of the euro may have on achieving the inflation target.

The risks on the downside for this scenario are associated with the consequences of the Brexit and with political events in Italy (general elections that did not define a majority have led to a negotiation process to form a government) and in Spain (appointment of authorities in Catalonia).

6. **Japan** recorded a GDP growth rate of 1.7 percent in 2017. In line with this rate, the growth projection for 2018 has been revised up from 1.1 to 1.3 percent, and a greater dynamism of investment and exports is expected in the first months of the year, although the possibility of a gradual withdrawal of fiscal stimulus is still considered. The growth projection for 2019 remains at 1.0 percent.

7. In **China**, like in the third quarter of 2017, the economy grew 6.8 percent in the fourth quarter, as a result of which China's GDP in 2017 grew 6.9 percent. Since a slowdown in the growth of credit and public investment in infrastructure is still foreseen for the following years, a growth rate of 6.5 is projected for 2018 and a growth rate of 6.3 percent is estimated for 2019.

**Table 4**
**CHINA'S ECONOMIC INDICATORS**

| Indicators | December | | | | 2018 | |
|---|---|---|---|---|---|---|
| | 2014 | 2015 | 2016 | 2017 | Jan. | Feb. |
| Annual GDP (%)[1/] | 7.3 | 6.9 | 6.7 | 6.9 | -- | -- |
| Industryl Production (Annual % change)[2/] | 7.9 | 5.9 | 6.0 | 6.2 | 7.2 | 7.2 |
| Investment in fixed assets (Accum. annual % change)[2/] | 15.7 | 10.0 | 8.1 | 7.2 | 7.9 | 7.9 |
| Investment in infrastructure (Accum. annual % change)[2/] | 21.5 | 17.2 | 17.4 | 19.0 | 16.1 | 16.1 |
| Retail sales (Annual % change)[2/] | 11.9 | 11.1 | 10.9 | 9.4 | 9.7 | 9.7 |
| Exports (Annual % change) | 9.7 | -1.6 | -6.2 | 10.9 | 11.1 | 44.5 |
| Imports (Annual % change) | -2.4 | -7.4 | 3.1 | 4.5 | 36.9 | 6.3 |
| Copper imports (Volume, Annual % change) | 17.3 | 12.6 | 13.5 | -0.8 | 24.9 | 1.3 |
| Total new financing (Annual % change) | 15.2 | 12.4 | 12.7 | 12.3 | 11.3 | 11.2 |
| Consumer Price Index (Annual % change) | 1.5 | 1.6 | 2.1 | 1.8 | 1.5 | 2.9 |

1/ Percentage change of each year respect to the previous year until 2017.
2/ Data from January and February 2018 corresponds to change in the first two months of the year.
Source: Bloomberg and IMF.

8. During the second half of 2017, the pace of economic activity in **Latin America** remained on the positive side, but showing moderate growth rates in all the countries of the region with inflation targeting regimes. Growth was supported by an international environment marked by high commodity prices and by capital inflows. In 2018 and 2019 the region is expected to grow 2.2 and 2.7 percent, respectively.

Signals of economic recovery are beginning to be seen in **Brazil** and growth in 2018 is foreseen to be supported by the dynamism of consumption. In **Chile**, the reduction of political risks (after the election results), the flexible monetary policy, and the high prices of copper are shaping a favorable scenario for this year. The expansion of mine La Escondida would also contribute to this.

In **Mexico**, high inflation, which is still one of the limitations for growth, has led the central bank to raise interest rates and uncertainty regarding the negotiations of the North American Free Trade Agreement (NAFTA) with United States and Canada has increased the political risks associated with the next presidential elections.

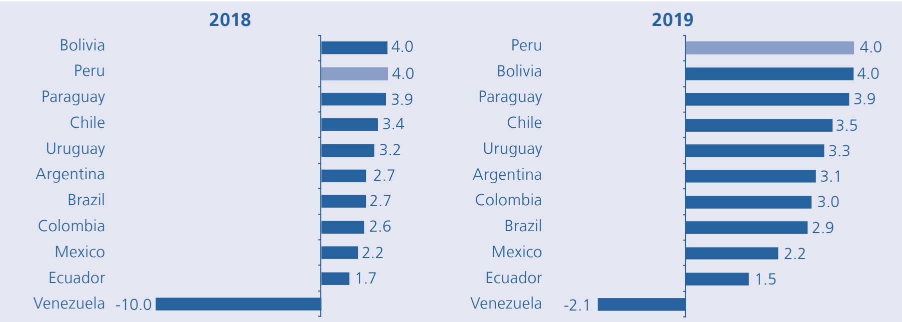
**Table 5**
**GDP: QARTERLY GROWTH RATE**
(%)

| | Brazil | Chile | Colombia | Mexico | Peru |
|---|---|---|---|---|---|
| Q1.15 | -1.6 | 2.6 | 2.6 | 3.5 | 1.9 |
| Q2.15 | -2.7 | 2.1 | 3.0 | 3.0 | 3.2 |
| Q3.15 | -4.3 | 2.4 | 3.2 | 4.0 | 3.3 |
| Q4.15 | -5.6 | 1.9 | 3.4 | 2.7 | 4.6 |
| Q1.16 | -5.3 | 2.5 | 2.5 | 3.0 | 4.6 |
| Q2.16 | -3.4 | 1.7 | 2.4 | 3.3 | 3.9 |
| Q3.16 | -2.7 | 1.8 | 1.5 | 2.1 | 4.7 |
| Q4.16 | -2.5 | 0.5 | 1.8 | 3.3 | 3.1 |
| Q1.17 | 0.0 | 0.1 | 1.5 | 3.3 | 2.3 |
| Q2.17 | 0.4 | 1.0 | 1.7 | 1.8 | 2.6 |
| Q3.17 | 1.4 | 2.2 | 2.3 | 1.6 | 2.9 |
| Q4.17 | 2.1 | n.d | 1.6 | 1.5 | 2.2 |

Source: Central banks and statistic institutions.

In **Colombia**, the economy has grown below its potential level of growth, affected by the increase of the VAT (in a context of fiscal consolidation) and by the scanty dynamism of infrastructure programs (hindered by corruption cases and by the control established by fiscal goals).

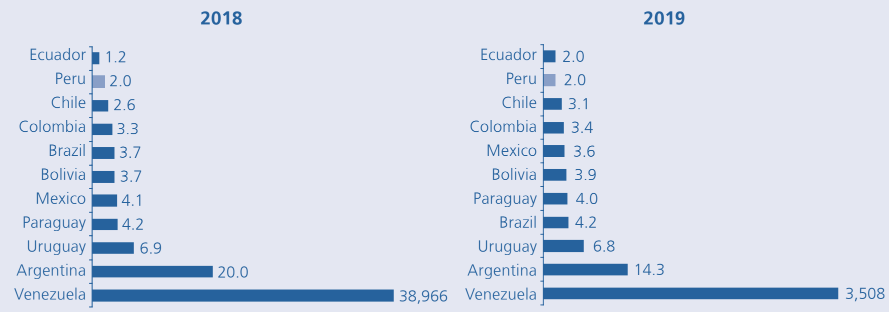
**Graph 5**
**GDP GROWTH**
(% change)




Source: Latin American Consensus Forecast (March 2018) and BCRP (Peru).

In recent months, except for Mexico, countries in the region have shown moderate inflationary pressures. The decline of food prices has been a favorable factor for the level of prices in Brazil, Mexico, and Peru. In Colombia, inflation has begun to slow down due to base effects (the increase of the VAT early in 2017) and in Chile the appreciation of the peso has generated downward pressures on the tradable component of the basket of goods.

**Graph 6**
**INFLATION**
(Dec./Dec.)




Source: Latin American Consensus Forecast (March 2018) and BCRP (Peru).

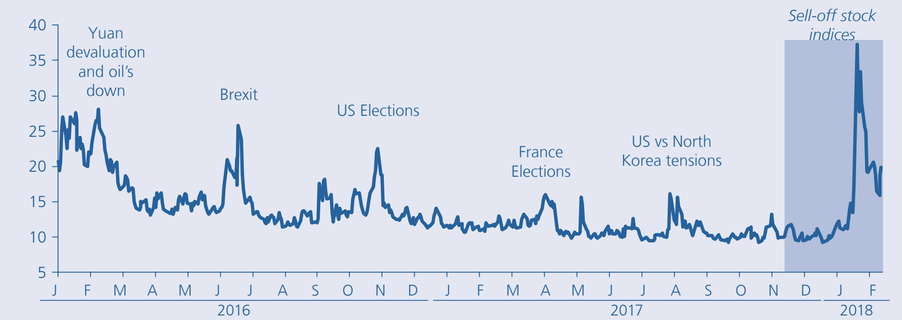
Low growth and moderate inflation rates would continue to be seen in the forecast scenario. However, there are risk factors associated with elections (Brazil, Colombia, and Mexico) and with the feasibility of actions aimed to ensure fiscal consolidation (the reform of the pension system in Brazil). In the international arena, the risk factors are associated, on the financial side, with a disorderly adjustment and with excessive market volatility if there is a more pronounced adjustment of rates by the Fed and, on the side of trade, with a slowdown of growth in China. In addition to this, the prospects for growth could be affected by the NAFTA renegotiations in the particular case of Mexico.

## Financial Markets

9. Financial markets, and especially variable income markets, were favored by the previously mentioned positive indicators of activity, showing significant increases until the first days of February, particularly in the developed economies and in China.

   The markets were affected by a volatility event in the first two weeks of February after the data on inflation and salaries in the USA were released. This led to an increase in risk aversion, to a sell-off in stock markets, and to an increase in the yields of the Treasury bonds because of expectations of a possible lower monetary stimulus from the major central banks (Fed, European Central Bank, and the Bank of England) and led, temporarily, to a market correction.

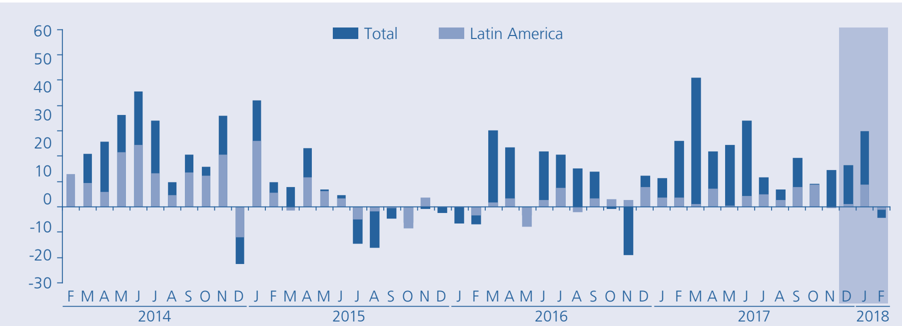
**Graph 7**
**VOLATILITY OF U.S. STOCK INDICES**
(January 2016 - February 2018)




Source: Bloomberg.

Capital flows to the emerging economies were supported by the perception that global growth is synchronized and that the emerging economies are just starting the expansionary stage of the business cycle. This trend was interrupted, however, by the above-mentioned period of volatility and a negative net flow was observed for the first time in fifteen months. In the region, the volume of capital flows is still low, some specific events (i.e. the slow implementation of the pensions reform in Brazil and political uncertainty associated with the elections in Colombia and Mexico) having affected the pace of flows.

**Graph 8**
**NET INFLOWS OF CAPITAL OF NON-RESIDENTS TO EMERGING COUNTRIES**
(Billion US$)




Source: Institute of International Finance (IIF).

10. So far this year, the **dollar** has shown a depreciatory trend associated with expectations about monetary policy outside the United States. In the particular case of Europe, the Bank of England is expected to raise again its rate in the first half of the year and the policy statement of the European Central Bank (ECB) is also expected to reflect a less

"easing bias". There are also doubts about the capability of the tax reform to boost potential growth in the U.S. However, the depreciation trend of the dollar reversed temporarily and partially during the sell-off period during which economic agents increased their positions of dollars in cash.

**Table 6**
**EXCHANGE RATE**
(Monetary unit per US$)

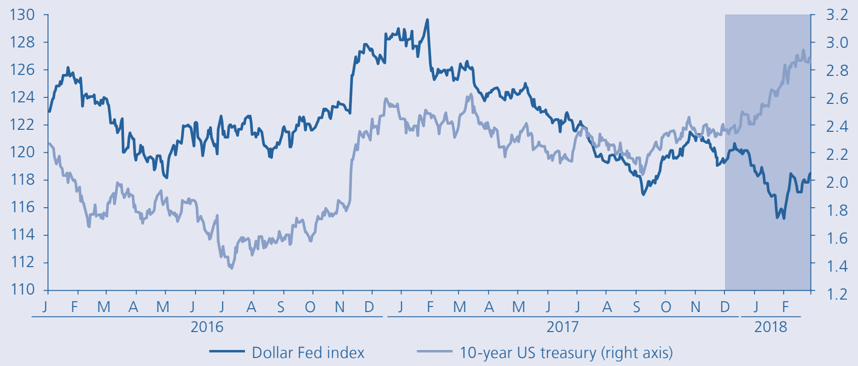
| | | Dec.17 | Feb.18 | % change Feb.18/Dec.17 |
|---|---|---|---|---|
| Dollar Index* | US Dollar Index | 92.12 | 90.61 | -1.6 |
| Eurozone | Euro | 1.200 | 1.219 | 1.6 |
| Switzerland | Swiss franc | 0.974 | 0.944 | -3.1 |
| Japan | Yen | 112.70 | 106.68 | -5.3 |
| United Kingdom | Pound sterling | 1.351 | 1.376 | 1.8 |
| Brazil | Real | 3.313 | 3.247 | -2.0 |
| Chile | Peso | 616 | 595 | -3.4 |
| Colombia | Peso | 2,987 | 2,868 | -4.0 |
| Mexico | Peso | 19.66 | 18.85 | -4.1 |
| Peru | Sol | 3.24 | 3.27 | 0.9 |
| Russia | Ruble | 4.05 | 3.92 | -3.2 |
| South Africa | Rand | 12.39 | 11.80 | -4.7 |
| Turkey | Lira | 3.79 | 3.80 | 0.2 |
| China | Yuan | 6.51 | 6.33 | -2.7 |
| South Korea | Won | 18.64 | 20.12 | 8.0 |
| India | Rupee | 57.67 | 56.36 | -2.3 |
| Indonesia | Rupee | 13,560 | 13,615 | 0.4 |
| Malaysia | Ringgit | 4.05 | 3.92 | -3.2 |
| Thailand | Bath | 32.57 | 31.50 | -3.3 |

* Increase in the index means an US dollar appreciation.
Source: Reuters and Fed.

Most of the emerging currencies appreciated against the dollar, favored by the weakness of the dollar in financial markets and by the increase in commodity prices. In Latin America, the appreciation of the currencies was also influenced by advances in the renegotiation of NAFTA (Mexico) and by lower political risk in some countries.

11. In general terms, the yields of **bonds** rose due to increased prospects of global growth and inflation. Moreover, in the United States, the yields were also influenced by expectations of a greater issuance of Treasury bonds (in response to the higher deficit anticipated following the tax reform) and by the Federal Reserve's lower pace of bond reinvestment.

**Graph 9**
**DOLLAR FED INDEX AND 10-YEAR US TREASURY YIELDS**
(January 2016 - February 2018)




Source: Bloomberg and Fed.

In Europe, yields were influenced by expectations of a normalization of monetary policy in the United Kingdom and the European Central Bank. Other factors that contributed to this were the progress achieved in Germany to form a new government and the advances in the negotiations of the Brexit.

**Table 7**
**YIELDS ON 10-YEAR TREASURY BONDS**

| | Dec.17 | Feb.18 | Change (bps.) Feb.18/Dec.17 |
|---|---|---|---|
| USA | 2.41 | 2.86 | 46 |
| Germany | 0.42 | 0.65 | 23 |
| France | 0.78 | 0.92 | 14 |
| Italy | 2.01 | 1.97 | -3 |
| Spain | 1.56 | 1.53 | -3 |
| Greece | 4.07 | 4.38 | 31 |
| Switzerland | -0.15 | 0.09 | 24 |
| Japan | 0.04 | 0.05 | 1 |
| United Kingdom | 1.19 | 1.50 | 31 |
| Brazil | 10.26 | 9.61 | -65 |
| Colombia | 6.48 | 6.59 | 11 |
| Chile | 4.55 | 4.55 | 0 |
| Mexico | 7.65 | 7.62 | -2 |
| Peru | 4.87 | 4.50 | -37 |
| Russia | 3.87 | 4.33 | 46 |
| South Africa | 8.72 | 8.72 | 0 |
| Turkey | 11.35 | 11.59 | 24 |
| China | 3.90 | 3.85 | -6 |
| South Korea | 2.47 | 2.74 | 27 |
| India | 7.33 | 7.73 | 40 |
| Indonesia | 6.29 | 6.59 | 30 |
| Malaysia | 3.91 | 4.03 | 12 |
| Thailand | 2.32 | 2.39 | 6 |

Source: Bloomberg.

12. The **variable-income** markets showed volatility in the first part of the year. Initially, stock markets were favored by the prospects of a synchronized global growth, tax cuts in the USA, and positive corporate results. However, indications of higher inflationary pressures in the USA and the risk that the Fed would respond with a faster pace of rate adjustments led to a general collapse of stock markets and to increased risk aversion during the first two weeks of February. In this context, stock markets reversed totally or partially the gains obtained early in the year. At the time when this report was written, volatility has returned to the markets after USA announced the imposition of tariffs and after new signals of a greater adjustment of the Fed monetary policy have been seen.

**Table 8**
**STOCK MARKETS**

| | | Dec.17 | Feb.18 | % change Feb.18/Dec.17 |
|---|---|---|---|---|
| VIX* | S&P 500 | 11.04 | 19.85 | 8.8 |
| USA | Dow Jones | 24,719 | 25,029 | 1.3 |
| Germany | DAX | 12,918 | 12,436 | -3.7 |
| France | CAC 40 | 5,313 | 5,320 | 0.1 |
| Spain | IBEX 35 | 10,044 | 9,840 | -2.0 |
| Italy | FTSE MIB | 21,853 | 22,608 | 3.5 |
| Greece | ASE | 802 | 836 | 4.1 |
| Switzerland | SMI | 9,382 | 8,906 | -5.1 |
| Japan | Nikkei 225 | 22,765 | 22,068 | -3.1 |
| United Kingdom | FTSE 100 | 7,688 | 7,232 | -5.9 |
| Brazil | Bovespa | 76,402 | 85,354 | 11.7 |
| Mexico | IPC | 49,354 | 47,438 | -3.9 |
| Chile | IGP | 27,981 | 28,132 | 0.5 |
| Colombia | IGBC | 11,478 | 11,411 | -0.6 |
| Peru | Ind. Gral. | 19,974 | 20,832 | 4.3 |
| Russia | INTERFAX | 1,154 | 1,285 | 11.4 |
| South Africa | JSE | 59,505 | 58,325 | -2.0 |
| Turkey | XU100 | 115,333 | 118,951 | 3.1 |
| China | Shangai C. | 3,307 | 3,259 | -1.4 |
| South Korea | Seul C. | 2,467 | 2,427 | -1.6 |
| India | CNX Nifty | 10,531 | 10,493 | -0.4 |
| Indonesia | JCI | 6,356 | 6,597 | 3.8 |
| Malaysia | KLSE | 1,797 | 1,856 | 3.3 |
| Thailand | SET | 1,754 | 1,830 | 4.4 |

1/ Change in percentage points.
Source: Bloomberg.

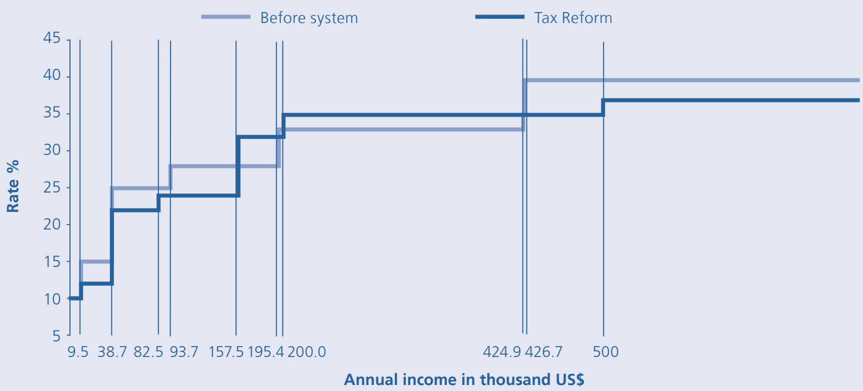
**Box 1**
**IMPLICATIONS OF THE TAX REFORM IN THE UNITED STATES**

The tax reform approved by the government of the United States in late December 2017 includes the following measures:

(i) Reducing the corporate tax rate from 35 to 21 percent as from 2018, as a result of which this tax stands below the average tax rate in OECD countries. The previous 35 percent tax rate was the highest rate in this group of countries.

(ii) Changes in several sections of the tax rates on personal income. As you can see in the graph below, these new tax rates imply a lower tax burden for the segments of lower and higher incomes.

**CHANGE IN SCALE OF TAX ON PERSONAL INCOME**




Source: Tax Cuts and Jobs Act.

(iii) Establishment of a one-time tax rate of 15.5 percent for the repatriation of liquid assets of US corporate branches abroad and a tax rate of 8 percent for the repatriation of non-liquid assets. The profits of US companies outside the US are estimated to amount to nearly US$ 2.6 trillion. The aim of this measure is to get this money back to the US through lower rates. Apple, one of the US companies that has accumulated more assets abroad, announced that it will repatriate around US$ 250 billion in a period of 5 years, which would represent a tax collection of US$ 38 billion for the government. Companies can divide the tax payment for asset repatriation into eight annual payments.

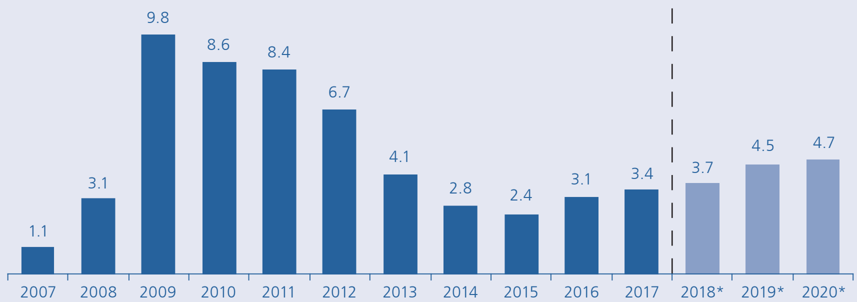
(iv) A 20 percent deduction for the first US$ 157,500 of net income for owners of pass-through or "transfer" companies. These are companies in which the owner can benefit from the tax scales corresponding to personal taxes instead of paying the corporate tax.

(v) Other measures: A reduction in the amount of the deductible interest for mortgage loans for new houses (from US$ 1 million to US$ 750 thousand), an increase of the child tax credit, and the establishment of a US$ 10 thousand limit for the deduction of state and local taxes (SALT).

The fiscal cost of the package in the next ten years (2018-2027) is estimated at US$ 1.5 trillion. However, some estimates, such as that of the government's Joint Committee on Taxation (JCT), add the following impacts to the tax package: (i) greater tax revenue generated by positive macroeconomic effects (US$ 451 billion), and (ii) ) the higher cost due to the increase in the debt service (US$ 66 billion). In this scenario, the fiscal cost of the tax reform would decrease to US$ 1.07 trillion.

In line with this, all the investment firms have revised up the deficit projections for 2018 and 2019. Most of them estimate that the fiscal deficit would be around 3.7 percent in 2018 and around 4.5 percent in 2019.

**FISCAL DEFICIT**
(% GDP)




* Mean of forecasting (Bloomberg).

In line with the higher fiscal deficit, investment firms have revised up the projection of US growth for 2018 and 2019. The impact ranges between 0.2 and 0.4 percentage points. The revision of the growth forecast in 2019 is somewhat lower. On the other hand, the IMF estimates that the package would imply an upward revision from 2.3 to 2.7 percent in 2018 and from 2.1 to 2.5 percent in 2019, and an impact of 1.2 percent on cumulative growth in the 2018-2020 period.

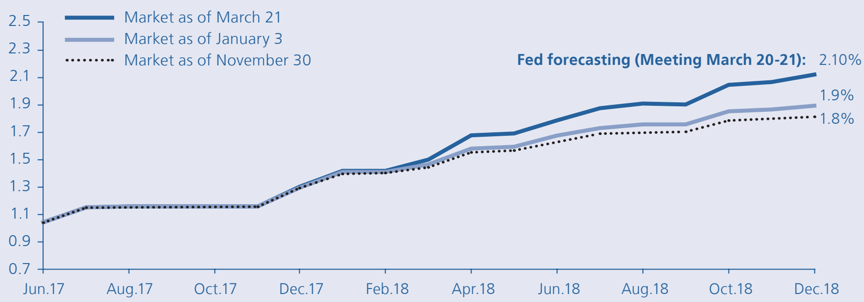
At the level of aggregate spending, the greatest impact would be observed in investment due to the significant reduction in the corporate rate. The impact could be a first round impact (greater investment taking advantage of lower taxes) and a second round impact (through higher corporate profits). At the level of economic sectors, greater benefits would be expected in sectors with high accumulated profits outside the US (i.e. the automotive, technology, and pharmaceutical sectors) and in sectors that currently face the highest effective rates (energy and banking)[1]. However, there would be a negative effect in the short term in the case of banks due

1 Bloomberg, December 16. "Corporate Winners and Losers in the GOP final Tax Bill."

to the devaluation of deferred tax assets (or DTA). The DTA is a tax shield to be used in subsequent fiscal periods – In the case of banks, this shield came mainly from the losses generated during the financial crisis. The lower valuation of the DTA, due to the decrease in rates, implies an impact of approximately US$ 19 billion in the case of the Citigroup, for example.

However, the impact of the fiscal package on aggregate demand could generate some bottlenecks. Investment banks estimate that, by 2018, the impact of 0.3 percent (derived from this fiscal package) on demand would imply a greater use of installed capacity in a context in which the output gap has been closed and in which the labor market is tight (banks assume that unemployment would fall from 4.1 percent to 3.7 percent). In this context, demand pressures are likely to lead to a greater number of hikes in the Fed rates. After the fiscal package was approved on December 22, the implicit rate on forward contracts increased.

**FED: PROJECTED RATE HIKES AND FUTURE MARKETS***
(%)




* In the middle point of the range of interest rate.
Source: Fed, BCRP, and Bloomberg.

Moreover, the long-term rates are being pushed upwards as a result of this tax package and also as a result of the approval of the 2019 budget, the proposal of the infrastructure plan, and expectations of greater inflationary pressures. Should these higher interest rates materialize, they would offset the impact of the tax package on growth.

In line with this, the greatest pace of growth is expected to be concentrated in the short term and its impact is expected to be limited. On the one hand, the application of more restrictive monetary policies under this scenario would limit the expansion of private spending, while on the other hand, high levels of indebtedness would subsequently lead to fiscal adjustment. Thus, some investment firms estimate that the full impact of the package would be observed in 2018, while the IMF[2] estimates that from 2021 the fiscal deficit would require adjustment measures that would have negative effects on growth.

2 World Economic Outlook Update: January 2018, IMFC.

# II. Balance of Payments

## Current Account

13. The terms of trade and the sustained growth of world trade have continued to be driven up by a favorable international environment, which has resulted in a general increase of 21.3 percent in the value of our traditional and non-traditional exports in 2017 (after recording an increase of 7.6 percent in 2016). Thus, the trade balance accumulated 6 consecutive quarters of surpluses, closing 2017 with a surplus of US$ 6.27 billion, a result not observed since 2012 when the surplus reached US$ 6.39 billion. As a result, the deficit in the **current account of the balance of payments** has decreased from 2.7 percent of GDP in 2016 to 1.3 percent of GDP in 2017.

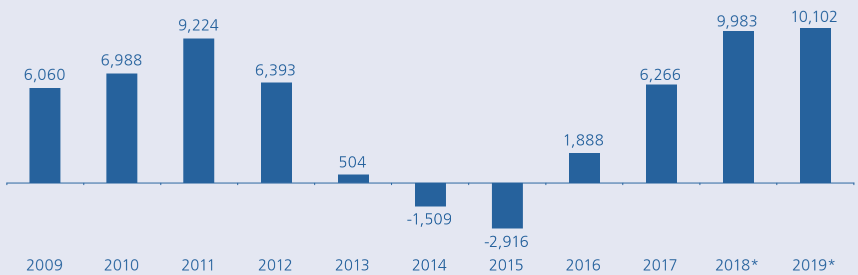
**Table 9**
**BALANCE OF PAYMENTS**
(Million US$)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **I. CURRENT ACCOUNT BALANCE** | **-5,303** | **-2,716** | **-3,777** | **-2,693** | **-4,051** | **-3,049** |
| *% GDP* | *-2.7* | *-1.3* | *-1.6* | *-1.2* | *-1.7* | *-1.3* |
| 1. Trade Balance | 1,888 | 6,266 | 7,136 | 9,983 | 7,092 | 10,102 |
| a. Exports | 37,020 | 44,918 | 48,109 | 51,942 | 50,339 | 53,822 |
| Of which: | | | | | | |
| i) Traditional | 26,137 | 33,124 | 35,597 | 38,472 | 36,925 | 39,647 |
| ii) Non traditional | 10,782 | 11,663 | 12,381 | 13,316 | 13,269 | 14,006 |
| b. Imports | -35,132 | -38,652 | -40,974 | -41,959 | -43,247 | -43,720 |
| 2. Services | -1,974 | -1,434 | -2,056 | -2,235 | -2,109 | -2,375 |
| 3. Investment income | -9,184 | -11,260 | -12,611 | -14,235 | -12,960 | -14,713 |
| 4. Current transfers | 3,967 | 3,712 | 3,754 | 3,794 | 3,927 | 3,937 |
| Of which: Remittances | 2,884 | 3,051 | 3,194 | 3,194 | 3,322 | 3,332 |
| **II. FINANCIAL ACCOUNT** | **5,504** | **4,652** | **6,307** | **3,733** | **6,591** | **4,559** |
| 1. Private Sector | 2,847 | 1,419 | 3,390 | 2,681 | 4,478 | 3,378 |
| a. Long-term | 3,709 | 1,653 | 3,390 | 3,161 | 4,478 | 3,798 |
| b. Short-term [1/] | -862 | -235 | 0 | -480 | 0 | -420 |
| 2. Public Sector [2/] | 2,657 | 3,233 | 2,917 | 1,053 | 2,113 | 1,181 |
| **III. CHANGE ON NIRs** | **201** | **1,936** | **2,530** | **1,040** | **2,540** | **1,510** |
| Memo: Long-term external financing of the private sector [3/] (% GDP) | 4.6 | 5.6 | 4.1 | 4.4 | 4.2 | 4.4 |

1/ Includes net errors and omissions, and NIR's effect valuation.
2/ Includes exceptional financing.
3/ Includes net foreign investments, portfolio investment, and private sector's long-term disbursement.
* Forecast.
IR: Inflation Report.

The forecast scenario in this report considers that the current international context of greater global growth and better metal prices will continue during the forecast horizon. Current account deficit levels of 1.2 and 1.3 percent of GDP are expected for 2018 and 2019, respectively, in line with a greater surplus in the trade balance that would reach US$ 9.98 billion in 2018 and US$ 10.10 billion in 2019. Long-term financing for the private sector would continue to be the main source of financing the balance of payments (4.4 percent of GDP in 2018 and 2019).

**Graph 10**
**TRADE BALANCE: 2009-2019**
(Million US$)




* Forecast.

In the forecast horizon, exports would be favored by the high prices of our main minerals, as well as by the higher volumes of exports of non-traditional products in a context of recovery of global activity. On the other hand, imports are expected to grow in line with the anticipated evolution of domestic demand.

The growth of the value of exports in 2018 and 2019 would be associated not only with better prices but also with a greater volume, since exports are expected to grow by more than 3.0 percent in terms of volume in both years.

**Table 10**
**TRADE BALANCE**
(% change)

| | 2016 | 2017 | 2018* | 2019* |
|---|---|---|---|---|
| **1. Value:** | | | | |
| Exports | 7.6 | 21.3 | 15.6 | 3.6 |
| Traditional products | 11.5 | 26.7 | 16.1 | 3.1 |
| Non-traditional products | -1.0 | 8.2 | 14.2 | 5.2 |
| Imports | -5.9 | 10.0 | 8.6 | 4.2 |
| **2. Volume:** | | | | |
| Exports | 11.6 | 7.3 | 3.2 | 3.5 |
| Traditional products | 16.7 | 7.4 | 1.7 | 2.9 |
| Non-traditional products | 0.9 | 7.0 | 8.0 | 5.0 |
| Imports | -2.8 | 4.4 | 4.0 | 4.3 |
| **3. Price:** | | | | |
| Exports | -3.6 | 13.1 | 12.0 | 0.1 |
| Traditional products | -4.3 | 17.9 | 14.2 | 0.1 |
| Non-traditional products | -1.9 | 1.1 | 5.7 | 0.2 |
| Imports | -3.0 | 5.4 | 4.3 | -0.1 |

* Forecast.

The increase in the trade balance would be offset by more negative factor incomes resulting from the increase in the profits of foreign mining companies due to the higher prices of minerals.

## Terms of Trade

14. In 2018, Peru's terms of trade would grow 7.4 percent, showing a higher increase than that estimated in December due to the recent (and higher-than-expected) rise in the prices of basic metals and gold. The prices have been pushed up by an increased global demand, supply constraints, greater speculative positions, and the depreciation of the dollar.

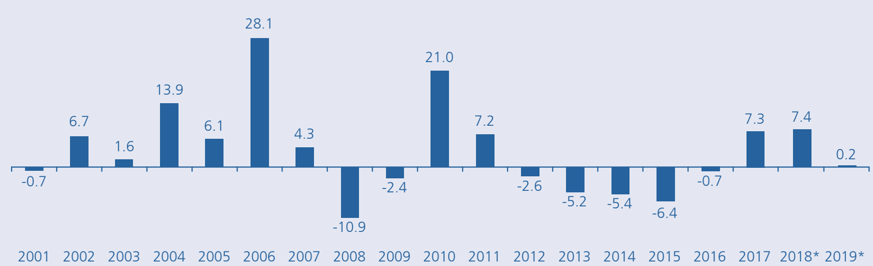
It is estimated that the prices of exports would increase 12.0 percent while the prices of imports would increase 4.3 percent. In 2019, these prices are expected to remain stable.

**Table 11**
**TERMS OF TRADE: 2017 - 2019**
(Annual average data)

| | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|
| | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Terms of Trade (Annual % chg.)** | **7.3** | **2.8** | **7.4** | **0.0** | **0.2** |
| **Price of exports (Annual % chg.)** | **13.1** | **4.0** | **12.0** | **1.0** | **0.1** |
| *Copper (US$ cents per pound)* | *280* | *300* | *317* | *300* | *316* |
| *Zinc (US$ cents per pound)* | *131* | *137* | *154* | *133* | *143* |
| *Lead (US$ cents per pound)* | *105* | *108* | *116* | *108* | *115* |
| *Gold (US$ per troy ounce)* | *1,257* | *1,288* | *1,315* | *1,295* | *1,300* |
| **Price of imports (Annual % chg.)** | **5.4** | **1.2** | **4.3** | **1.0** | **-0.1** |
| *Oil (US$ per barrel)* | *51* | *54* | *60* | *51* | *57* |
| *Wheat (US$ per ton)* | *145* | *153* | *161* | *171* | *173* |
| *Maize (US$ per ton)* | *131* | *145* | *144* | *157* | *156* |
| *Soybean oil (US$ per ton)* | *707* | *754* | *716* | *755* | *735* |
| *Whole milk (US$ per ton)* | *3,081* | *2,959* | *3,037* | *3,010* | *2,940* |

* Forecast.
IR: Inflation Report.
Source: BCRP.

**Graph 11**
**TERMS OF TRADE: 2001 - 2019**
(Annual average % change)




* Forecast.
Source: BCRP.

## a. Copper

In February, the price of **copper** reached a monthly average of US$ 3.18 a pound, which represented an increase of 3 percent from the average price level in December 2017. This increase adds onto the increase of 21 percent recorded during 2017.

The rise in the price of copper so far this year is explained by an increase in global demand associated with higher-than-expected global growth and with the depreciation of the dollar. On the supply side, the price was pushed upwards by various production stoppages (Chile, Indonesia, Peru, Congo, and Zambia) as well as by expectations of restrictions on imports of recycled copper from China.

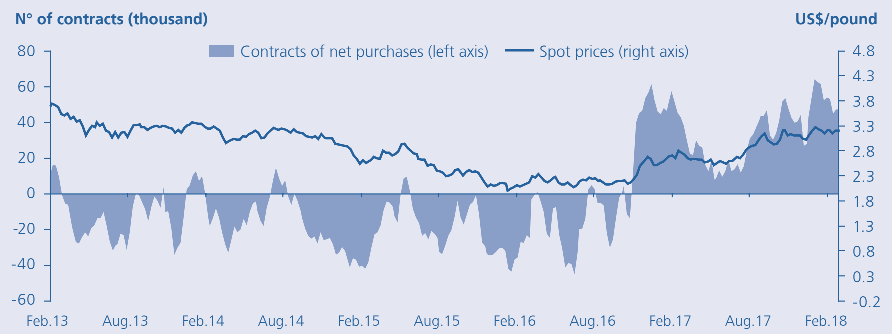
**Table 12**
**WORLD REFINED COPPER USAGE AND SUPPLY TRENDS**
(Thousand MT, copper)

| | 2015 | 2016 2/ | 2017 2/ | 2018 2/ | Jan-Nov.16 | Jan-Nov.17 | % change |
|---|---|---|---|---|---|---|---|
| World Mine Production | 19,148 | 20,357 | 19,807 | 20,311 | 18,558 | 18,113 | -2.4% |
| World Refined Production (Secondary+Primary) | 22,871 | 23,339 | 23,583 | 24,179 | 21,321 | 21,404 | 0.4% |
| World Refined Usage | 23,040 | 23,495 | 23,733 | 24,283 | 21,475 | 21,600 | 0.6% |
| Refined Balance 1/ | -169 | -156 | -151 | -104 | -154 | -196 | |

1/ Surplus/deficit is calculated using refined production minus refined usage.
2/ Estimation of October 2017.
Source: ICSG.

It is worth pointing out that, together with high global liquidity, these changes in the fundamentals were reflected in the net long positions of non-commercial agents, which reached a record level in January.

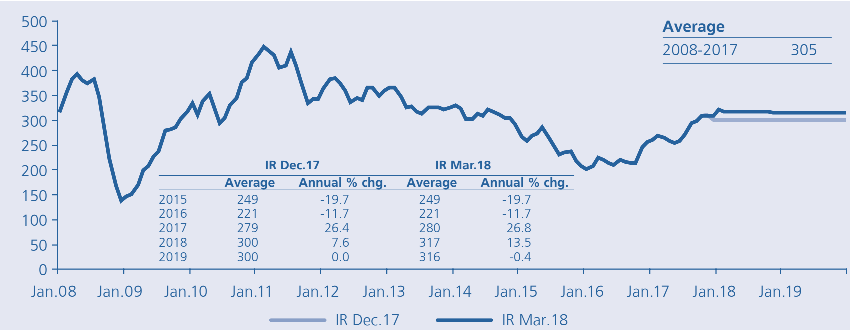
**Graph 12**
**COPPER: NON-COMMERCIAL CONTRACTS**




Source: Bloomberg.

The average prices projected for 2018 and 2019 have been revised upwards. It is estimated that prices will partially correct the rise observed recently. This revision assumes that China's demand will continue to be favored by the demand of the electricity grid sector and that the dynamism of activity will continue in Europe and in the United States.

**Graph 13**
**COPPER: JANUARY 2008 - DECEMBER 2019**
(US$ cents/pd.)




Source: Bloomberg and BCRP.

### b. Zinc

After increasing 20 percent in 2017, the price of **zinc** rose 11 percent in the first two months of the year, reaching an average level of US$ 1.61 per pound in February. The market has been facing simultaneously a supply shortage and a growing demand, which has reflected in the decline of the inventories-to-consumption ratio.

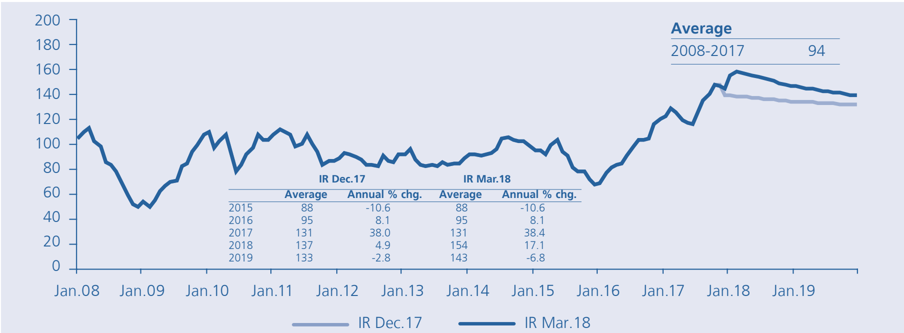
**Table 13**
**WORLD REFINED ZINC USAGE AND SUPPLY TRENDS**
(Thousand MT, zinc)

| | 2015 | 2016 | 2017 |
|---|---|---|---|
| World Mine Production | 13.61 | 12.77 | 13.23 |
| World Refined Production | 13.66 | 13.74 | 13.72 |
| World Refined Usage | 13.49 | 13.86 | 14.22 |
| Refined Balance (in thousand) | -170 | -122 | -495 |

Source: ILZSG.

The market is expected to remain in deficit during 2018: the global supply of zinc would grow at lower rates than the demand, which would support current prices. However, with the entry of new supply in 2019, prices would correct slightly to the downside.

**Graph 14**
**ZINC: JANUARY 2008 - DECEMBER 2019**
(US$ cents/pd.)




| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 88 | -10.6 | 88 | -10.6 |
| 2016 | 95 | 8.1 | 95 | 8.1 |
| 2017 | 131 | 38.0 | 131 | 38.4 |
| 2018 | 137 | 4.9 | 154 | 17.1 |
| 2019 | 133 | -2.8 | 143 | -6.8 |

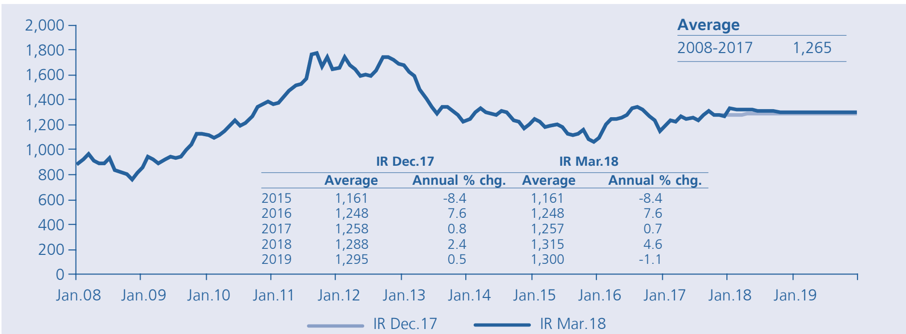
Source: Bloomberg and BCRP.

## c. Gold

The price of gold increased 5 percent in the first two months of 2018 and reached an average price of US$ 1,332 a troy ounce in February. This recovery comes after the price of gold increased 10 percent in 2017.

The price of gold has been favored by the depreciation of the dollar in response to the lower monetary stimulus expected in the Eurozone and the United Kingdom. So far this year, the dollar has depreciated 1.8 percent against the euro and 2 percent against the pound. Moreover, expectations of higher inflation rates have boosted the demand for gold as a value asset.

**Graph 15**
**GOLD: JANUARY 2008 - DECEMBER 2019**
(US$/tr. ounce)




| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 1,161 | -8.4 | 1,161 | -8.4 |
| 2016 | 1,248 | 7.6 | 1,248 | 7.6 |
| 2017 | 1,258 | 0.8 | 1,257 | 0.7 |
| 2018 | 1,288 | 2.4 | 1,315 | 4.6 |
| 2019 | 1,295 | 0.5 | 1,300 | -1.1 |

Source: Bloomberg and BCRP.

## d. Crude Oil

After accumulating an increase of 11 percent in 2017, the price of **WTI oil** increased 8 percent in the first two months of 2018, closing at an average price of US$ 62 per barrel in February.

The price of oil increased due to a global deficit market that was reflected in the drop of OECD crude inventories in 2017 and in the depletion of floating inventories. This trend is explained by a higher-than-expected global oil demand (given the strong growth of global activity) and by the OPEC's firm compliance with its production cuts. Within this cartel, it is also worth mentioning the sharp fall in Venezuela's crude production.

However, the price increase was offset by the faster pace of growth of US crude production due to the deflation of costs in the oil industry as a result of productivity gains. In addition to this, higher oil prices will favor the implementation of new projects in 2018, particularly shale oil projects.

In the forecast horizon, the WTI oil price estimate is revised upwards, in line with recent developments. However, this projection shows some degree of uncertainty in view of the difficulty of predicting the behavior of the OPEC and the evolution of shale oil production, which represents approximately 50 percent of US production.

**Graph 16**
**WTI OIL: JANUARY 2008 - DECEMBER 2019**
(US$/bl.)


| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 49 | -47.7 | 49 | -47.7 |
| 2016 | 43 | -11.4 | 43 | -11.4 |
| 2017 | 51 | 17.1 | 51 | 18.0 |
| 2018 | 54 | 6.4 | 60 | 18.7 |
| 2019 | 51 | -4.4 | 57 | -5.4 |

Source: Bloomberg and BCRP.

## e. Food: Maize, Wheat, and Soybean Oil

Compared to December 2017, the average international price of **maize** increased 7 percent in February, an average price of US$ 133 per ton being observed. With this increase, the price of maize has recovered from the fall of 5 percent registered in 2017.

**Graph 17**
**MAIZE: JANUARY 2008 - DECEMBER 2019**
(US$/MT)

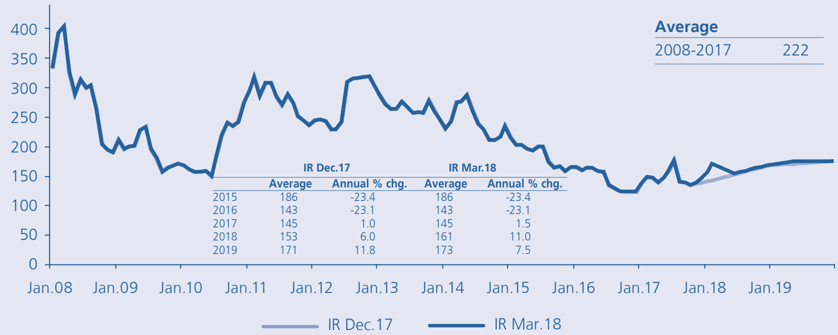

| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 141 | -9.3 | 141 | -9.3 |
| 2016 | 135 | -4.4 | 135 | -4.4 |
| 2017 | 132 | -1.6 | 131 | -2.4 |
| 2018 | 145 | 9.6 | 144 | 9.6 |
| 2019 | 157 | 8.5 | 156 | 8.4 |

Source: Bloomberg and BCRP.

The increase in the price of maize was associated with the increase in the price of oil, higher wheat prices, and the outlook for lower production in Brazil (delay of the second sowing campaign). On the demand side, the growth of the consumption of maize as food for livestock is worth pointing out. However, the price increase was limited by a higher US production due to better yields. In line with this evolution, the average price of maize is expected to increase in the forecast horizon.

As of February, the international price of **wheat** showed an increase of 16 percent compared to December 2017 and closed at an average level of US$ 171 per ton. The average monthly price of wheat had risen 20 percent in 2017.

**Graph 18**
**WHEAT: JANUARY 2008 - DECEMBER 2019**
(US$/MT)




| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 186 | -23.4 | 186 | -23.4 |
| 2016 | 143 | -23.1 | 143 | -23.1 |
| 2017 | 145 | 1.0 | 145 | 1.5 |
| 2018 | 153 | 6.0 | 161 | 11.0 |
| 2019 | 171 | 11.8 | 173 | 7.5 |

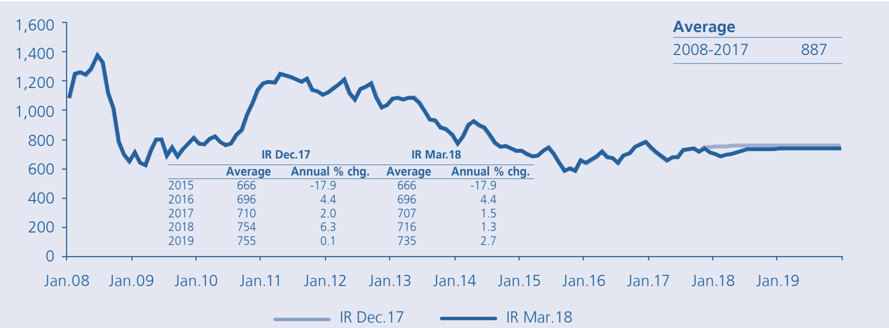
Source: Bloomberg and BCRP.

The price of wheat increased due to the poor winter crops obtained in the main producing regions in the United States (particularly, in Kansas) due to the lack of rain.

It is estimated that the price of wheat will show higher levels than expected due to supply constraints in the forecast horizon. In addition, the negative impact of climate on European production would add onto the supply restrictions in the US mentioned above.

In February, the average price of **soybean oil** was US$ 674 per ton, 5 percent lower than the average price level in December 2017. The fall in the price of soybean oil is mainly explained by a higher production of palm oil in Southeast Asia, particularly in Thailand and Malaysia, the increase in the latter being explained by lower export taxes. Considering these factors, lower than expected prices are foreseen in the forecast horizon.

**Graph 19**
**SOYBEAN OIL: JANUARY 2008 - DECEMBER 2019**
(US$/MT)




| | IR Dec.17 | | IR Mar.18 | |
|---|---|---|---|---|
| | Average | Annual % chg. | Average | Annual % chg. |
| 2015 | 666 | -17.9 | 666 | -17.9 |
| 2016 | 696 | 4.4 | 696 | 4.4 |
| 2017 | 710 | 2.0 | 707 | 1.5 |
| 2018 | 754 | 6.3 | 716 | 1.3 |
| 2019 | 755 | 0.1 | 735 | 2.7 |

Source: Bloomberg and BCRP.

## External Financing

15. In 2017, the **net flow of private capital** was positive by US$ 1.1 billion, a sum US$ 1.7 billion lower than in 2016. Although foreign direct investment remained high (reflecting the reinvestment of profits and the higher prices of metals), there were greater amortizations of long-term loans and higher investments of the AFPs abroad. It is worth mentioning that the amount of bonds issued by private companies (particularly in the electricity sector) in the international market increased, reflecting the better conditions and opportunities observed in external markets.

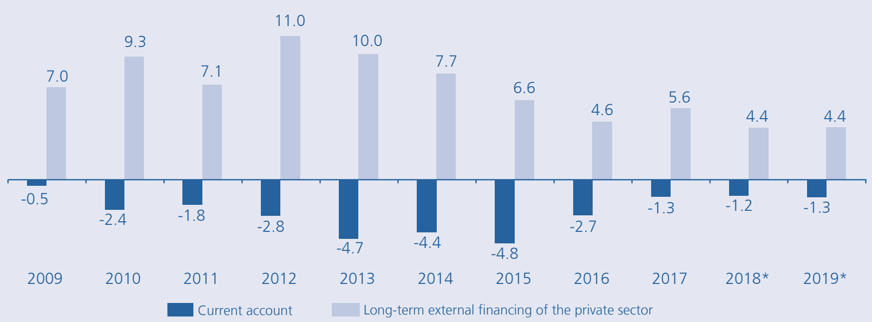
    In the forecast horizon, foreign direct investment is expected to remain as the main source of financing given that profit reinvestment has been greater, in line with the recovery of activity and the continued high prices of our minerals. The expansion of Southern's Toquepala mine is expected to be completed by mid-2018. Moreover, Anglo American's Quellaveco investment project would be decided in 2018, while Minsur has announced investments of up to US$ 480 million for its B2 projects (formerly called Bofedal 2) and Mina Justa in 2018. The long-term external capital of the private sector, which will continue to be the main source of financing the balance of payments, is expected to increase to 4.4 percent of GDP in 2018 and 2019, exceeding by far the requirements of the current account for that period. As in 2017, the net capital inflow would be lower due to higher debt repayments and investment in external portfolio assets and deposits in a context of Fed rate increases.

**Table 14**
**FINANCIAL ACCOUNT OF THE PRIVATE SECTOR**
(Million US$)

| | 2016 | 2017 | 2018* | 2019* |
|---|---|---|---|---|
| **PRIVATE SECTOR (A+B)** | **2,815** | **1,112** | **2,681** | **3,378** |
| *% GDP* | *1.4* | *0.5* | *1.2* | *1.4* |
| **A. LONG-TERM** | **3,709** | **1,653** | **3,161** | **3,798** |
| **1. ASSETS** | **-966** | **-2,929** | **-3,023** | **-3,053** |
| **2. LIABILITIES** | **4,675** | **4,582** | **6,183** | **6,851** |
| Foreign direct investment in the country | 6,863 | 6,769 | 7,018 | 7,160 |
| Long-term loans | -1,693 | -3,906 | -1,394 | -913 |
| Portfolio investment | -495 | 1,719 | 559 | 604 |
| **B. Short-term [1/]** | **-894** | **-541** | **-480** | **-420** |

1/ Includes net erros and omissions.
* Forecast.
IR: Inflation Report.

**Graph 20**
**CURRENT ACCOUNT AND LONG-TERM EXTERNAL FINANCING OF THE PRIVATE SECTOR: 2009-2019[1/]**
(% GDP)



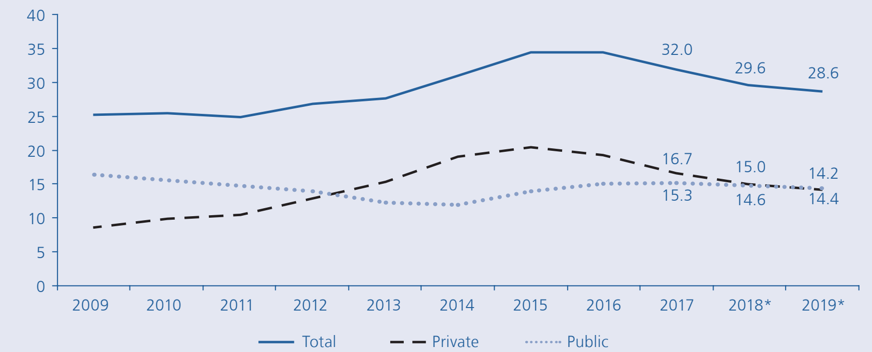

1/ Includes net foreign investments, portfolio investment, and private sector's long-term disbursement.
* Forecast.

16. The **public sector financial account** registered an increase of US$ 0.6 billion in 2017 compared to 2016 with a balance of US$ 3.2 billion, which mainly reflected the placement of Petroperú bonds (US$ 2.0 billion), the liquidation of foreign assets, and non-residents' greater holdings of sovereign bonds.

    The anticipated trend of lower external financing requirements would decline even further in the forecast horizon since lower disbursements are expected in 2018 and 2019 and greater debt amortizations are also foreseen in 2019.

17. Private external indebtedness would show a decreasing trend during the forecast horizon and would be equivalent to 14.2 percent of GDP in 2019, which is compatible with a greater use of local financing and with rising international interest rates.

**Graph 21**
**BALANCE OF MEDIUM- AND LONG-TERM EXTERNAL DEBT: 2009-2019**
(% GDP)




* Forecast.

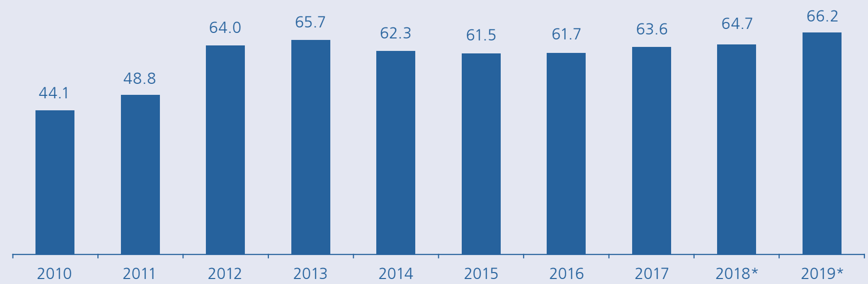
18. The soundness of the balance of payments to face negative events in the global economy is reflected in the position of Peru's international reserves relative to the balance of its short term external liabilities or comparing the total of these liabilities with the country's current account deficit. The high-levels the Peruvian economy shows in the region in terms of these indicators was pre-emptively achieved during a period of years characterized by positive capital inflows and high prices of raw materials.

**Table 15**
**NIR INDICATORS**

| | 2006 | 2011 | 2016 | 2017 | 2018* | 2019* |
|---|---|---|---|---|---|---|
| **NIR as a % of:** | | | | | | |
| a. GDP | 19.6 | 28.9 | 31.5 | 29.5 | 27.8 | 27.3 |
| b. Short-term external debt 1/ | 166 | 470 | 316 | 488 | 459 | 484 |
| c. Short-term external debt plus current account deficit | 230 | 365 | 248 | 404 | 385 | 396 |
| **Medium- and long-term external debt (as a % GDP)** | 28.6 | 24.7 | 34.5 | 32.0 | 29.6 | 28.6 |
| a. Private | 4.0 | 10.4 | 19.3 | 16.7 | 15.0 | 14.2 |
| b. Public | 24.5 | 14.3 | 15.1 | 15.3 | 14.6 | 14.4 |

1/ Includes short-term debt balance plus redemption (1-year) of private and public sector.
* Forecast.

**Graph 22**
**NET INTERNATIONAL RESERVES**
(Billion US$)



* Forecast.

**Box 2**

**THE ROLE OF THE TERMS OF TRADE ON ECONOMIC ACTIVITY IN PERU**

In an economy with a high ratio of exports of natural resources, such as the Peruvian economy, no analysis of economic activity can disregard the effect of the terms of trade (ToT). This box provides estimates of the impact of ToT on economic activity in Peru in the last 26 years, including a key assumption: many of the ToT movements are anticipated[3].

Since the Peruvian economy is a small open economy, it is subject to changes in the international environment. These changes are transmitted mainly through fluctuations in the international prices of goods, such as the prices of the main metals (commodities) exported by Peru. Macroeconomic literature suggests that ToT, measured as the ratio of the price of exports to the price of imports, are a source that determines important variations in the economic activity of developing countries, although the results have been diverse.

For example, Mendoza (1995)[4], using the predictions of a business cycle model calibrated for small open economies, points out that more than 30 percent of GDP variations are due to unanticipated movements in ToT. However, recently Schmitt-Grohé and Uribe (2017)[5] challenge this traditional viewpoint in a study of 38 emerging economies, finding that unanticipated changes in ToT account for an average of only about 10 percent of GDP variability[6].

In order to understand the disparity in results mentioned above, it is necessary to acknowledge that fluctuations in international prices are due to different factors, some of which have a transitory nature and are not foreseen by economic agents, while others have a more persistent and predictable nature. Zeev, Pappa and Vicondoa (2017)[7] point out that economic agents respond differently to unanticipated and to anticipated movements in ToT, because the anticipated changes are linked to persistent changes in the fundamentals of the international economy and, thus, affect current economic decisions.

3 This means that agents are able to predict persistent movements in commodity prices based on macroeconomic fundamentals (e.g. China's growth, movements of international interest rates, among others), and adjust their consumption and investment decisions based on this.

4 Mendoza, E. G. (1995). The terms of trade, the real exchange rate, and economic fluctuations. International Economic Review, 101-137.

5 Schmitt-Grohé, S., & Uribe, M. (2017). How important are terms of trade shocks?. International Economic Review.

6 For example, in the case of the Peruvian economy, unexpected increases in the cyclical component of the ToT explain 19 percent of the variation of the cyclical component of GDP if the real exchange rate is included in the specification of the model, and only 2 percent if it is not included.

7 Zeev, N.,Pappa, E. & Vicondoa, A. (2017). Emerging economies business cycles: The role of commodity terms of trade news. Journal of International Economics.

The literature on anticipated shocks argues that there is an essential difference between the impact of anticipated and unanticipated ToT movements on economic activity in small open economies such as the economy of Peru. Accordingly, the ToT movements that are passed through to domestic investment, consumption, and GDP are associated with persistent changes in the dynamics of some fundamental of the world economy, as has been the case of China's economic growth since 2000. The anticipated movements in ToT are revealed as new public information –that is, news– about how their future evolution is linked to solid fundamentals in global growth or in the growth of some major commercial partner. These news generate a trend of optimism or pessimism that is incorporated in the agents' decisions of consumption and investment.

Four different methodologies proposed by Faust (1998)[8], Uhlig (2003)[9], Barsky and Sims (2011)[10] and Zeev, Pappa and Vicondoa (2017)[11] are used in this box to estimate the effects of anticipated movements in ToT. The results show that, after two years, anticipated movements in ToT explain on average 49 percent of the GDP variation in the models specified with variables in gaps and 54 percent of movements in the models with the data specified in levels, but corrected with a linear trend. On the other hand, if only the unanticipated movements are considered, we find that the contribution of ToT to the volatility of the GDP declines to almost half of that obtained with anticipated movements. This result is also obtained when an exogenous block is considered in the estimation.

**PARTICIPATION OF THE TERMS OF TRADE ON THE VARIABILITY OF GDP 1/**

| | Anticipated shocks 2/ | | Unanticipated shocks 3/ | |
|---|---|---|---|---|
| | **Simple SVAR 4/** | **Exogenous block 5/** | **Simple SVAR 4/** | **Exogenous block 5/** |
| **Levels 6/** | 0.45 | 0.54 | 0.26 | 0.26 |
| **Gap 7/** | 0.43 | 0.49 | 0.24 | 0.24 |

1/ Data was obtained from the BCRP statistics. The frequency is quarterly and deseasonalized. The range: Q1.1990 to Q4.2016.
2 / The average of applying different forms of identification of anticipated shocks is presented according to: Faust (1998), Uhlig (2003), Barsky and Sims (2011) and Zeev, Pappa and Vicondoa (2017).
3 / The average of applying a contemporary recursive identification with three alternative ways to measure the terms of trade is presented: export price to import price ratio, weighted index of metals prices exported by Peru with weights changing over time, and weighted index of metal prices exported by Peru with constant weights.
4 / Structural VAR identified with contemporary restrictions recursively. The ranking from the most exogenous to the most endogenous variable is as follows: 3-month LIBOR rate, GDP G-20, external inflation, terms of trade, interbank interest rate, real exchange rate, consumption, investment, GDP and inflation.
5 / Structural VAR similar to the previous identification scheme but with an exogenous block for external variables (3-month LIBOR rate, external inflation, GDPG-20 and terms of trade) and a domestic variables (interbank interest rate, real exchange rate, consumption, investment, GDP and inflation). It is assumed that domestic variables do not affect the international variables in any period.
6 / The specification in levels is corrected by a linear trend and / or square trend.
7/ The cyclic component of the endogenous variables is used using the Baxter-King filter or a square trend.

The following graph shows impulse-response functions of selected variables vis-à-vis an anticipated ToT shock based on the estimations carried out to identify anticipated movements in

8 Faust, J. (1998). The robustness of identified VAR conclusions about money. In Carnegie-Rochester Conference Series on Public Policy (Vol. 49, pp. 207-244). North-Holland.

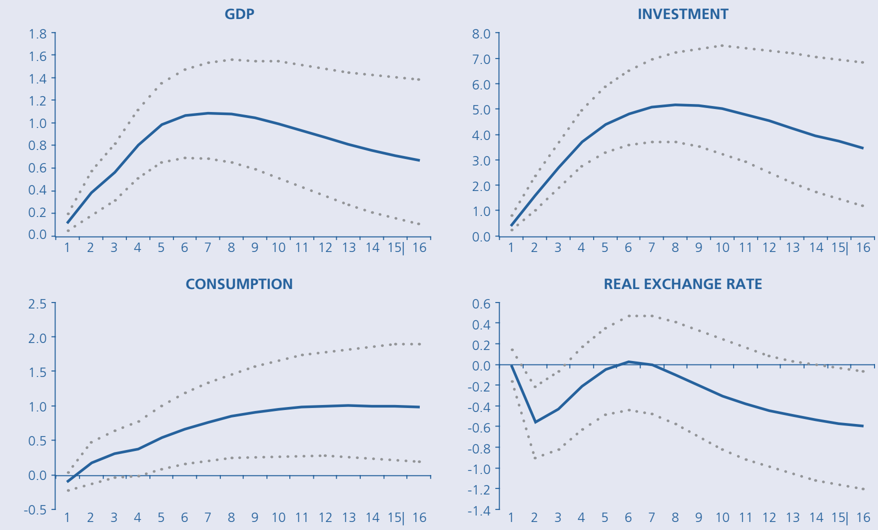
9 Uhlig, H. (2003). What moves real GNP? Mimeo.

10 Barsky, R. B., & Sims, E. R. (2011). News shocks and business cycles. Journal of Monetary Economics, 58(3), 273-289.

11 The identification consists of finding the structural ToT shock that has the maximum contribution to the variance error decomposition for the variables of interest in a given forecast horizon. In other words, the anticipated shocks identified using this methodology are such that they explain most of the variability in the ToT prediction error.

ToT[12]. The response is positive and significant for the GDP, private investment and consumption, while the real exchange rate shows an appreciation. Moreover, we can see that the largest response is observed in the GDP and in investment seven quarters after the initial impulse, and that it then begins to decline gradually. More persistent responses are observed in private investment and in the real exchange rate.

**RESPONSE TO ONE ANTICIPATED SHOCK IN THE TERMS OF TRADE 1/**




1/ The solid line means the mean of the response of each variable, considering all the estimations. Dotted lines mean 80% confidence bands.

The previous estimations allow us to estimate the pass-through effect, that is, the cumulative response of the variables of interest to an anticipated ToT shock. The following table indicates that private investment is the variable that shows the greatest response: if there is an anticipated increase of one percent in ToT, private investment is estimated to increase by 0.8 percent above its trend value by the end of the second year after the shock, whereas GDP would be 0.2 percent above its trend level and consumption would be 0.1 percent above its trend level by this period.

**PASSTROUGH EFFECT OF ANTICIPATED SHOCK IN THE TERMS OF TRADE 1/**

| Quarter | GDP | Investment | Consumption | Real exchange rate |
|---|---|---|---|---|
| 4 | 0.092 | 0.434 | 0.037 | -0.060 |
| 8 | 0.167 | 0.787 | 0.098 | -0.035 |
| 12 | 0.225 | 1.098 | 0.169 | -0.059 |
| 16 | 0.271 | 1.354 | 0.243 | -0.101 |

1/ The passtrought in the period $T$ of a variable $x$ before a shock in the variable $y$ is constructed in the following way:

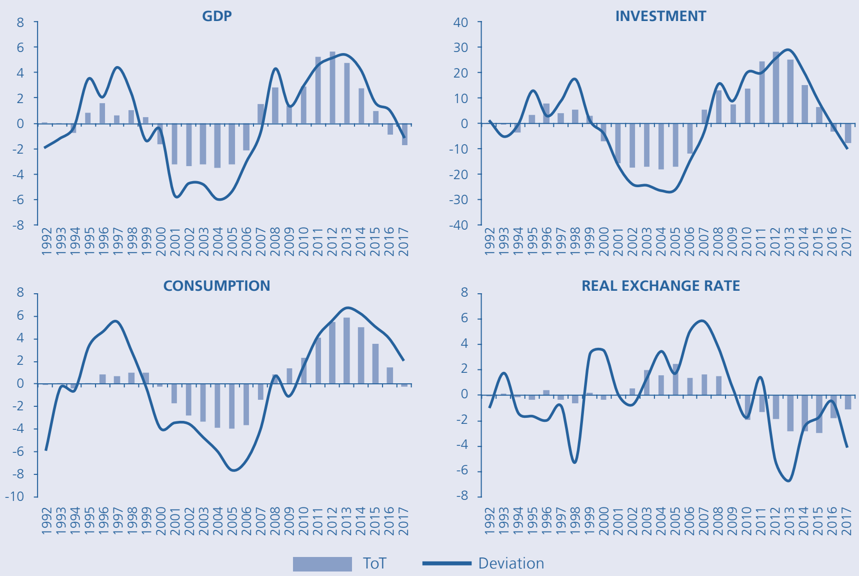
$$PT_T^x = \sum_{t=0}^{T} r_t^{x,y} \Big/ \sum_{t=0}^{T} r_t^{y,y}$$

Where $r_t^{x,y}$ is the value corresponding to the impulse-response function of the period $T$ for the variable $x$ before a shock of $y$.

12 A shock with the size of a standard deviation is assumed.

To fully understand the impact of ToT on economic activity, it is also necessary to analyze the historical role of ToT in explaining the deviations of consumption, investment, GDP, and the real exchange rate from their trend levels. We can distinguish two periods: (i) the period prior to the year 2000, where the deviations of ToT explain a very small portion of the deviations of the variables analyzed; and (ii) the period after year 2000, where the deviations of these variables are mainly explained by ToT.

**HISTORICAL DECOMPOSITION BEFORE SHOCK OF TERMS OF TRADE [1/]**




1/ Solid lines means the deviation of each variable with respect to a long-term linear trend. On the other hand, the vertical bars mean the contribution of the terms of trade in these deviations.

In conclusion, ToT play a very important role in the dynamics of the Peruvian economy, especially in the case of GDP and its components. If the anticipated ToT movements (i.e. the ones foreseen by agents observing fundamentals) are considered, we find that approximately half of the variation of Peru's GDP can be explained by the evolution of this variable. The impulse-responses also show that the variable that has the largest response to these kinds of shocks is private investment. Furthermore, a historical analysis allows us to see that the importance of ToT on macroeconomic dynamics has increased in recent decades.

Although ToT are mostly determined by external conditions and can account for a large portion of variation in Peru's GDP, about 50 percent of the variability of GDP still depends on internal factors. In other words, domestic conditions can limit or amplify the positive impact that ToT can have, which is why they should never be disregarded by policymakers, even though the external factors may seem to have a larger importance in determining the macroeconomic dynamics.

# III. Economic Activity

## Expenditure-Side GDP

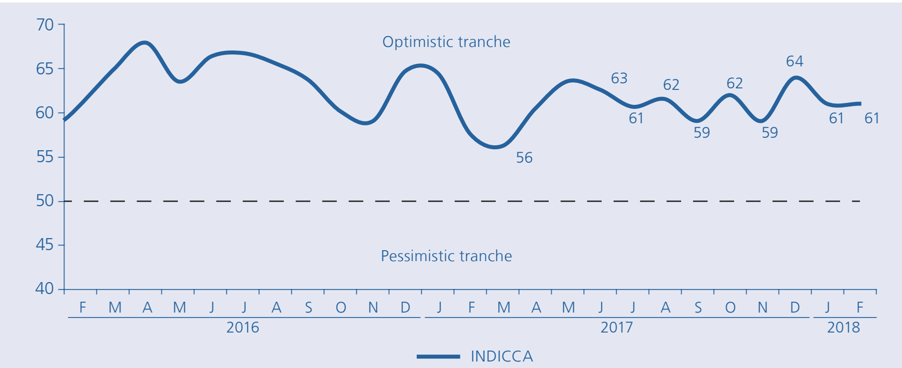
19. After growing 4.0 percent in 2016, economic activity slowed down to 2.5 percent in 2017 due mainly to a lower momentum of private consumption and of both public and private investment. Private consumption was affected mainly by a negative wealth effect caused by El Niño Costero, as well as by a weak evolution of the labor market.

    Both private and public investment began to show positive growth variations from the third quarter of the year after being previously affected by the Lava Jato Case (as a result of this unprecedented corruption case, several projects were halted and investors' confidence dropped). This growth of investment generated a certain recovery of domestic demand. The higher terms of trade led to a recovery in mining investment which began to grow at two-digit rates since the second quarter of the year (after 14 consecutive quarters of decline) and recorded a growth rate of 42 percent in the last quarter of 2017. Similarly, public investment showed a faster pace of growth in the third quarter, slowing down thereafter towards the last quarter of the year, reflecting in part a gradual advance of the Reconstruction Plan and the implementation of the projects associated with the Pan American Games. With this evolution of investment and consumption, domestic demand grew only 1.6 percent in 2017.

20. Recent indicators of **private consumption** show a mixed evolution. On the one hand, there is a decrease in the level of adequately employed workforce and stagnation in the growth of the average income of households. On the other hand, credit to families has shown greater dynamism since the third quarter of 2017 and imports of consumer goods register two-digit growth rates at the beginning of 2018. On the other hand, consumer confidence remains on the optimistic side, although showing lower levels than those observed 3 months ago.

    a) In February 2018, the consumer confidence index, measured as the expected economic situation of the household in a year, recorded 61 points, remaining in the optimistic area.

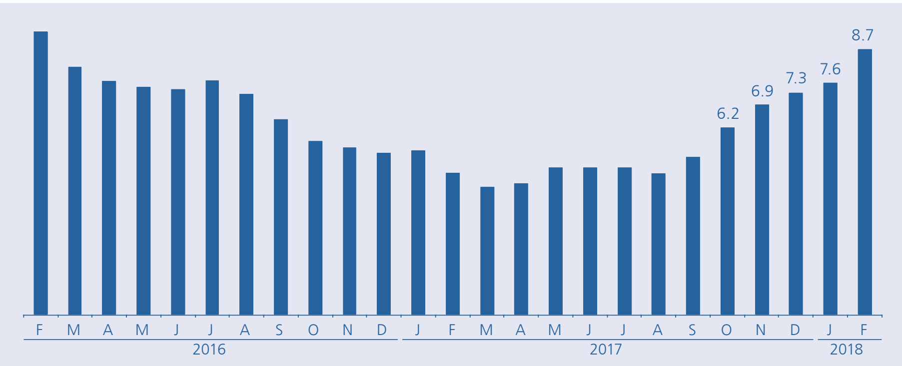
**Graph 23**
**EXPECTATIONS ON THE SITUATION OF THE ECONOMY IN THE TWELVE MONTHS AHEAD**




Source: Apoyo.

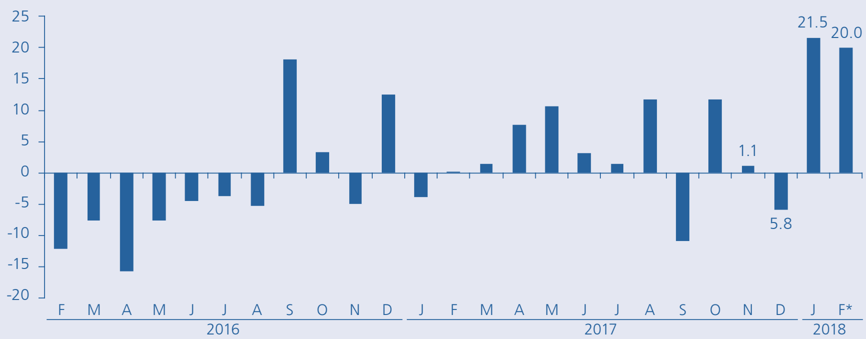
b) Consumer loans have been showing greater dynamism since the fourth quarter of 2017.

**Graph 24**
**REAL CONSUMER LOANS**
(12-month % change)




c) In line with the evolution of credit, imports of durable consumer goods have been showing two-digit growth rates so far in 2018.

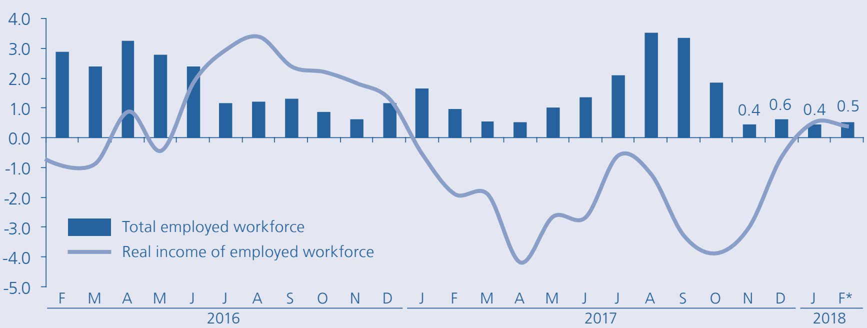
**Graph 25**
**VOLUME OF IMPORTS OF DURABLE CONSUMER GOODS**
(12 month % change)




* Preliminary.

d) The employed workforce (Economically Active Population) of Metropolitan Lima recorded an average growth rate of 0.5 percent between November 2017 and February 2018 after growing at an average rate of 2.4 percent during the previous five months. On the other hand, after showing an average contraction of 2.2 percent in 2017, real income has stabilized so far in 2018.

**Graph 26**
**EMPLOYED WORKFORCE AND REAL INCOME - METROPOLITAN LIMA**
(Moving quarter - 12 month % change)



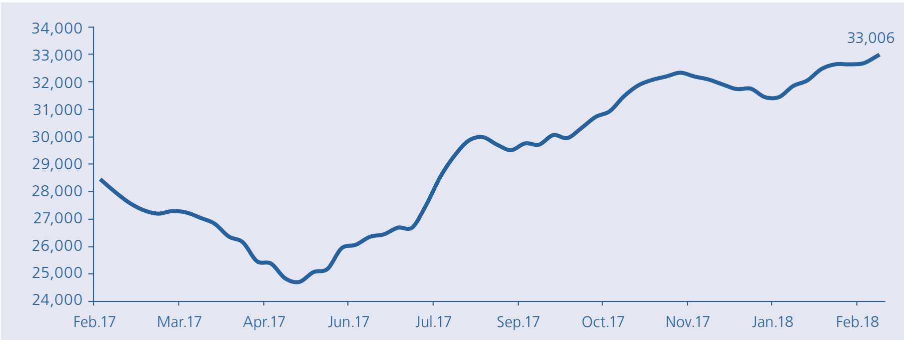

* Preliminary.
Source: INEI.

e) The number of jobs advertised through web pages[13] registered a recovery in February 2018 after showing some stagnation between mid-December 2017

13 Since September 2016, BCRP collects data of job advertisements published in the main web pages on a daily basis. Based on this information, we have built an alternative indicator of employment that is updated every day. Each ad contains a brief description of the job, as well as the location of the hiring company. Since the job ads may be seen on each web page for more than one day and since there is no information on whether the job has been covered or not, we only consider the ads that have been published for 7 days or less to reflect recent conditions in the labor market. The data collected provide a daily average of the jobs offered every week.

and January 2018, in line with the weak performance of the labor market. This result would be indicating a better evolution of employment in the next months.

**Graph 27**
**NUMBER OF JOB ADVERTISEMENTS**
(Moving average - four weeks)

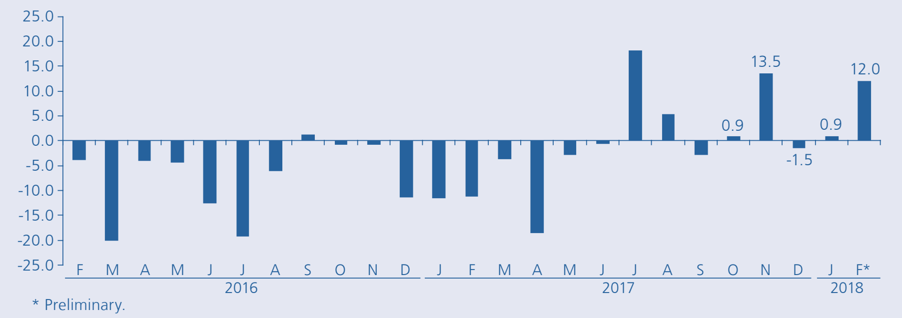



**Graph 28**
**NUMBER OF JOB ADVERTISEMENTS BY CITIES**
(Moving-average four weeks)


21. In the case of **private investment**, current and advanced indicators show the following trends:

a) The volume of imports of capital goods, excluding construction materials, has been recovering since the second half of 2017, and in February 2018 it recorded an annual growth rate of 12.0 percent.

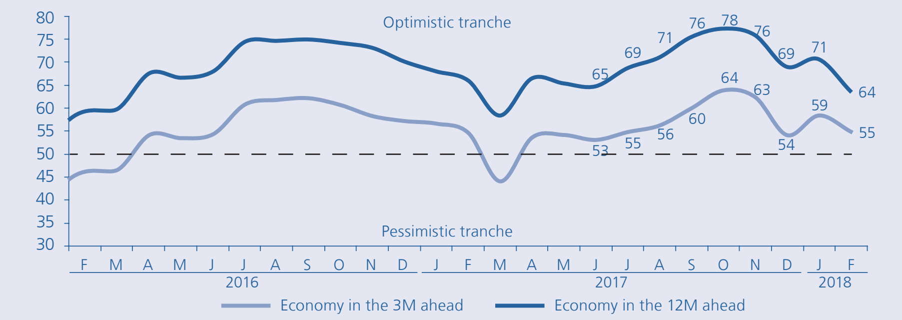
**Graph 29**
**VOLUME OF IMPORTS OF CAPITAL GOODS**
(12 month % change)



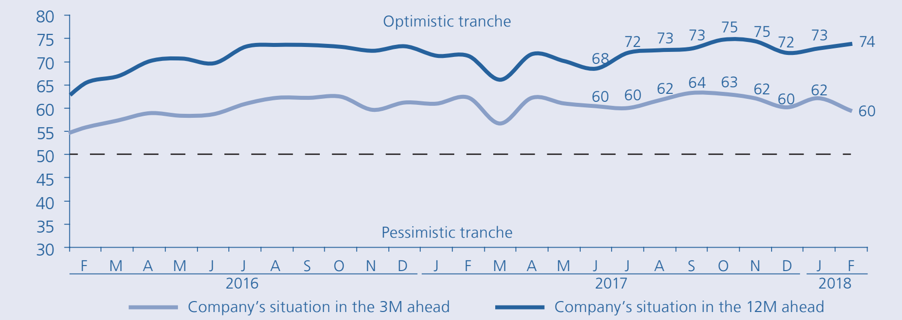

* Preliminary.

b) The expectations about the economy in three months and in twelve months declined in February, although they remain on the optimistic area. Moreover, maintaining the recovery trend that started in the second half of 2017, businessmen's expectations about the situation of their companies in three months and in twelve months recorded 60 and 74 points, respectively.

**Graph 30**
**BUSINESS EXPECTATIONS ON THE ECONOMIC SITUATION IN THE THREE AND TWELVE MONTHS AHEAD**

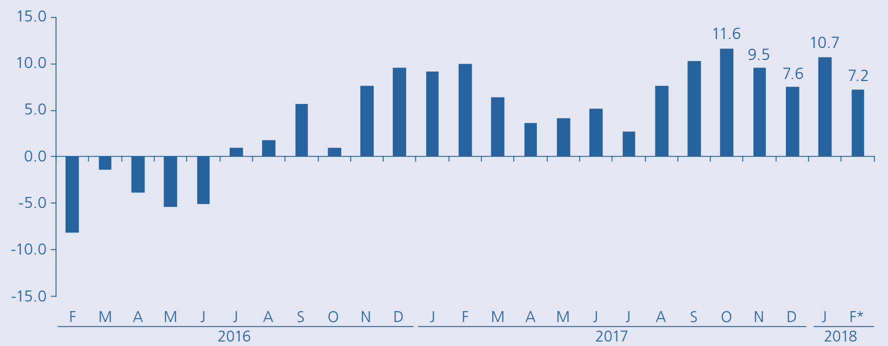



**Graph 31**
**BUSINESS EXPECTATIONS ABOUT YOUR COMPANY'S SITUATION IN THE THREE AND TWELVE MONTHS AHEAD**



c) Having registered an increase of 7.2 percent in February, the terms of trade would be anticipating increases in investment.

**Graph 32**
**TERMS OF TRADE**
(12 month % change)




* Preliminary.

22. People's expectations about GDP growth have been revised slightly down. In 2018, economic agents expect GDP to grow 3.5 percent, except for non-financial firms which expect a growth rate of 3.0 percent. For 2019, financial entities have revised their growth estimates slightly down, from 3.8 to 3.7 percent, while economic analysts have revised them down from 4.0 to 3.8 percent. On the other hand, non-financial companies maintain their growth forecast at 4.0 percent.

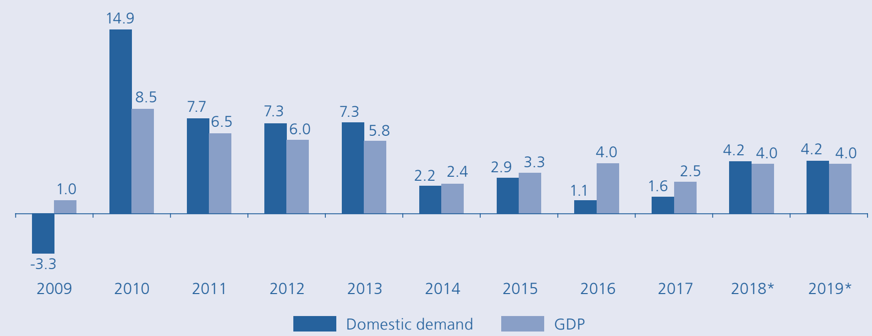
**Table 16**
**SURVEY ON MACROECONOMIC EXPECTATIONS: GDP GROWTH**
(% change)

| | | IR Jun.17 | IR Sep.17 | IR Dec.17 | IR Mar.18* |
|---|---|---|---|---|---|
| **Financial entities** | | | | | |
| | 2018 | 3.6 | 3.5 | 3.8 | 3.5 |
| | 2019 | 4.0 | 3.7 | 3.8 | 3.7 |
| **Economic analysts** | | | | | |
| | 2018 | 3.6 | 3.5 | 4.0 | 3.5 |
| | 2019 | 4.0 | 4.0 | 4.0 | 3.8 |
| **Non-financial firms** | | | | | |
| | 2018 | 3.9 | 3.7 | 3.8 | 3.0 |
| | 2019 | 4.0 | 4.0 | 4.0 | 4.0 |

* Survey date on February 15.
IR: Inflation Report.

23. In this Inflation Report, the GDP growth forecast is revised down from our previous estimate of 4.2 percent in 2018 and 2019 (Inflation Report of December 2017) to 4.0 percent in each of these years, which is consistent with a slower growth of domestic demand of 4.2 percent in both years.

**Graph 33**
**DOMESTIC DEMAND AND GDP: 2009-2019**
(Real % change)




* Forecast.

On the other hand, the growth forecast of the terms of trade has been revised up given the better conditions observed in the commodity markets. The positive impact of this correction would partially compensate for the deterioration of consumer and business expectations observed since the end of 2017 as a result of greater political uncertainty, which has affected consumption and private investment in particular.

**Table 17**
**GDP AND DOMESTIC DEMAND**
(Real % change)

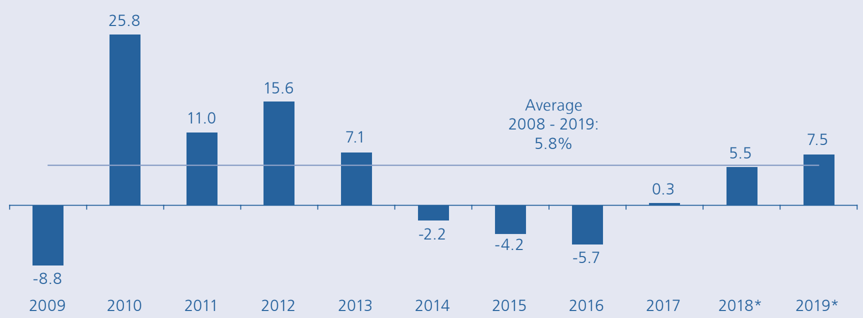
| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Domestic demand** | **1.1** | **1.6** | **4.4** | **4.2** | **4.3** | **4.2** |
| Private consumption | 3.3 | 2.5 | 3.3 | 3.2 | 3.8 | 3.6 |
| Public consumption | -0.5 | 1.0 | 3.6 | 4.0 | 2.0 | 2.5 |
| Private investment | -5.7 | 0.3 | 6.5 | 5.5 | 7.5 | 7.5 |
| Public investment | 0.2 | -2.8 | 12.5 | 14.2 | 4.0 | 5.0 |
| Change on inventories (contribution) | 0.2 | 0.0 | 0.1 | 0.0 | 0.0 | 0.0 |
| **Exports** | **9.5** | **7.2** | **3.5** | **3.2** | **3.8** | **3.6** |
| **Imports** | **-2.2** | **4.0** | **4.3** | **4.0** | **4.3** | **4.3** |
| **GDP** | **4.0** | **2.5** | **4.2** | **4.0** | **4.2** | **4.0** |
| Memo: | | | | | | |
| *Public expenditure* | *-0.3* | *-0.1* | *6.2* | *6.8* | *2.6* | *3.2* |
| *Domestic demand excluding inventories* | *0.9* | *1.7* | *4.4* | *4.2* | *4.3* | *4.2* |

IR: Inflation Report.
* Forecast.

24. A slow recovery is foreseen in the case of **private consumption** taking into account that indicators of the adequately employed workforce and confidence have deteriorated. However, it is expected that this trend will gradually be reversed by the expansion of the construction sector and the positive impact of higher terms of trade, both on the generation of employment and on the recovery of the disposable income, estimated for the rest of the year. Because of this, the growth of private consumption in 2018 and 2019 is estimated to be 3.2 and 3.6 percent, respectively.

25. On the other hand, **private investment** is expected to increase but at a lower rate than that reported in December. In 2018, private investment is expected to grow 5.5 percent, driven by a significant growth of mining investment, while other components of investment would show lower growth rates as a result of the deterioration of business expectations. In 2019, it would grow 7.5 percent considering that the factors that are generating uncertainty are expected to dissipate or disappear. In addition to the better performance of mining investment (associated with the recovery of metal prices), the resumption of some infrastructure projects, such as Lima Metro's Line 2 and the expansion of the International Airport Jorge Chávez (Lima), among other projects.

**Graph 34**
**PRIVATE INVESTMENT: 2009-2019**
(Real % change)




* Forecast.

**Graph 35**
**PRIVATE INVESTMENT**
(Billion US$)


* Forecast.
Source: BCRP and Minem.

26. In 2017, **mining investment** (in US$) grew 17.8 percent compared to 2016, with higher spending on exploration and infrastructure being observed. Moreover, in line with the information of the main investment announcements made so far, in 2018 and 2019 mining investment is estimated to grow 16.5 and 18.0 percent, respectively. Mining investment would be favored by the higher prices of metals, which will allow mining companies to improve their financial balances and expand their capital spending.

Investment projects announced to be carried out in 2018-2019 amount to US$ 18.3 billion, as shown in the table below.

**Table 18**
**PRIVATE INVESTMENT PROJECTS ANNOUNCED**
(Million US$)

| | Total investment | Number of projects |
|---|---|---|
| Mining | 6,692 | 28 |
| Infraestructure | 4,098 | 26 |
| Other sectors | 3,737 | 63 |
| Hydrocarbons | 2,025 | 16 |
| Energy | 969 | 21 |
| Industry | 760 | 11 |
| **TOTAL** | **18,281** | **165** |

Source: Companies information and media press.

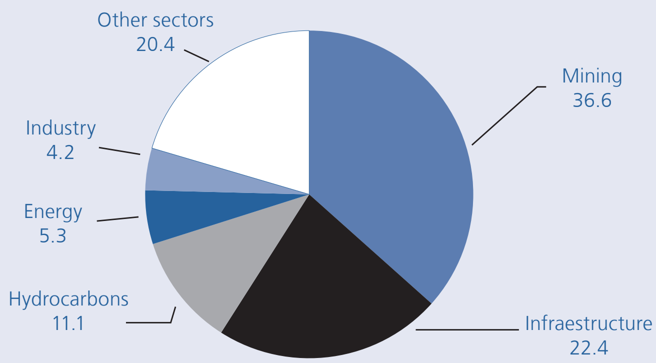
**Table 19**
**MAIN INVESTMENTS PROJECTS: 2018-2019**

| SECTOR | COMPANIES | PROJECT |
|---|---|---|
| **MINING** | Chinalco | Expansion of Toromocho |
| | Shougang Corporation | Expansion of Marcona |
| | Angloamerican | Quellaveco |
| | Grupo Breca | Mine Justa and B2 |
| | Southern Peru Copper Corp | Expansion of Toquepala |
| | Jinzhao Minning | Pampa del Pongo |
| | Teck Resources | Zafranal |
| | Compañía de Minas Buenaventura | Trapiche |
| | Tahoe Resources | La Arena |
| **HYDROCARBONS** | Pluspetrol Perú Corp. | Expansion of capacity transportation |
| | China National Petroleum Corporation | Exploration: Lot 58 |
| | Calidda Gas Natural del Perú | Massive use of gas |
| **ENERGY** | Interconexion Eléctrica S.A. | Enlace Mantaro nueva Yanango |
| | China Three Corges Corp y Energys Portugal S.A. | San Gabán III |
| | Grupo Enel | Wayra I |
| **INDUSTRY** | Corporación Lindley | Storages and infraestructures |
| | Repsol YPF | Expansion of La Pampilla plant |
| | Corporación Aceros Arequipa | Contrucción of new plant in Pisco |
| **INFRASTRUCTURE** | Consorcio Nuevo Metro de Lima | Line 2 of the Metro Network of Lima and Callao |
| | Lima Airport Partners | Expansion of international airport (Jorge Chávez) |
| | Grupo Volcan | Port Terminal Project: Chancay |
| | ADP | Improvement and new runways for landing |
| | Brookfield | Vias nuevas de Lima |
| **OTHER SECTORS** | Grupo Telefónica | Expansion and facilities of net LTE-4G |
| | Entel | Development of services 4G |
| | America Movil | Expansion of net 4G |
| | Grupo Falabella | Expansion and new shopping centers |
| | Inversiones Centenario | Real Estate investments and expansion of shopping centers |
| | Grupo Interbank | Expansion and New shopping centers |
| | Grupo Breca | Expansion and new hotels, medical centers and shopping malls. |
| | Cencosud | Shopping centers |

Source: Information of companies and media press.

At the sector level, it is estimated that the sectors of mining and infrastructure will concentrate nearly 60 percent of the investment announced.

**Graph 36**
**FORESEEN INVESTMENT PROJECTS: 2018-2019**
(% share)




Source: Companies information and media press.

In the **mining sector**, the expansion of Southern's Toquepala mine would end in mid-2018. Out of a total investment of US$ 1.2 billion estimated by the company, US$ 893 million has already been invested in the project as of December 2017. This expansion, which includes the implementation of a new concentrator with the latest technology, would increase the annual capacity of copper production by 100 thousand tons to 235 thousand tons and increase the annual production of molybdenum by 3.1 thousand tons. On the other hand, preliminary work is being carried out at Anglo American's Quellaveco mine while the feasibility study is completed. The amount of investment for this project should be decided in 2018. Moreover, Minsur announced investments of up to US$ 480 million in 2018 for its B2 projects (formerly called Bofedal 2) and Mina Justa. The project in the former involves the expansion of capacity of the San Rafael tin mine based on the processing of tailings, while preliminary works are being carried out in the latter while completing the detailed engineering program of the project.

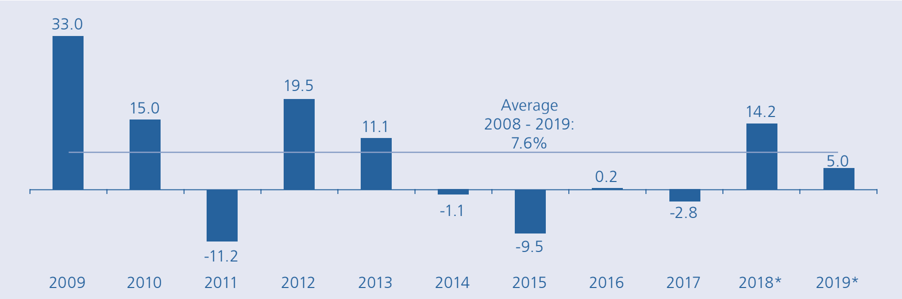
27. In the **infrastructure sector**, the expansion of the Jorge Chávez International Airport is expected to begin in 2018 with an investment of US$ 1.50 billion over a period of five years. In addition to this, the implementation of project Line 2 of the Lima Metro shows a progress of 20.2 percent. It is estimated that the first section of Line 2 which will connect the districts of Ate and La Victoria will be ready in 2019-2020.

Investment in projects awarded in concession by Proinversión in 2017 is estimated at US$ 926 million. In 2018, Proinversión expects to award projects for a total of US$ 4.84 billion, which includes the US$ 2.50 billion for the Michiquillay project recently awarded to Southern. In 2019-2020, investments for projects awarded under concession contracts would amount approximately to US$ 5.30 billion.

Among the projects to be awarded under concession in 2018, it is worth highlighting the self-sustained private initiatives of Marcona Port Terminal (involving an investment of US$ 582 million), Salaverry Port Terminal (US$ 216 million), and Hospitales de Alta Complejidad for ESSALUD (US$ 450 million for three hospitals in Piura, Chimbote, and Lima), the implementation of the Wastewater Treatment System in the Lake Titicaca Basin (US$ 304 million), the Huancayo - Huancavelica Railroad project (US$ 235 million), the self-financed state initiative Masificación del Uso de Gas Natural para el Centro y Sur del Perú (US$ 350 million), as well as regional broadband networks.

28. Considering the evolution of **public spending** during the second half of 2017, the growth projection of public investment has been revised up from 12.5 percent to 14.2 percent in 2018, and from 4.0 percent to 5.0 percent for 2019, which is consistent with an expansionary fiscal policy oriented to the reconstruction of infrastructure (after the negative impact of El Niño Costero) and the construction of infrastructure for the Pan American Games.

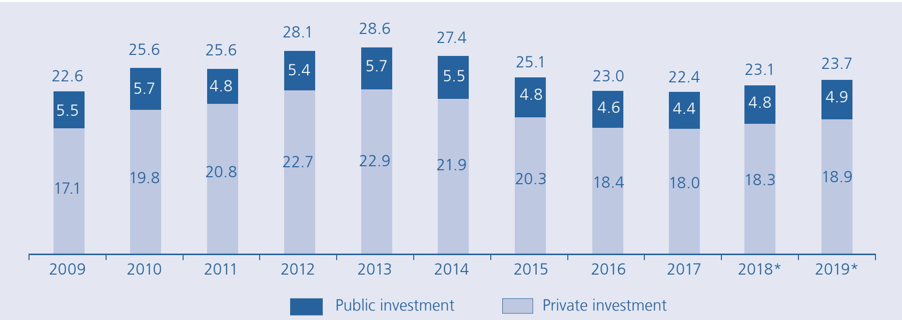
**Graph 37**
**PUBLIC INVESTMENT: 2009 - 2019**
(Real % change)




* Forecast.

This evolution of private and public investment will imply a fixed gross investment to GDP ratio of 23.7 percent in 2019.

**Graph 38**
**GROSS FIXED INVESTMENT: PRIVATE AND PUBLIC SECTORS 2009- 2019**
(% real GDP)




* Forecast.

## Sector GDP

29. The growth of the output was lower during 2017 (2.5 percent) than in the previous year, which is mainly explained by the slowdown observed in the primary sectors, the contribution of these sectors to growth having decreased from 2.1 percent in 2016 to only 0.6 percent in 2017. This is explained by the slowdown of activity in the mining sector, which in 2016 recorded a growth rate of 16.3 percent due to the production of mines Las Bambas and Cerro Verde, both of which started operations in 2015 and reached their optimum level of production in 2016. On the other hand, the non-primary sectors recorded a low growth rate (2.4 percent) and could not compensate the lower growth of the primary sectors as expected. However, the contribution to growth of the different non-primary sectors was different: activity in the sectors of trade and services slowed down, affected in part by El Niño Costero and by a slowdown in private consumption, while output in the construction sector recovered after two years of contraction, in line with the recovery of private investment and public spending during the second half of the year.

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**Table 20**
**GDP BY PRODUCTION SECTOR**
(Real % change)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Agriculture and livestock** | **2.7** | **2.6** | **4.3** | **4.0** | **4.4** | **4.0** |
| Agriculture | 1.8 | 2.6 | 4.3 | 4.3 | 4.4 | 4.1 |
| Livestock | 3.7 | 2.7 | 4.2 | 3.4 | 4.4 | 3.8 |
| **Fishing** | **-10.1** | **4.7** | **22.5** | **23.5** | **4.1** | **0.5** |
| **Mining and hydrocarbons** | **16.3** | **3.2** | **3.8** | **2.0** | **2.5** | **3.5** |
| Metallic mining | 21.2 | 4.2 | 4.2 | 2.4 | 2.2 | 3.0 |
| Hydrocarbons | -5.1 | -2.4 | 1.8 | -0.8 | 5.3 | 7.6 |
| **Manufacturing** | **-1.4** | **-0.3** | **5.0** | **4.8** | **4.2** | **3.5** |
| Based on raw materials | -0.6 | 1.9 | 9.1 | 9.9 | 5.6 | 4.1 |
| Non-primary industries | -1.6 | -0.9 | 3.5 | 3.0 | 3.7 | 3.4 |
| **Electricity and water** | **7.3** | **1.1** | **3.0** | **2.5** | **4.0** | **3.5** |
| **Construction** | **-3.1** | **2.2** | **8.9** | **8.5** | **9.5** | **8.0** |
| **Commerce** | **1.8** | **1.0** | **3.5** | **3.5** | **3.8** | **3.8** |
| **Services** | **4.0** | **3.4** | **3.7** | **3.7** | **4.0** | **4.0** |
| **GDP** | **4.0** | **2.5** | **4.2** | **4.0** | **4.2** | **4.0** |
| Memo: | | | | | | |
| Primary GDP | 10.0 | 2.9 | 4.9 | 3.8 | 3.4 | 3.6 |
| Non-Primary GDP | 2.4 | 2.4 | 4.1 | 4.0 | 4.4 | 4.2 |

* Forecast.
IR: Inflation Report.

A complete reversal of the negative impacts associated with El Niño Costero as well as a greater fiscal stimulus for reconstruction and the unlocking of the main infrastructure projects are expected in the 2018-2019 horizon, which would allow a greater dynamism of investment and private consumption. In spite of this, the growth rates are expected to be lower than those estimated in the previous report considering that some mines have announced lower production targets and considering that the anticipated recovery in the construction and manufacturing sectors would be lower than expected. Thus, in the current scenario the GDP growth forecast has been revised down from 4.2 to 4.0 percent in 2018 and 2019.

a) The **agriculture** sector grew 2.6 percent during 2017 due to the greater supply of products oriented to the external market (coffee and blueberries) and to the domestic market (potatoes and poultry), reversing the impact of climate anomalies caused by the water deficit observed in 2016 and by the impact of El Niño Costero in 2017 in the north coast, which affected the yields and harvested areas of permanent crops, such as grapes, organic bananas and lemons, and temporary crops, such as paprika and rice.

   The growth forecast for this sector in 2018 has been revised from 4.3 to 4.0 percent due to the estimated impact of La Niña event in the Central Pacific area during the local summer season this year, which would cause excessive humidity in the Andean and Jungle regions of the country. Another factor that would add to this decline is the lower growth rate observed in the poultry industry during last year. Conversely, the estimated output for the external market is revised upwards due to the greater areas that will produce blueberries for the external market.

   In 2019, the sector would grow 4.0 percent since the oversupply of potatoes is expected to be corrected and the poultry industry would show a lower growth rate. Like in 2018, an increase in production oriented to the external market is estimated due to the inclusion of new areas of cultivation of blueberries, grapes of new varieties, cocoa, and capsicum products (pepper, paprika, and piquillo peppers, among other varieties).

b) During 2017, the **fishing** sector grew 4.7 percent after experiencing a contraction of 10.1 percent in 2016. This result reflects that the anchovy catch for industrial consumption was greater than that obtained in the previous year, despite the suspension of the second fishing season in the north-central area during November and December due to the high presence of young fish.

   In 2018, output in the fishing sector is estimated to grow 23.5 percent since greater anchovy landings for industrial consumption are foreseen. These greater landings are associated with the reopening of the second fishing season in the north-central area during January 2018 after they were suspended in November 2017.

   The level of anchovy catch in 2019 is expected to be similar to that recorded in 2018.

c) In 2017, the **metal mining** subsector grew 4.2 percent due to the higher production of copper obtained in Las Bambas and Toromocho, the higher production of zinc in Antamina, and the higher production of molybdenum in Cerro Verde, Toromocho, and Las Bambas.

The growth forecast estimated for this subsector in 2018 has been revised down, from 4.2 to 2.4 percent. Factors explaining this lower forecast include mainly that a lower copper production is expected in Las Bambas because production has gone into a phase in which ores will have lower mineral contents; that Southern will also have a lower production because the implementation of the expansion of Toquepala has been slower than anticipated, and that the gold production plans of Lagunas Norte have been revised downwards.

**Table 21**
**MINING PRODUCTION**
(% change)

| | 2015 | 2016 | 2017 | 2018* | 2019* |
|---|---|---|---|---|---|
| Copper | 25.8 | 40.1 | 4.5 | 3.7 | 3.7 |
| Gold | 4.8 | 4.2 | -1.2 | -5.5 | -0.3 |
| Zinc | 8.0 | -5.9 | 10.2 | 2.3 | -0.1 |

* Forecast.

c) Production in the **hydrocarbons** subsector fell 2.4 percent in 2017 due to the lower extraction of natural gas liquids (-4.2 percent) and natural gas (-7.6 percent). This is explained by lower exports of Lot 56 (Pluspetrol) and by the lower demand for gas of thermoelectric generation companies, which mainly affects Lot 88 (Pluspetrol). In contrast, oil production recovered compared to 2016 and recorded a growth rate of 7.7 percent due to the restart of production in Lot 192 from February 2017.

In 2018, the sector’s output would fall 0.8 percent due to a lower production of natural gas and natural gas liquids associated with the rupture of the pipeline of Transportadora de Gas del Peru during February. As for oil production, it is expected that the Oleoducto Norperuano will remain operational and no significant disturbances are foreseen in Lot 192. In 2019, the subsector is expected to grow 7.6 percent due to the recovery of the production of gas and natural gas liquids.

d) Output in **non-primary manufacturing** decreased 0.9 percent in 2017 due to the lower production of inputs, capital goods, and goods oriented to the external market.

In 2018 the sector is projected to recover and to grow 3.0 percent, continuing on this growth path in 2019 with a growth rate of 3.4 percent. This evolution is associated with the estimated recovery of domestic demand, both in terms of consumption and investment, driven by the higher disposable income generated by the better terms of trade.

**Box 3**

**MINIMUM WAGE, INFORMALITY, AND COMPETITIVENESS**

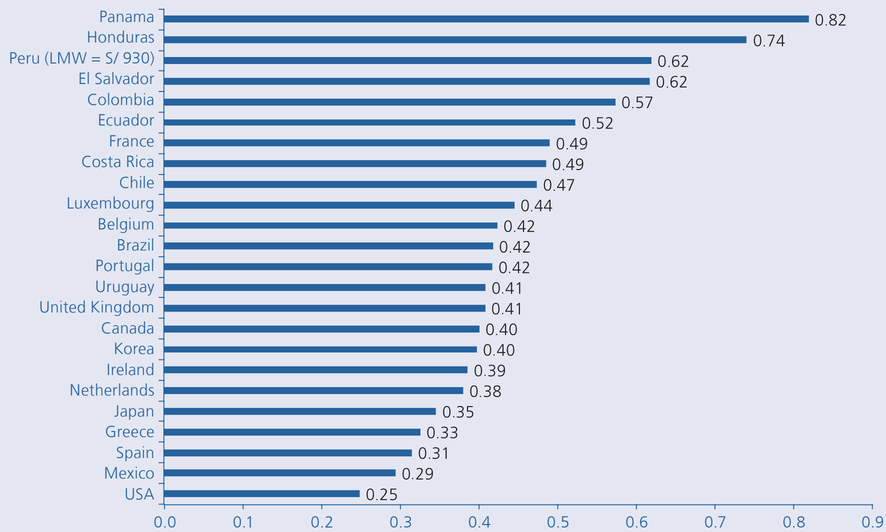
The effects of increasing the minimum wage on informality in the Peruvian labor market are analyzed in this box.

*The Minimum Wage Level*

The minimum wage (MW), called minimum vital remuneration in Peru, should be associated with the income level of low productivity workers. If the government established a MW level close to the average income of all the workers, this wage would be compatible with average productivity levels and not with minimum productivity levels. Thus, with a high MW, companies or activities with low productivity levels would become unviable and would be unable to hire formal workers. Therefore, the conclusion is that the further away the MW is from the median income, the fewer distortions it will create.

According to 2016 information of the ENAHO and the OECD, a MW of S/ 930 represents about 62 percent of the average income. This level of MW is considerably higher than that observed in Colombia, Chile, Mexico, and other OECD countries.

**LEGAL MINIMUM WAGE**
(% average income)*

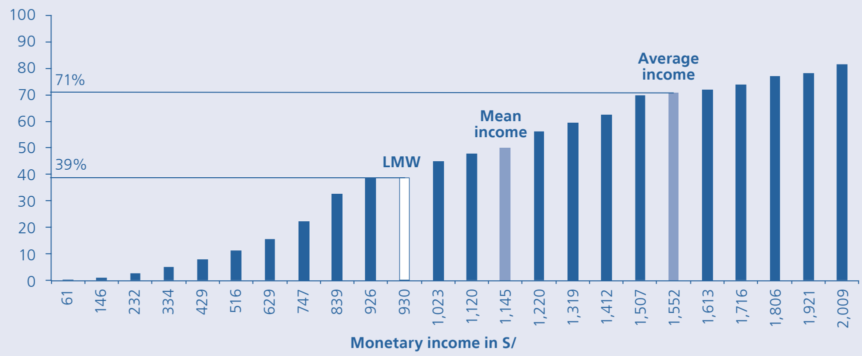



* For OECD countries and most countries in Latin America during 2016. In Peru, the ratio takes into account the average income of a full-time dependent worker. For the other countries, the average income of a full-time worker is taken into account (OECD data).
Source: OECD and ENAHO.

An interesting and useful aspect to see is where the MW stands in terms of income distribution taking into account the modern sectors that have the lower levels of productivity: trade and services (excluding telecommunications and financial services). The following graph shows the cumulative distribution of monthly income in the sectors of commerce and services (excluding telecommunications and financial services), which are the sectors that have the highest percentage of employed urban workforce.

About 71 percent of workers employed in the sectors of commerce and services (excluding telecommunications and financial services) have a monthly income below the average income, while 39 percent have a monthly income that is lower than the MW of S/ 930. The level of the new MW is equivalent to 80 percent of the median income of the population.

**INCOME DISTRIBUTION: DEPENDENT WORKER IN COMMERCE AND SERVICES**
(2016) 1/




1/ Includes those individuals who work 24 hours or more per week in the commerce and services sector. Not includes telecommunications or financial services.
Source: INEI (2016).

*Effects on Informality*

The main result reported by the literature is that the elasticity of informality as a result of changes in the MW is 0.19. In other words, a 10 percent increase in the MW could increase informality by 1.9 percent. This effect, which is also heterogeneous in different income ranges, shows a higher value in the group of workers whose incomes are 1.2 times lower than the MW; that is, the effect is higher among workers who are exposed to changes in the MW. Del Valle (2009) suggests that an increase in the MW would reduce employers' incentives to formalize their workers, since this would imply paying them a higher salary. In addition, independent workers would also be discouraged from being formalized since this would cause additional labor costs that would reduce their net income. This increase in labor costs can affect competitiveness in the economy through the cost channel. Based on data of the 2017 Permanent Employment Survey (Encuesta Permanente de Empleo), it is estimated that raising the MW to S/ 930 would increase informal jobs in Metropolitan Lima by 28 thousand.

Based on data of the Permanent Employment Survey for the period of 2003-2012, Céspedes and Sánchez (2014) show that, in scenarios in which the MW is changed, job losses are greater among workers who work in small companies than among those working in large companies (where the effect is negative, although statistically not significant). Moreover, data of the 2017

Permanent Employment Survey allows us to infer that the increase of the MW to S/ 930 would reduce the size of the employed workforce in Metropolitan Lima by 118 thousand workers

**EFFECTS OF AN INCREASE IN LMW IN EMPLOYMENT (WORKFORCE) AND INFORMALITY 1/**

| | Elasticity (1) | Variation of LMW (2) | Impact (3)=(1)*(2) | Effects on the labor market (Thousand) |
|---|---|---|---|---|
| Employment | -0.256 | 0.09 | -0.0241 | -118 |
| Informality | 0.190 | 0.09 | 0.0179 | 28 |

1/ In Metropolitan Lima as of 4Q 2017.
Source: EPE – INEI.

**Referencias:**


Céspedes, N. and A. Sánchez (2014). Minimum wage and job mobility in Peru, Journal of CENTRUM Cathedra: The Business and Economics Research Journal, 7(1), 23-50.

Del Valle, Marielle (2009). Impacto del ajuste de la Remuneración Mínima Vital sobre el empleo y la informalidad, Revista Estudios Económicos, BCRP, 16, 83-102.

# IV. Public Finances

30. In 2017, the deficit of the non-financial public sector increased to 3.1 percent of GDP after it reached a level of 2.6 percent of GDP in 2016. This result was mainly due to a reduction of 0.5 points of GDP in current revenues since these revenues were affected by the economic slowdown, by changes in the tax system (application of the new tax regime for micro and small businesses (MYPE) and the Fair VAT), and by the increase of tax refunds to historical levels. Another factor that also contributed to this, although to a lesser extent, was the increase in non-financial spending of the general government due to higher current expenses in salaries. Moreover, it is also worth highlighting the reversal of the decline in gross capital formation as of the third quarter of 2017.

31. In 2018, the fiscal deficit is still projected to increase to 3.5 percent of GDP given that expenditure with an emphasis on public investment is foreseen to be higher. Subsequently, in 2019 expenditure would show a more moderate pace to reach a deficit of 2.9 percent of GDP so that, together with higher collection, the deficit could converge towards 1.0 percent in 2021. This scenario is compatible with the level of deficit considered in the Multiannual Macroeconomic Framework 2018-2021 and with the deficit targets approved by Law N° 30637.

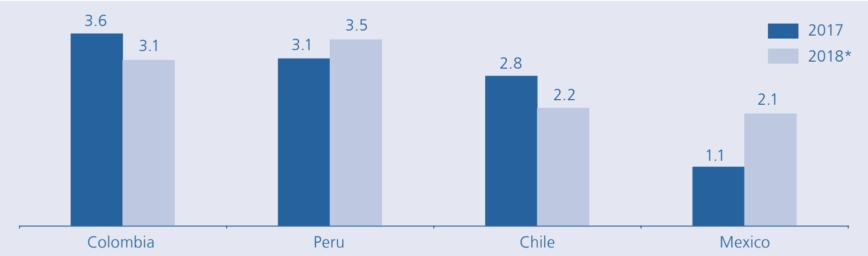
**Table 22**
**NON-FINANCIAL PUBLIC SECTOR**
(% GDP)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **1. General government current revenues [1/]** | **18.5** | **18.0** | **18.3** | **18.3** | **18.5** | **18.5** |
| *Real % change* | *-4.1%* | *0.7%* | *5.9%* | *7.4%* | *5.4%* | *5.6%* |
| **2. General government non-financial expenditure [2/]** | **19.9** | **20.0** | **20.5** | **20.3** | **20.0** | **20.0** |
| *Real % change* | *-2.4%* | *3.9%* | *7.1%* | *7.7%* | *1.6%* | *2.5%* |
| Of which: | | | | | | |
| Current expenditure | 15.3 | 15.3 | 15.2 | 15.3 | 14.8 | 15.1 |
| *Real % change* | *0.3%* | *3.9%* | *5.8%* | *5.9%* | *1.4%* | *2.6%* |
| Gross capital formation | 4.1 | 4.0 | 4.7 | 4.3 | 4.6 | 4.3 |
| *Real % change* | *-3.1%* | *1.0%* | *14.0%* | *15.7%* | *3.3%* | *2.9%* |
| **3. Others** | **0.0** | **0.1** | **0.1** | **-0.1** | **0.0** | **-0.1** |
| **4. Primary balance (1-2+3)** | **-1.5** | **-1.9** | **-2.2** | **-2.2** | **-1.4** | **-1.6** |
| **5. Interests** | **1.1** | **1.2** | **1.4** | **1.3** | **1.4** | **1.3** |
| **6. Overall Balance** | **-2.6** | **-3.1** | **-3.5** | **-3.5** | **-2.9** | **-2.9** |
| Memo: | | | | | | |
| Structural overall balance | -2.7 | -3.1 | -3.6 | -3.5 | -2.8 | -3.0 |
| Weighted fiscal impulse | -0.5 | 0.0 | 0.5 | 0.5 | -0.5 | -0.2 |
| Output gap | -0.1 | -1.1 | -0.2 | -0.6 | 0.0 | -0.1 |

1/ The central government includes the ministries, national universities, public agencies and regional governments. The general government has a wider coverage that includes the central government, social security, regulators and supervisors, government charity organizations and local governments.
2/ Includes net accrued expenses to FEPC.
* Forecast.
IR: Inflation Report.

32. In 2017, all of the four member countries of the Pacific Alliance showed fiscal deficits. Peru recorded the second highest deficit in the group, just below Colombia. A decline in the deficit levels of Colombia and Chile is expected in 2018, in line with the fiscal consolidation plans of these countries. On the other hand, Mexico would remain as the country with the lowest fiscal deficit in the group, despite the expected increase of its deficit in 2018 after two years of consolidation, while Peru will be the country with the largest fiscal deficit consistent with the fiscal stimulus programmed for 2018.

**Graph 39**
**FISCAL DEFICIT: COUNTRIES OF PACIFIC ALLIANCE**
(% GDP)



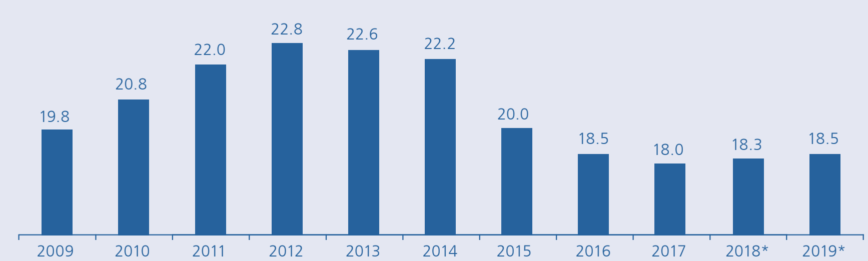

* Forecast.
Source: Consensus Forecast and BCRP.

In this context, it is essential to take the necessary measures to achieve a gradual reduction of the fiscal deficit and avoid increases in permanent expenditure that would lead to unsustainable fiscal accounts. Otherwise, one of the pillars of the country's macroeconomic stability would be put at risk.

## Tax Revenues

33. The current revenues of the general government were equivalent to 18.0 percent of GDP in 2017, 0.5 percentage points lower than in 2016. This deterioration of revenue is basically the result of the decrease in tax revenues, especially the revenues from the income tax and the VAT, during the first three quarters of the year.

**Graph 40**
**CURRENT REVENUES OF THE GENERAL GOVERNMENT: 2009-2019**
(% GDP)




* Forecast.

Revenue from the **income tax** fell by 0.4 points of GDP and thus represented 5.2 percent of GDP in 2017. This reduction resulted mainly from the decrease of the corporate income tax –third category income tax– due to the slowdown of domestic demand and the application of the MYPE Tax Regime, which implies a lower payment on account of the companies considered in this regime. The fall in revenue from the income tax was in part offset in the fourth quarter of the year by the increase in revenue from the regularization of taxes given that revenue for the repatriation of capital amounted to S/ 1.005 billion, much lower than expected.

On the other hand, revenue from the **VAT** decreased 0.2 points of GDP in 2017. This deterioration is explained by the lower growth of domestic demand in the first two quarters of the year and by the application of the Fair VAT, which allowed the extension of the payment of this tax to micro and small businesses. However, it should be pointed out that revenue from the VAT began to recover in real terms since the third quarter of the year.

Additionally, tax revenues were affected by tax refunds, which reached historical maximum levels given that priority was given to the requirements of exporters. Although the level of rebates remained at 2.5 percent of GDP, they became equivalent to 18.8 percent of the revenue from the VAT and the income tax (vs. 18.2 percent in 2016).

It is estimated that current revenues will increase consistently in the next 2 years to 18.5 percent of GDP in 2019. This scenario of revenue recovery takes into account the following factors: i) the acceleration of domestic demand; ii) higher revenue from the mining sector due to the better international prices of minerals; iii) the return of tax refunds to their historical levels, and iv) the increase in the rate of withholdings, or advance payment, of the VAT from 10 percent to 12 percent, which would be in effect from 2018 for various business services in order to reduce the non-payment of the VAT.

**Table 23**
**CURRENT REVENUES OF THE GENERAL GOVERNMENT**
(% GDP)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **TAX REVENUES** | **14.0** | **13.4** | **13.9** | **13.9** | **14.1** | **14.2** |
| Income tax[1/] | 5.6 | 5.2 | 5.3 | 5.4 | 5.5 | 5.6 |
| Value added tax | 8.0 | 7.8 | 7.9 | 7.9 | 8.0 | 8.0 |
| Excise tax | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| Import duties | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 | 0.2 |
| Other tax revenues | 1.7 | 1.7 | 1.8 | 1.7 | 1.7 | 1.6 |
| Tax returns | -2.5 | -2.5 | -2.2 | -2.2 | -2.1 | -2.1 |
| **NON-TAX REVENUES** | **4.5** | **4.6** | **4.5** | **4.4** | **4.5** | **4.3** |
| **TOTAL** | **18.5** | **18.0** | **18.3** | **18.3** | **18.5** | **18.5** |

1/ Includes revenues by repatriation of capital.
* Forecast.
IR: Inflation Report.

## Public Expenditure

34. In 2017, the **non-financial expenditure** of the general government represented 20.0 percent of GDP, a percentage 0.1 percentage points higher than in 2016. This increase was due to higher current expenditure, especially in salaries and in goods and services during the fourth quarter of the year. It should also be pointed out that gross capital formation recovered from the second half of 2017 –after four continuous quarters of decline– thanks to greater expenditure in the implementation of improvement works and the expansion of the potable water and sewerage systems, as well as in the implementation of the first projects for the Pan American Games.

    In 2018, expenditure would represent 20.3 percent of GDP, 0.3 percentage points of GDP more than the level registered in 2017. This projection is basically explained by the increase in gross capital formation, which would reach 4.3 percent of GDP, to carry out the Reconstruction works and the Pan American Games. In addition to this, the government has foreseen to increase investment in water and sanitation projects and to promote investment in large projects, such as Line 2 of the Lima Metro, the Puerto Bermúdez-San Alejandro highway, and the second phase of the Majes Siguas II project.

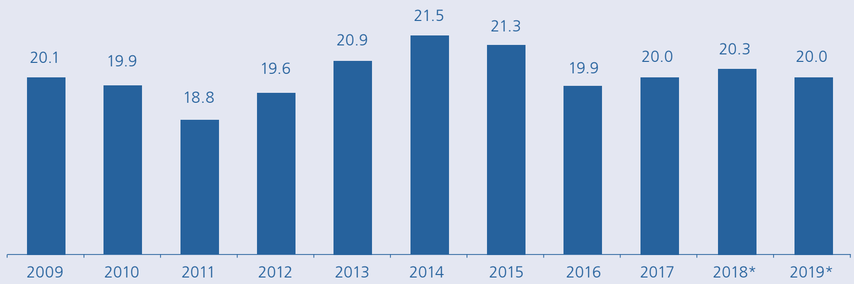
    Expenditure is expected to decrease thereafter to 20.0 percent of GDP in 2019 as a result of an adjustment in current expenditure, which is consistent with the gradual reduction of the fiscal deficit.

**Table 24**
**NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT**
(% GDP)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **Current expenditure** | **15.3** | **15.3** | **15.2** | **15.3** | **14.8** | **15.1** |
| National Government | 10.5 | 10.4 | 10.5 | 10.5 | 10.1 | 10.2 |
| Regional Governments | 3.1 | 3.3 | 3.2 | 3.2 | 3.1 | 3.2 |
| Local Governments | 1.7 | 1.6 | 1.6 | 1.6 | 1.6 | 1.7 |
| **Capital expenditure** | **4.7** | **4.7** | **5.3** | **5.0** | **5.2** | **4.9** |
| **Gross capital formation** | **4.1** | **4.0** | **4.7** | **4.3** | **4.6** | **4.3** |
| National Government | 1.4 | 1.4 | 1.7 | 1.5 | 1.8 | 1.6 |
| Regional Governments | 0.9 | 0.8 | 1.0 | 0.9 | 0.9 | 0.8 |
| Local Governments | 1.8 | 1.8 | 2.0 | 1.9 | 1.9 | 1.9 |
| **Others** | **0.6** | **0.7** | **0.6** | **0.7** | **0.5** | **0.6** |
| **TOTAL** | **19.9** | **20.0** | **20.5** | **20.3** | **20.0** | **20.0** |
| National Government | 12.5 | 12.5 | 12.7 | 12.7 | 12.4 | 12.4 |
| Regional Governments | 3.9 | 4.1 | 4.1 | 4.1 | 4.1 | 4.0 |
| Local Governments | 3.5 | 3.4 | 3.7 | 3.6 | 3.6 | 3.6 |

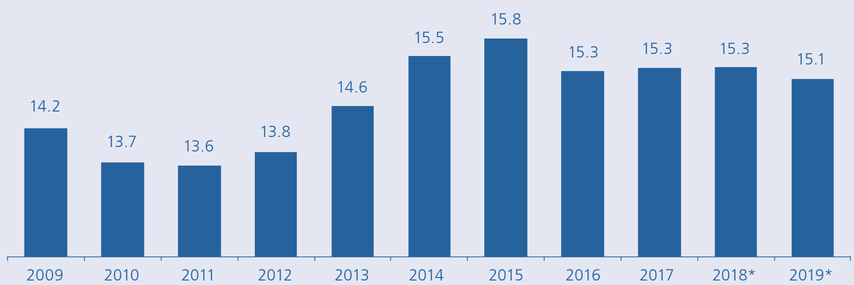
* Forecast.
IR: Inflation Report.

**Graph 41**
**NON-FINANCIAL EXPENDITURE OF THE GENERAL GOVERNMENT: 2009-2019**
(% GDP)



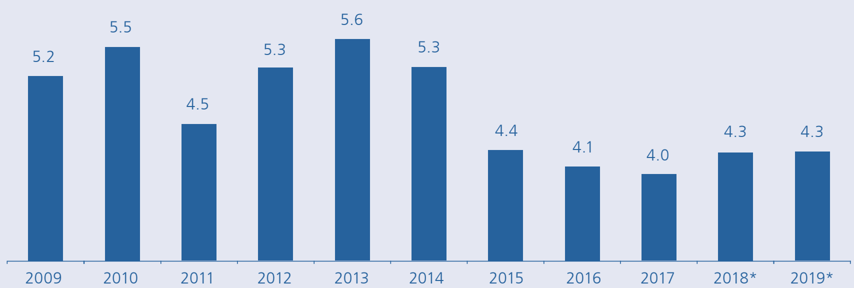

* Forecast.

**Graph 42**
**CURRENT EXPENDITURE OF THE GENERAL GOVERNMENT**
(% GDP)




* Forecast.

**Graph 43**
**GROSS CAPITAL FORMATION OF THE GENERAL GOVERNMENT: 2009-2019**
(% GDP)

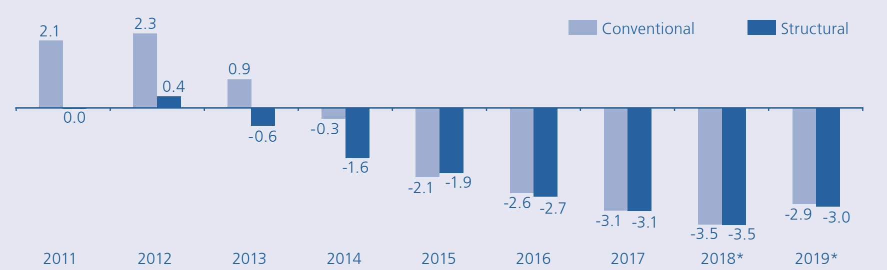



* Forecast.

## Structural Balance and Fiscal Impulse

35. The structural economic balance is an indicator that differs from the conventional economic balance in that it isolates from the latter the transitory effects of the business cycle and the effects of the prices of the commodities relevant to our economy. In 2017, the structural economic balance showed a deficit of 3.1 percent of GDP, while in 2018 the structural deficit is estimated to increase to 3.5 percent and to decline thereafter to 3.0 percent in 2019.

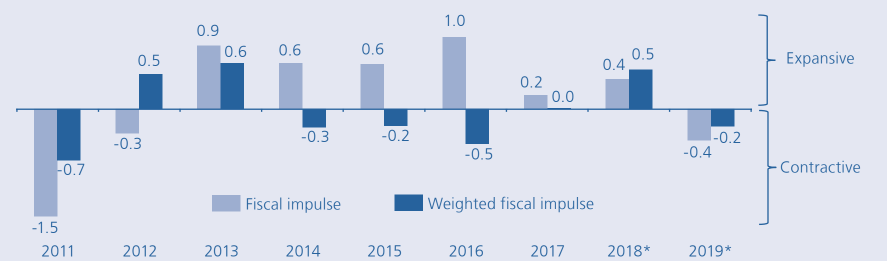
**Graph 44**
**CONVENTIONAL AND STRUCTURAL ECONOMIC BALANCE OF THE NON-FINANCIAL PUBLIC SECTOR: 2011-2019**
(% GDP)




* Forecast.

36. The fiscal impulse measures the impact of the tax policy on the level of economic activity, isolating the factors associated with the business cycle. In order to determine the fiscal stance more accurately, we weigh it according to the differentiated multiplier effect of changes in the treasury's revenues and expenditures. Taking this into account, in 2017 the weighted fiscal impulse was nil. Because of this, the growth of public investment of 14.2 percent in real terms projected for 2018 implies a weighted fiscal impulse of 0.5 percentage points of the potential output. In 2019 the weighted fiscal impulse should be contractionary, in line with the reduction of expenditure.

**Graph 45**
**FISCAL IMPULSE AND WEIGHTED IMPULSE [1/]**
(% Potential GDP)




1/ The weighted impulse takes account the multiplier model of changes in the incomes, current expensives and public investment.
* Forecast.

**Table 25**
**WEIGHTED FISCAL IMPULSE**
(% of potential GDP)

| | 2015 | 2016 | 2017 | 2018* | 2019* |
|---|---|---|---|---|---|
| **1. Fiscal impulse (a+b)** | **0.6** | **1.0** | **0.2** | **0.4** | **-0.4** |
| a. By revenues | 0.9 | 1.7 | 0.3 | -0.1 | -0.2 |
| b. By expenditures (i+ii) | -0.3 | -0.7 | -0.1 | 0.4 | -0.2 |
| i. Current 1/ | 0.2 | 0.0 | -0.1 | 0.1 | -0.1 |
| ii. Capital | -0.4 | -0.6 | 0.0 | 0.3 | -0.1 |
| **2. Weighted impulse 2/** | **-0.2** | **-0.5** | **0.0** | **0.5** | **-0.2** |
| a. By revenues | 0.2 | 0.4 | 0.1 | 0.0 | -0.1 |
| b. By expenditures (i+ii) | -0.5 | -0.9 | -0.1 | 0.6 | -0.2 |
| i. Current 1/ | 0.2 | 0.0 | -0.1 | 0.1 | -0.1 |
| ii. Capital | -0.6 | -0.9 | 0.0 | 0.5 | -0.1 |

* Forecast.
1/ Includes public enterprises.
2/ Weighted by fiscal multiplier. In boom periods: Revenues 0; current expenditure 0.28; capital expenditure 0.73; and in slump periods: Revenues 0.25; current expenditure 0.93; capital expenditure 1.42.

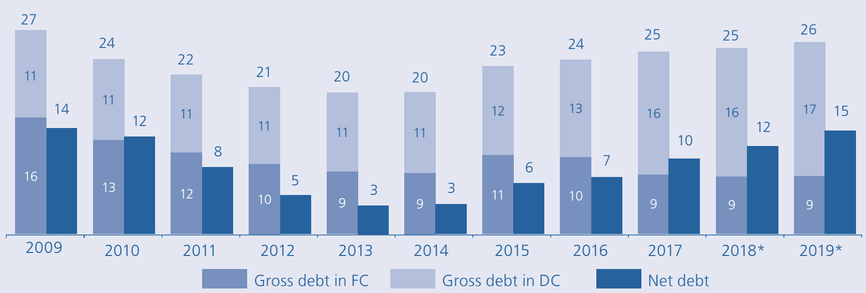
## Public Debt

37. The financing required to cover the fiscal deficit and the amortization of the public debt would decline from S/ 30 billion in 2018 to S/ 28 billion in 2019. In GDP terms, these financial requirements decrease from 4.0 percent of GDP in 2018 to 3.5 percent of GDP in 2019.

The gross debt balance of the non-financial public sector would be equivalent to 26 percent of GDP at the end of the forecast horizon. It is worth noting that the ratio of local currency in the debt portfolio would reach 66 percent in 2019, 26 percentage points of GDP above the ratio recorded at the end of 2009.

On the other hand, the net debt would increase to 15 percent of GDP by 2019. In this evolution, it is worth highlighting the reduction in public sector assets, which will be used mainly to finance the reconstruction of the infrastructure damaged by El Niño Costero and other general expenses.

**Graph 46**
**NON-FINANCIAL PUBLIC SECTOR DEBT: 2009-2019**
(% GDP)




* Forecast.

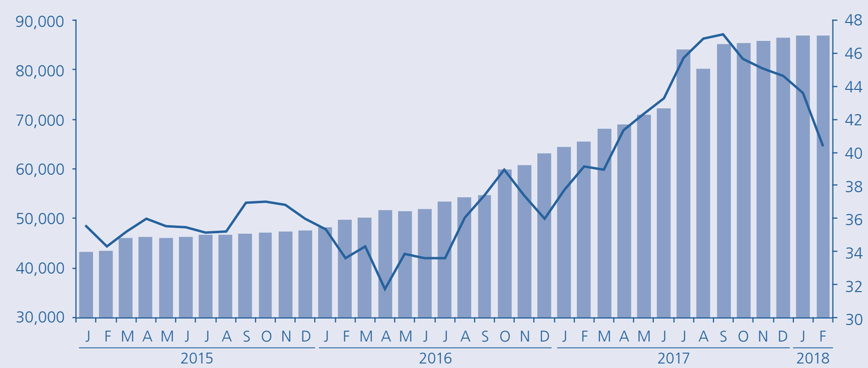
**Table 26**
**FINANCIAL REQUIREMENTS OF THE NON-FINANCIAL PUBLIC SECTOR AND ITS FUNDING**
(Million S/)

| | 2016 | 2017 | 2018* | | 2019* | |
|---|---|---|---|---|---|---|
| | | | IR Dec.17 | IR Mar.18 | IR Dec.17 | IR Mar.18 |
| **I. USES** | **31,749** | **39,685** | **30,042** | **29,912** | **27,130** | **27,911** |
| 1. Amortization | 14,829 | 17,719 | 3,673 | 3,662 | 4,349 | 5,007 |
| a. External | 5,634 | 13,589 | 1,427 | 1,510 | 2,686 | 3,731 |
| b. Domestic | 9,195 | 4,130 | 2,246 | 2,153 | 1,663 | 1,276 |
| *Of which: Recognition bonds* | *629* | *818* | *858* | *825* | *658* | *658* |
| 2. Overall balance | 16,920 | 21,967 | 26,369 | 26,250 | 22,781 | 22,903 |
| (Negative sign indicates surplus) | | | | | | |
| **II. SOURCES** | **31,749** | **39,685** | **30,042** | **29,912** | **27,130** | **27,911** |
| 1. Disbursements and other | 30,045 | 33,041 | 25,731 | 19,074 | 24,017 | 22,835 |
| 2. Change on deposits and others[1/] | 1,704 | 6,644 | 4,311 | 10,838 | 3,113 | 5,076 |
| Memo: | | | | | | |
| % GDP | | | | | | |
| Gross debt balance | 23.6 | 24.7 | 26.2 | 25.3 | 27.4 | 26.3 |
| Net debt balance[2/] | 6.7 | 9.4 | 12.6 | 12.3 | 15.0 | 14.8 |

1/ A positive sign indicates a reduction of deposits.
2/ Defined as the difference between gross public debt and NFPS deposits.
* Forecast.
IR: Inflation Report.

38. The balance of Peru's sovereign bonds increased from S/ 86.41 billion in December 2017 to S/ 86.910 billion in February 2018 (S/ 496 million). Moreover, 2018 VAC bonds for a total of S/ 759 million issued in 2013 matured on February 12. In the same period, the participation of non-resident investors decreased by S/ 3,40 billion in a context in which there was a greater preference in international financial markets for assets in the developed economies. This behavior of non-resident investors in the debt market has not been an event observed exclusively in Peru; the redemptions of fixed income securities in emerging markets has decreased due to greater risk aversion in global markets.

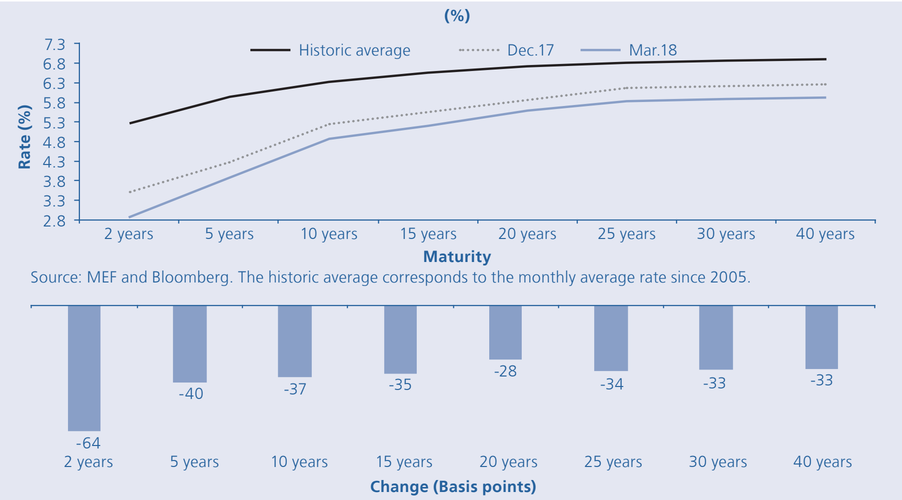
**Graph 47**
**BALANCE OF SOVEREIGN BONDS AND SHARES OF NON-RESODENT INVESTORS**
(Amounts in million soles and shares in %)




Source: MEF.

It should be pointed out that the sovereign yield curve has not been affected by the reduction in the participation of non-resident investors as there has been a substantial demand from local investors. On the other hand, the bonds have registered significant valuations despite the financial turbulence that affected the stock exchanges in February. In the short section of the yield curve, interest rates fell by an average of 52 basis points, while in the medium and long tranches, interest rates fell by an average of 34 basis points.

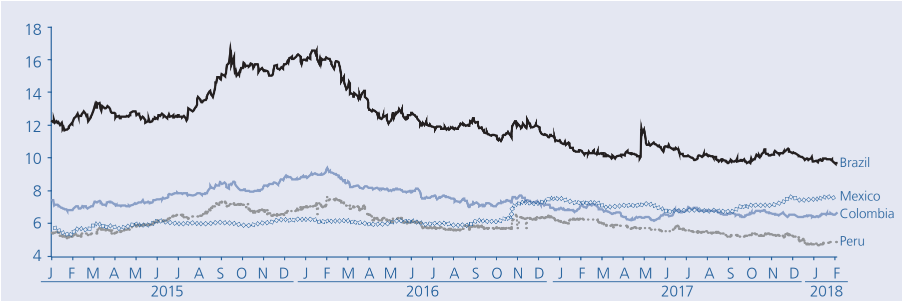
**Graph 48**
**YIELD CURVE OF PERUVIAN SOVEREIGN BONDS**




Source: MEF and Bloomberg. The historic average corresponds to the monthly average rate since 2005.

In the market of Latin American government debt in local currency, Chile and Peru continue to show lower 10-year interest rates than other countries. On average, the interest rates of Chile, Brazil, Colombia, and Peru have shown a reduction of 19 basis points between December 2017 and February 2018. It is worth pointing out that, since February 2, interest rates have increased by between 3 and 22 basis points as a result of the process of monetary normalization in the United States.

**Graph 49**
**10-YEAR TREASURY BOND YIELDS IN DOMESTIC CURRENCY**
(%)



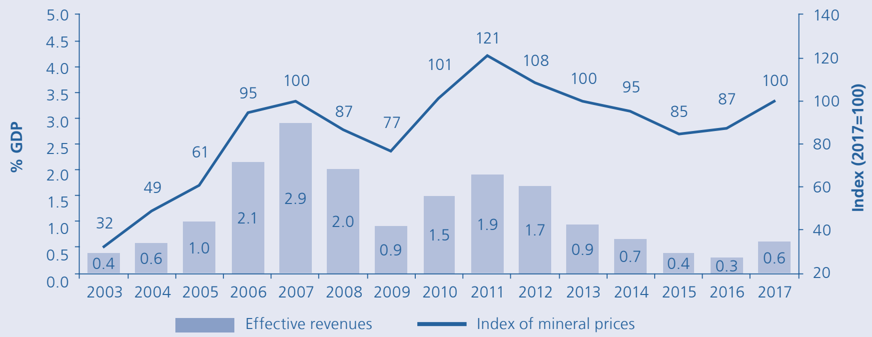

Source: MEF and Bloomberg.

**Box 4**
**TERMS OF TRADE AND TAX REVENUE**

A characteristic feature of the emerging economies producing raw materials is that they show a positive relationship between their terms of trade and their tax revenues.

The following graph shows that Peru's tax revenue from the mining sector (comprising the income tax of mining companies, mining royalties, the Special Tax on Mining, and the Special Levy on Mining has decreased from 2.9 percent of GDP in 2007[14] to 0.6 percent of GDP in 2017 despite the fact that the nominal prices of mining exports are similar in both years (and have remained, on average, only 4 percent below the 2007 level during 2008-2017).

**MINING REVENUES VERSUS MINERAL PRICES**

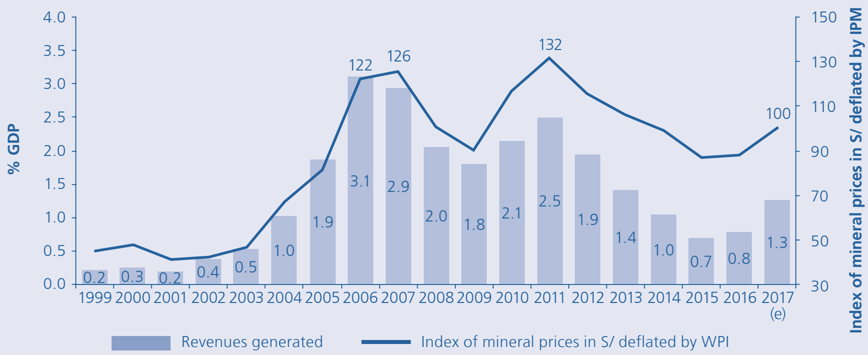



The tax revenue registered in the tax statistics only shows the payments of tax obligations in cash (but not the usage of tax credits by taxpayers), so it is convenient to present revenue measured as a tax obligation ("generated" or accrual basis). In addition to this, the indices of nominal export prices do not consider the increase in domestic production costs. Since there is no indicator of costs at the sector level, one way to introduce this effect in the analysis is to adjust the price of mining exports according to the evolution of the wholesale price index (WPI), which is a gross indicator of the cost of goods and services to companies.

The following graph shows the relationship between the tax obligations of the mining sector (amount paid plus the amounts credited) and the real international prices after the adjustments have been made. Since 2006, revenue has decreased by 1.8 percent of GDP (from 3.1 percent of GDP in 2006 to an estimated 1.3 percent of GDP in 2017), while the real value of the prices of mining exports has decreased by 18 percent in the same period.

14 In 2007 tax revenue only included the income tax and mining royalties because the other taxes were only introduced in 2011.

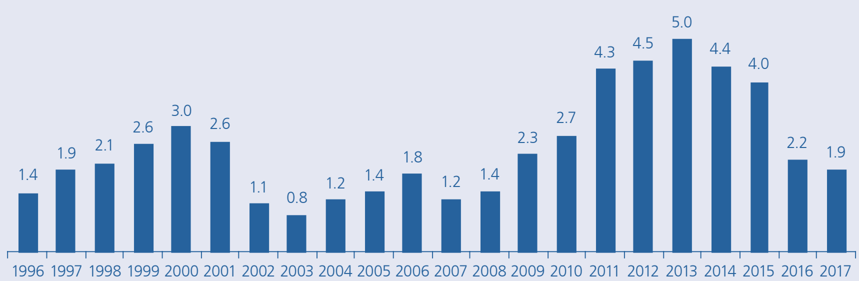
**MINING REVENUES VERSUS MINERAL PRICES**




This temporary result may be explained by the tax treatment given to mining companies' income tax for mining investments, since they have access to an accelerated depreciation regime that allows them a greater deduction for depreciation expense in certain assets (20 percent vs. 10 percent in the General Regime). For example, mining companies can deduct the amount paid for their fixed assets in 5 years, which temporarily reduces their income tax obligation, and may even generate tax losses if the amount of their investment is significant. However, this effect is temporary because once the deduction for depreciation is exhausted, their tax obligation increases significantly because their deductible expense decreases.

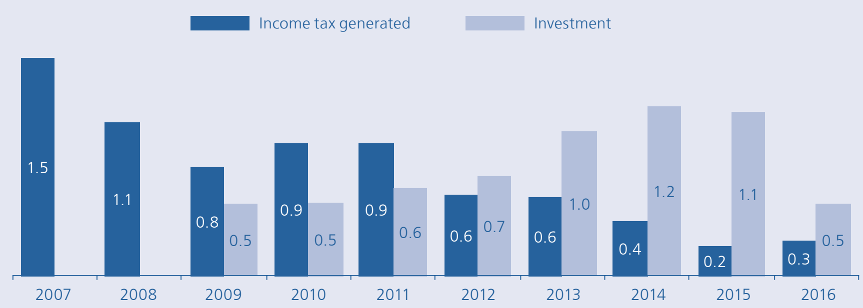
According to data of the Ministry of Energy and Mines, investment in the mining sector has experienced two boom cycles in recent decades: the first one, from 1996 to 2001, and the second one, from 2009 to 2015. The latter was the most significant boom since the size of investment reached more than 4 percent of GDP in several years. It is this cycle that would account for the temporary adverse impact observed on revenue in recent years.

**INVESTMENT IN THE MINING SECTOR**
(% GDP)



Thus, the information available on the main copper mining companies (Southern Peru Copper Co., Antamina, and Cerro Verde)[15] shows that higher investment is associated with a lower income tax liability.

**INCOME TAX GENERATED AND INVESTMENT OF MAIN COOPER FIRMS**
(% GDP)




At the level of individual companies, for example, we can see that companies such as Chinalco (Toromocho Project), which made investments for a total of US$ 4.11 billion between 2011 and 2016 and started operations in mid-2015, have not reported income taxes for FY 2015 and 2016. Another example is Las Bambas, which made a total investment of US$ 6.94 billion between 2011 and 2016 and started operations in the first months of 2016, but report no income tax for that FY.

The regulation of the corporate income tax allows companies to carry forward losses, so the postponement in the tax payment originated by mining investment could be extended until the balances in favor of the taxpayers are exhausted.

Therefore, if the markets maintain the current international prices of minerals, the higher production levels resulting from the investments made would translate into future improvements in tax revenue, increasing the levels currently observed. In addition, this effect will be further enhanced by the revenue derived from mining projects that have started operations in recent years.

In order to estimate the size of the impact of export prices on fiscal revenues, we modified the VAR approach of proposed by Medina (2010)[16], who documented that fiscal revenues and also primary public spending have a positive reaction to increases in export prices for eight Latin American countries. His model includes the growth rates of export prices, current income and

15 Detailed information of investment by mining companies is available since 2009 (Source: Anuarios Mineros – MINEM). As for information on the income tax, detailed information about these companies has been collected since 2007 (Source: Estudios de Conciliación Nacional – EITI Perú).

16 Medina. L. (2010) "The Dynamic Effects of Commodity Prices on Fiscal Performance in Latin America" IMF Working Paper WP/10/192.

non-financial expenditures of the government, and GDP. We added information on investment in the mining sector to capture its adverse impact on tax revenues.

If this method is applied to Peruvian[17] quarterly data, we find that a one-time shock, equivalent to a standard deviation of the real growth rate of export prices (around 11 percent), raises temporarily the rate of real growth of fiscal revenues, which has an impact on the level of general government resources of around 4.6 percent and of 5.6 percent in the second and third year after the shock. This implies an increase in public resources by an annualized estimate of up to 1 percent of GDP in this horizon.

An improvement of this magnitude in fiscal income shows that if export prices should continue showing similar levels in the next years, a percentage of the fiscal adjustment required to return government spending to the deficit target of 1 percent of GDP by 2021 will be provided by increases in tax revenue.

17 The sample includes data from the second quarter of 1997 to the fourth quarter of 2017.

# V. Monetary Policy and Financial Markets

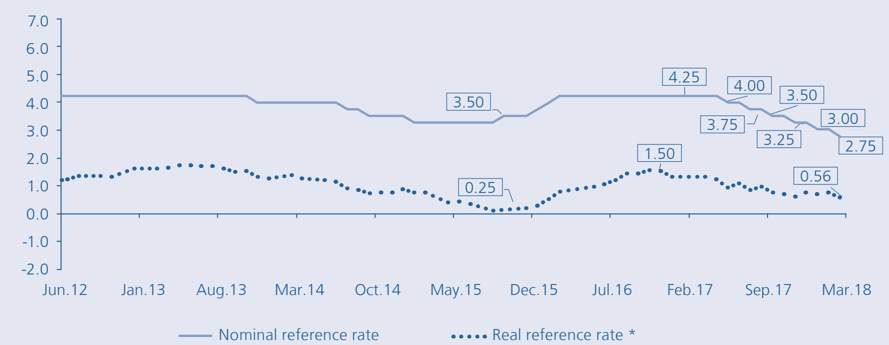
## Monetary policy actions

39. The monetary policy actions of BCRP between December 2017 and March 2018 continued to be oriented to maintaining an expansionary monetary stance in a context marked by a weak business cycle and by the reversal of supply shocks that have generated downward pressures on inflation.

In this context, the Board of BCRP lowered the benchmark rate twice, first to 3.0 percent in January and then to 2.75 percent in March, its current level. The Board has also maintained a neutral communication on future changes in the monetary policy position, emphasizing that the Board of Directors pays close attention to "new data on inflation and inflation determinants to assess the convenience of making additional changes in the monetary policy stance if necessary".

As a result of these monetary policy actions, the real interest rate stood at 0.6 percent. Taking into account that the estimated neutral real interest rate is 1.75 percent, the monetary policy decisions adopted reflect a clear expansionary position that is consistent with a projection according to which overall inflation and core inflation will gradually converge to 2 percent in the forecast horizon. The projection is also consistent with a level of economic activity below its potential level, which does not generate inflationary pressures, and which will also reach its potential level gradually.

**Graph 50**
**NOMINAL AND REAL* REFERENCE INTEREST RATE**
(%)




* Considers expectation of inflation.

40. The monetary policy decisions of reducing the interest rate have taken into account the following factors:

    i. Between November 2017 and February 2018, year-on-year inflation continued to decrease from 1.54 to 1.18 percent, and remained in the lower band of the target range for four consecutive months. This result is mainly explained by the reversal of supply shocks, which generated a decrease in the prices of some perishable foods, and by a level of economic activity that is lower than its potential level of growth.

       As a result of this, the year-on-year variation of the average price of food and energy decreased from 0.76 percent in November to 0.28 percent in February. Moreover, inflation without food and energy continued showing a downward trend, declining from 2.23 percent in November to 1.97 percent in February, which reflects lower demand pressures.

       The year-on-year rate of inflation is projected to fall below 1.0 percent in March as a result of a March 2017 base effect associated with the effects of El Niño Costero –which led to a monthly inflation rate of 1.3 percent–, and to converge gradually thereafter to 2.0 percent.

    ii. Expectations of inflation in 12 months continued decreasing and fell from 2.48 percent at the end of November 2017 to 2.19 percent in February 2018. Because of this, part of the reduction of 50 points in the benchmark interest rate has been to maintain the expansionary monetary policy stance, which is measured by the ex-ante real interest rate.

    iii. The growth of economic activity remains below its potential level in a context of low inflation. This can be seen in the evolution of the output gap which still remains at negative levels, and which would indicate that there are no demand inflationary pressures.

    iv. The world economy continues to show favorable indicators, although greater uncertainty is observed in international financial markets. Activity indicators show a positive evolution in developed economies, particularly in the United States, as well as significant growth in the emerging economies, as in the case of China and India, and also better prospects in the economies of the region.

       However, recent events in the stock markets show that there is a risk of similar future corrections in markets that have been favored with a rapid valuation of their assets, which may have a loss of wealth effect in the country of origin and that could spread to other markets, such as the commodity markets, and affect the emerging economies.

41. Future adjustments in the benchmark interest rate will depend on the new information available on inflation and its determinants, as well as on the impact that it may have on the inflation forecast horizon.

## Interest rates

42. Interest rates in domestic currency decreased in the money and credit markets, in line with the reduction in the benchmark rate. Flexibility in monetary conditions has allowed the lending 3-month corporate prime rate to fall 27 basis points between December 2017 and February 2018. Moreover, rates in the credit market fell by an average of 51 basis points in January in five of the six loan segments, with the rate fall in consumer loans standing out with a decrease of 297 basis points.

    Similarly, the banks' interest rates on deposit dropped 29 basis points for term deposits between 30 and 360 days, while the corporate prime rates for 1 month-deposits, 2 month-deposits and 3 month-deposits declined by 20, 23, and 29 basis points, respectively.

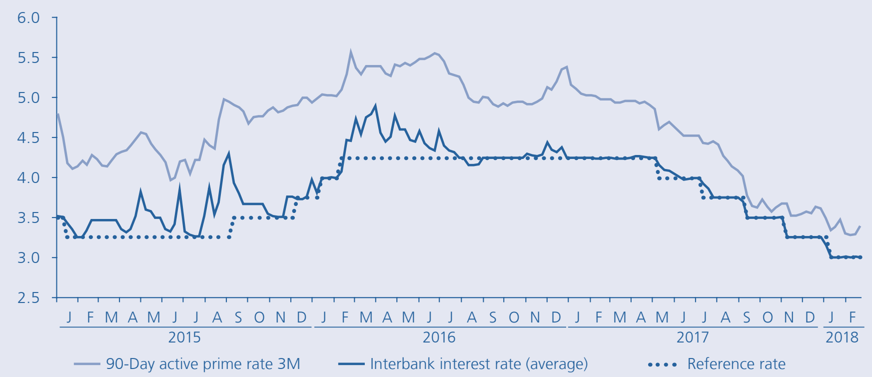
    As shown in the following table, except for the interest rate on consumer loans, almost all of the interest rates in domestic currency are below their historical average levels, which is consistent with expansionary monetary conditions.

**Table 27**
**INTEREST RATE IN DOMESTIC CURRENCY**
(%)

| | | Dec.15 | Dec.16 | Mar.17 | Jun.17 | Sep.17 | Dec.17 | Jan.18 | Feb.18 | Historical average |
|---|---|---|---|---|---|---|---|---|---|---|
| **Pasive** | Deposits up to 30-day | 3.88 | 4.31 | 4.05 | 3.89 | 3.08 | 2.97 | 2.91 | 2.72 | 3.60 |
| | On 31 to 180-day term deposits | 4.53 | 4.73 | 4.42 | 4.18 | 3.60 | 3.30 | 3.18 | 2.97 | 3.78 |
| | On 181 to 360-day term deposits | 4.77 | 4.86 | 4.77 | 4.35 | 4.08 | 3.61 | 3.53 | 3.33 | 4.22 |
| **Active** | Corporate | 6.18 | 5.88 | 5.78 | 5.31 | 4.49 | 4.03 | 4.03 | 3.76 | 5.62 |
| | Large companies | 7.12 | 7.12 | 7.52 | 7.04 | 6.68 | 6.23 | 6.46 | 6.54 | 7.13 |
| | Medium-sized enterprises | 10.23 | 10.39 | 10.47 | 10.56 | 10.42 | 9.68 | 9.63 | 9.61 | 10.53 |
| | Small businesses | 20.45 | 21.65 | 21.54 | 20.78 | 20.27 | 19.76 | 19.85 | 19.77 | 21.74 |
| | Consumer | 44.03 | 46.77 | 45.24 | 45.64 | 48.34 | 48.56 | 48.45 | 45.59 | 41.86 |
| | Mortgage | 8.95 | 8.52 | 8.73 | 8.53 | 8.05 | 7.65 | 7.68 | 7.60 | 8.98 |

Source: SBS. Average comprise since September 2010 until February 2018.

**Graph 51**
**90-DAY CORPORATE PRIME, INTERBANK, AND REFERENCE RATE IN DOMESTIC CURRENCY**
(%)




Source: BCRP.

In the case of interest rates for operations in dollars, the interbank interest rate showed a stable behavior, while the 90-day prime interest rate increased from 2.18 to 2.55 percent in the same period, in line with the increase in the Federal Reserve interest rates in December 2017.

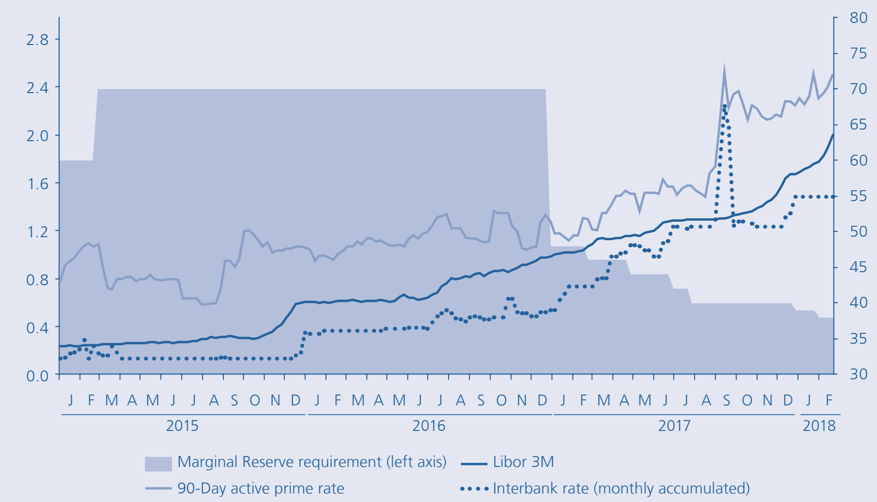
The increase in the 1-month and 3-month Libor rates was reflected in the financing cost of commercial banks, which have been transferring this cost to the majority of credit segments. On average, interest rates have increased by 59 basis points. Likewise, corporate prime rates for 30-day, 60-day, and 90-day deposits have increased by 7, 9, and 8 basis points, respectively.

**Table 28**
**INTEREST RATE IN FOREIGN CURRENCY**
(%)

| | | Dec.15 | Dec.16 | Mar.17 | Jun.17 | Sep.17 | Dec.17 | Jan.18 | Feb.18 | Historical average |
|---|---|---|---|---|---|---|---|---|---|---|
| | Deposits up to 30-day | 0.16 | 0.23 | 0.50 | 0.65 | 1.12 | 1.10 | 1.07 | 1.01 | 0.42 |
| **Pasive** | On 31 to 180-day term deposits | 0.38 | 0.51 | 0.69 | 0.87 | 1.13 | 1.32 | 1.35 | 1.27 | 0.64 |
| | On 181 to 360-day term deposits | 0.48 | 0.61 | 0.77 | 0.73 | 1.01 | 1.05 | 1.23 | 1.25 | 0.69 |
| | Corporate | 2.33 | 2.47 | 3.03 | 2.42 | 3.13 | 3.22 | 3.37 | 2.91 | 3.00 |
| | Large companies | 5.54 | 5.02 | 5.12 | 5.29 | 4.98 | 5.25 | 5.25 | 5.06 | 5.41 |
| **Active** | Medium-sized enterprises | 8.06 | 6.91 | 7.07 | 6.98 | 6.70 | 6.35 | 6.84 | 7.29 | 8.31 |
| | Small businesses | 11.26 | 10.67 | 9.83 | 10.56 | 8.56 | 7.29 | 8.83 | 8.90 | 12.86 |
| | Consumer | 32.07 | 32.08 | 32.54 | 33.53 | 33.51 | 32.91 | 33.85 | 34.41 | 27.48 |
| | Mortgage | 6.71 | 6.14 | 6.35 | 6.13 | 5.94 | 5.90 | 5.84 | 5.91 | 7.49 |

Source: SBS. Average comprise since September 2010 until February 2018.

**Graph 52**
**90-DAY CORPORATE PRIME, INTERBANK OVERNIGHT, AND LIBOR 3 MONTHS IN FOREIGN CURRENCY**
(%)




Source: BCRP and Bloomberg.

43. In a context of lower demand for liquidity, and the consequent seasonal decline of the monetary base, the main monetary operations of BCRP between January and February were aimed at sterilizing excess liquidity. The following operations were carried out:

    a. CD BCRP: The net flow of these instruments was S/ 3.36 billion, of which S/ 2.61 billion is held by financial system participants.
    b. CDR BCRP: The net flow was S/ 1.05 billion.
    c. Term deposits and overnight deposits: The net flow was S/ 1.84 billion.
    d. Security repos: Net maturities amounted to S/ 3.31 billion.
    e. Currency repos: Net maturities amounted to S/ 800 million.

    The net asset position of BCRP relative to the financial system participants in domestic currency decreased by S/ 9.61 billion, which was in part offset by the decline of Public Sector deposits at the BCRP (S/ 4.99 billion) and by foreign exchange operations (S/ 1.41 billion). The monetary base decreased by S/ 2.78 billion due to the seasonal conditions that affect currency and reserve requirements at the beginning of the year.

**Table 29**
**MONETARY ACCOUNTS OF THE CENTRAL RESERVE BANK OF PERU**
(Million S/)

| | Balance | | | Flows | |
|---|---|---|---|---|---|
| | Dec. 31, 2017 | Jan 31, 2018 | Feb 28, 2018 | 2017 | 2018 2/ |
| **I. NET INTERNATIONAL RESERVES** | **206,132** | **207,012** | **201,744** | **6,314** | **-5,617** |
| **(Million US$)** | **63,621** | **64,290** | **61,885** | **1,936** | **-1,736** |
| **II. NET DOMESTIC ASSETS** | **-148,925** | **-141,482** | **-135,515** | **-2,481** | **2,823** |
| **1. Credit to the financial sector in soles** | **-9,327** | **-15,549** | **-18,932** | **-16,688** | **-9,605** |
| a. Security repos | 5,420 | 2,110 | 2,110 | 3,321 | -3,310 |
| b. Currency repos | 16,680 | 15,880 | 15,880 | -9,950 | -800 |
| c. Securities issued | -29,835 | -31,115 | -33,494 | -10,564 | -3,659 |
| i. CDBCRP | -29,000 | -30,280 | -31,607 | -10,534 | -2,607 |
| ii. CDRBCRP | -835 | -835 | -1,887 | -30 | -1,052 |
| d. Other deposits in soles | -1,592 | -2,424 | -3,428 | 505 | -1,836 |
| **2. Net assets public sector in soles** | **-43,271** | **-40,195** | **-38,278** | **-11,010** | **4,993** |
| **3. Credit to the financial sector in dolars** | **-56,152** | **-57,274** | **-50,479** | **7,268** | **5,955** |
| **(Million US$)** | **-17,331** | **-17,789** | **-15,490** | **2,228** | **1,841** |
| a. Deposits in foreign currency | -17,207 | -17,406 | -15,108 | 2,352 | 2,100 |
| b. Securities issued | -124 | -383 | -383 | -124 | -259 |
| i. CDLDBCRP | -124 | -383 | -383 | -124 | -259 |
| **4. Net assets public sector in dollars** | **-28,855** | **-28,463** | **-27,827** | **19,446** | **1,197** |
| **(Million US$)** | **-8,906** | **-8,839** | **-8,536** | **5,961** | **370** |
| **5. Other Net Accounts** | **-11,320** | **-10,665** | **-11,816** | **-1,497** | **283** |
| **III. MONETARY BASE (I+II) 1/** | **57,207** | **54,865** | **54,413** | **3,833** | **-2,794** |
| (% change 12 months) | 7.2% | 6.3% | 8.6% | | |

1/ Currency plus reserve requirement in domestic currency.
2/ As of February 28.

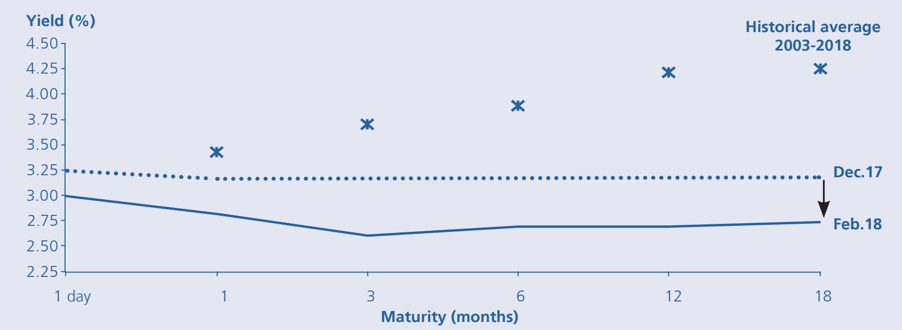
44. Between December 2017 and February 2018, the interest rates on CDBCRP loans decreased by an average of 47 basis points –a higher reduction than that of the benchmark rate (25 basis points)–, reflecting market expectations of additional reductions in the benchmark rate in the following months. In February, the yield curve showed an average level 72 points below the historical average level of the yield curve between 2003 and 2018.

**Table 30**
**INTEREST RATE OF AUCTIONS OF CD BCRP**
(%)

| | Months | | | | |
|---|---|---|---|---|---|
| | **1** | **3** | **6** | **12** | **18** |
| 4 Dec.17 | | | 3.32 | | |
| 6 Dec.17 | | | | | 3.38 |
| 7 Dec.17 | | | | 3.34 | |
| 11 Dec.17 | | | 3.29 | | |
| 12 Dec.17 | | 3.23 | | | |
| 13 Dec.17 | | 3.20 | | | |
| 14 Dec.17 | | 3.14 | 3.19 | 3.22 | |
| 15 Dec.17 | | 3.11 | | | |
| 18 Dec.17 | | | 3.10 | | |
| 20 Dec.17 | | | | | 3.10 |
| 21 Dec.17 | | | | 3.10 | |
| 27 Dec.17 | | | | | 3.17 |
| 28 Dec.17 | | | | 3.08 | |
| 3 Jan.18 | | | | | 3.10 |
| 4 Jan.18 | | | | 3.07 | |
| 8 Jan.18 | | | 2.95 | | |
| 10 Jan.18 | | | | | 2.97 |
| 11 Jan.18 | | | | 2.88 | |
| 12 Jan.18 | | 2.65 | 2.67 | | |
| 15 Jan.18 | | 2.64 | 2.67 | 2.73 | |
| 16 Jan.18 | | 2.69 | 2.67 | 2.75 | |
| 17 Jan.18 | | 2.75 | 2.71 | 2.75 | 2.77 |
| 18 Jan.18 | | 2.77 | 2.73 | 2.75 | |
| 22 Jan.18 | | | 2.74 | | |
| 24 Jan.18 | | | | | 2.73 |
| 25 Jan.18 | | | | 2.72 | |
| 26 Jan.18 | | 2.70 | 2.72 | 2.72 | |
| 29 Jan.18 | | | 2.72 | 2.70 | |
| 30 Jan.18 | | | 2.72 | 2.72 | |
| 31 Jan.18 | | | | | 2.73 |
| 1 Feb.18 | | | | 2.68 | |
| 5 Feb.18 | | | 2.69 | | |
| 6 Feb.18 | | | 2.69 | 2.70 | |
| 7 Feb.18 | | | 2.69 | 2.69 | 2.74 |
| 8 Feb.18 | | | 2.69 | 2.69 | |
| 9 Feb.18 | | | 2.69 | 2.69 | |
| 12 Feb.18 | | | 2.69 | 2.69 | |
| 13 Feb.18 | | | 2.69 | 2.69 | 2.72 |
| 14 Feb.18 | | | 2.69 | 2.70 | 2.72 |
| 15 Feb.18 | | | 2.69 | 2.70 | 2.74 |
| 16 Feb.18 | | | 2.69 | 2.70 | |
| 19 Feb.18 | | | 2.67 | | |
| 21 Feb.18 | | | | | 2.74 |
| 22 Feb.18 | | | | 2.69 | |
| 26 Feb.18 | | | 2.67 | 2.69 | |
| 27 Feb.18 | 2.76 | | 2.67 | | |
| 28 Feb.18 | 2.88 | | | | 2.74 |

Source: BCRP.

**Graph 53**
**YIELD CURVE OF CENTRAL BANK SECURITIES** 1/

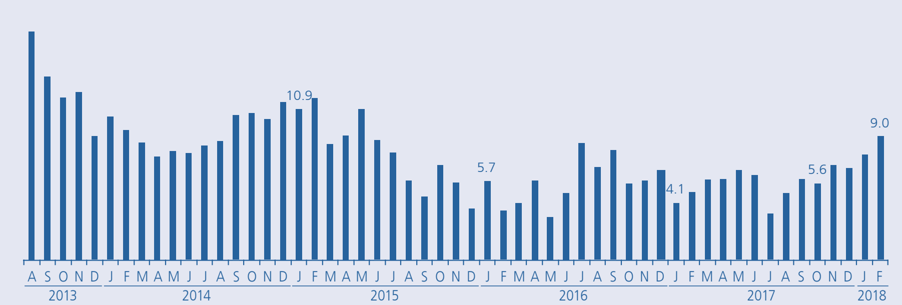



1/ Yield of CDBCRP average of period. One day rate corresponds to reference rate.
Source: BCRP.

## Liquidity

45. Showing a continued recovery since mid-2017, in line with the recovery of domestic demand, average currency in circulation –the monetary aggregate more associated with transactions– recorded a year-on-year growth rate of 9.0 percent in February 2018.

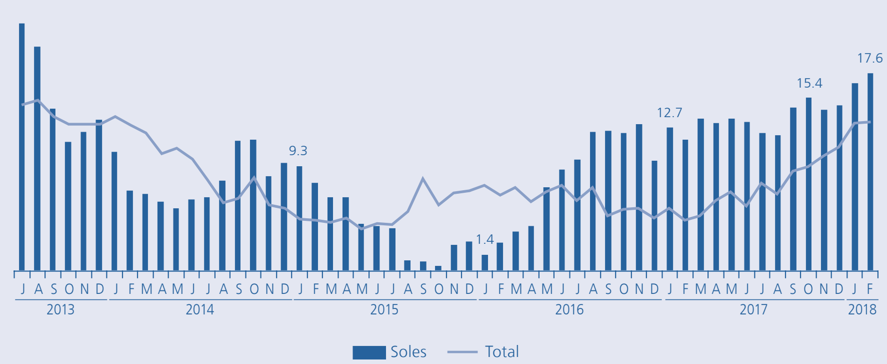
**Graph 54**
**AVERAGE CURRENCY**
(Annual % change)




Source: BCRP.

The year-on-year growth rate of private sector deposits increased from 11.0 percent in December to 13.3 percent in February. Moreover, deposits in soles grew nearly twice as much as deposits in dollars (17.6 percent and 7.2 percent, respectively).

**Graph 55**
**DEPOSITS OF THE PRIVATE SECTOR BY CURRENCY**
(Annual % change)




Source: BCRP.

**Table 31**
**MONETARY AND CREDIT ACCOUNTS OF THE DEPOSITORY CORPORATIONS (END-OF-PERIOD)**
(Annual % change)

| | Mar.16 | Jun.16 | Sep.16 | Dec.16 | Mar.17 | Jun.17 | Sep.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|---|---|---|---|---|
| Currency in circulation (average) | 4.1 | 4.9 | 8.0 | 6.5 | 5.8 | 6.2 | 5.9 | 6.7 | 7.6 | 9.0 |
| Deposits in domestic currency | 3.5 | 9.0 | 12.4 | 9.8 | 13.6 | 13.3 | 14.6 | 14.8 | 16.7 | 17.6 |
| Total deposits 1/ | 7.4 | 7.6 | 4.8 | 4.7 | 4.8 | 5.7 | 8.9 | 11.0 | 13.2 | 13.3 |
| Broad money in domestic currency | 4.1 | 8.4 | 11.1 | 9.0 | 11.5 | 10.7 | 11.8 | 12.5 | 14.2 | 15.2 |
| Total broad money 1/ | 7.0 | 7.5 | 5.2 | 5.1 | 4.9 | 5.2 | 8.0 | 10.1 | 12.1 | 12.4 |
| Credit to the private sector in domestic currency | 24.1 | 17.0 | 9.5 | 7.2 | 4.4 | 3.9 | 5.2 | 5.3 | 6.0 | 6.2 |
| Credit to the private sector 1/ | 8.7 | 7.4 | 5.0 | 5.6 | 4.3 | 4.2 | 5.0 | 6.2 | 6.7 | 7.0 |

1/ Balances in foreign currency are valuated at constant exchange rate on December 2017.
Source: BCRP.

This faster pace of growth of deposits in soles has been accompanied by a reduction in the dollarization ratio of deposits, which fell from 49.1 percent in December 2016 to 47.7 percent in December 2017 and to 47. 5 percent in February. People's deposits are less dollarized that the deposits of companies. Thus, the former showed a dollarization ratio of 35.0 percent in February, while the latter showed a dollarization ratio of 47.8 percent (at a current exchange rate).

**Table 32**
**RATIO OF DOLLARIZATION OF DEPOSITS**
(%)

| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **54.3** | **50.3** | **49.5** | **49.4** | **47.8** |
| Demand deposits | 52.2 | 47.7 | 47.1 | 47.9 | 46.7 |
| Savings deposits | 57.6 | 54.9 | 52.6 | 56.7 | 58.4 |
| Term deposits | 62.7 | 58.2 | 58.9 | 52.8 | 49.4 |
| **Individuals** | **36.3** | **33.9** | **34.6** | **34.7** | **35.0** |
| Demand deposits | 52.2 | 47.7 | 47.1 | 47.9 | 46.7 |
| Savings deposits | 40.0 | 39.4 | 38.7 | 39.5 | 38.4 |
| Term deposits | 30.7 | 26.8 | 29.3 | 28.2 | 30.0 |
| CTS | 30.1 | 28.4 | 26.7 | 26.7 | 27.3 |
| Other terms | 31.0 | 26.2 | 30.3 | 28.7 | 31.0 |
| **TOTAL** | **49.1** | **47.5** | **47.7** | **47.4** | **47.5** |
| **TOTAL LIQUIDITY 1/** | **34.6** | **32.7** | **32.4** | **33.0** | **32.7** |

1/ includes currency in circulation.

In line with the higher growth rate of deposits in soles and the new measures of reserve requirements in foreign currency applied by BCRP, the process of de-dollarization of liquidity is expected to continue in the following years. It is estimated that deposits in domestic currency will grow by more than 12 percent per annum in the next two years.

## Credit to the Private Sector

46. Credit to the private sector grew at a YoY rate of 7.3 percent in February, showing a faster pace of growth from the 6.6 percent rate recorded at the end of 2017, reflecting the higher growth rate of credit to business (6.0 percent), especially the higher growth rate of loans in dollars to corporations and large companies as well as the higher growth rate of loans in soles to micro and small businesses (9.0 percent).

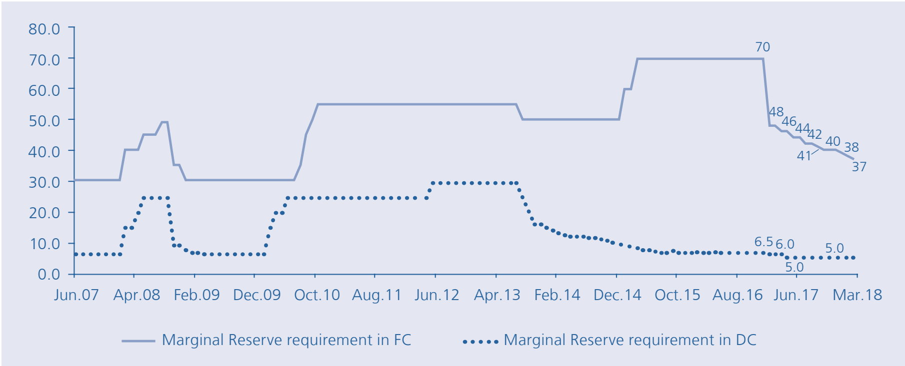
On the other hand, personal loans grew at a YoY rate of 9.6 percent, with mortgage loans showing an increase of 9.0 percent and other consumer loans showing a growth rate of 14.5 percent.

**Table 33**
**CREDIT TO THE PRIVATE SECTOR**
(12-month % change)

| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **4.8** | **4.5** | **5.4** | **5.9** | **6.0** |
| Corporate and large companies | 4.5 | 3.3 | 6.0 | 6.4 | 7.1 |
| Medium-sized enterprises | 2.7 | 2.7 | 0.6 | 1.4 | 0.8 |
| Small business and Microbusinesses | 7.8 | 9.2 | 9.5 | 9.7 | 9.0 |
| **Individuals** | **7.2** | **8.1** | **8.7** | **8.8** | **9.6** |
| Consumer | 8.7 | 8.3 | 8.8 | 9.0 | 10.0 |
| Car loans | -6.9 | -5.5 | -4.2 | -4.1 | -0.8 |
| Credit cards | 8.2 | 2.9 | 3.0 | 3.2 | 3.3 |
| Rest | 10.2 | 12.4 | 13.0 | 13.2 | 14.5 |
| Mortgage | 5.0 | 7.8 | 8.6 | 8.6 | 9.0 |
| **TOTAL** | **5.6** | **5.8** | **6.6** | **7.0** | **7.3** |

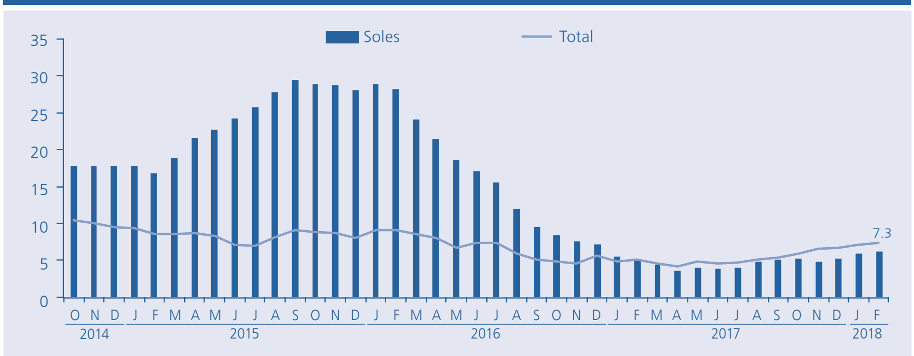
47. In the months of January, February and March, BCRP continued to lower the cap on the average rate of reserve requirements and the marginal rate of reserve requirements in dollars, as a result of which these rates decreased from 40 percent in December to 37 percent in March. These measures were aimed at maintaining expansionary domestic financial and credit conditions and at mitigating the effect of international interest rate hikes on domestic monetary and credit conditions in dollars.

**Graph 56**
**RESERVE REQUIREMENT IN DOMESTIC AND FOREIGN CURRENCY**
(As % banks' liabilities)




48. By currencies, a higher rate of growth was observed in credit in dollars, which reflects the recovery of credit to the corporate sector, especially in credit to the mining sector, while credit in soles showed a faster pace of growth in the month of February 2018 (6.2 percent versus 5.3 percent in December 2017), reflecting the higher dynamism observed in mortgage loans recently. Moreover, the dollarization ratio of credit to the private sector remained at 29.3 percent, the same level as that recorded at the end of 2017.

**Graph 57**
**TOTAL CREDIT TO THE PRIVATE SECTOR AND IN DOMESTIC CURRENCY**
(12-month % change)



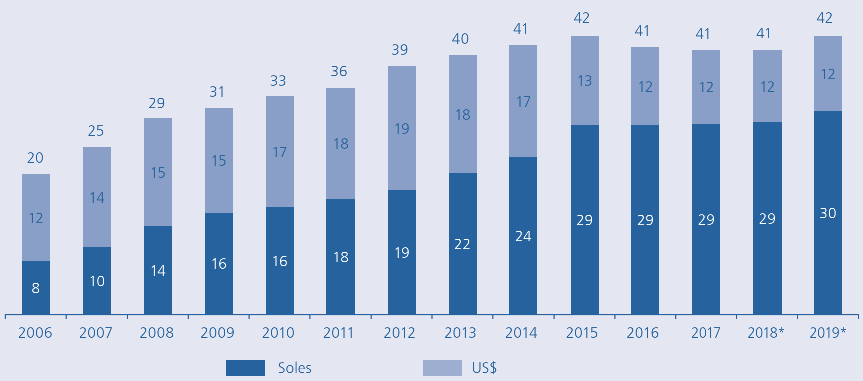
| Table 34<br>**CREDIT TO THE PRIVATE SECTOR**<br>(Annual % change) | | | | | | |
|---|---|---|---|---|---|---|
| | **Dec.16** | **Jun.17** | **Sep.17** | **Dec.17** | **Jan.18** | **Feb.18** |
| Domestic currency | 7.2 | 3.9 | 5.2 | 5.3 | 6.0 | 6.2 |
| Foreign currency | 1.9 | 5.0 | 4.6 | 8.5 | 8.7 | 9.2 |
| **Total*** | **5.6** | **4.2** | **5.0** | **6.2** | **6.7** | **7.0** |

* Excludes credits in branch abroad.

## Forecast on Credit to the Private Sector

49. In the 2018-2019 forecast horizon, the growth rates of credit to the private sector and liquidity are expected to evolve in line with the pace of growth of domestic demand. In 2018, total credit is forecast to grow 7.5 percent and in 2019, it would grow 7.8 percent. These forecasts are in line with the monetary easing actions implemented by BCRP, both in terms of lowering the benchmark interest rate and in terms of reducing the rates of reserve requirements in both domestic currency and foreign currency.

**Graph 58**
**RATIO CREDIT/GDP**
(%)




* Forecast.

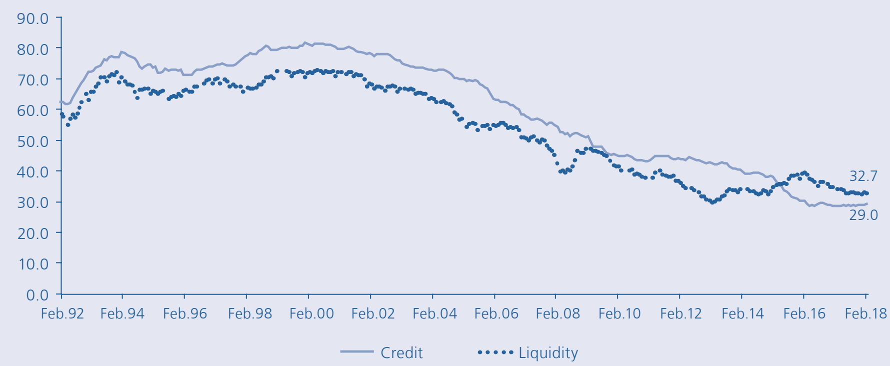
50. In February, the ratio of dollarization of credit measured at a constant exchange rate recorded 29.3 percent. In addition to this, the ratio of dollarization of personal loans continues to decline, especially in the segments of mortgage loans and car loans.

**Table 35**
**RATIO OF DOLLARIZATION OF CREDIT TO THE PRIVATE SECTOR**
(%)

| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **38.3** | **39.0** | **39.7** | **39.7** | **40.1** |
| Corporate and large companies | 49.3 | 52.4 | 53.9 | 53.7 | 54.4 |
| Medium-sized enterprises | 42.9 | 41.4 | 40.5 | 40.8 | 40.4 |
| Small business and Microbusinesses | 7.0 | 6.3 | 6.7 | 6.6 | 6.5 |
| **Individuals** | **13.3** | **12.2** | **11.9** | **11.7** | **11.6** |
| Consumer | 6.9 | 6.8 | 6.8 | 6.7 | 6.6 |
| Car loans | 26.8 | 21.5 | 20.2 | 19.1 | 18.1 |
| Credit cards | 6.4 | 7.1 | 6.9 | 7.0 | 7.1 |
| Rest | 5.9 | 5.9 | 6.0 | 5.9 | 5.8 |
| Mortgage | 22.4 | 19.9 | 19.3 | 19.0 | 18.7 |
| **TOTAL** | **29.2** | **28.9** | **29.3** | **29.2** | **29.3** |
| *At current exchange rate* | *29.2* | *29.0* | *29.3* | *29.1* | *29.4* |

Furthermore, the ratio of dollarization has also continued to decline in the credit segments of loans to small and micro businesses and medium-sized businesses. To continue the process of reducing the dollarization of credit to companies, since March BCRP has introduced additional measures that will allow generating a more competitive environment in the supply of credit in foreign currency while continuing to promote the de-dollarization process at the same time: BCRP has established that banks can increase their lending in dollars without activating the additional reserve requirement provided that the latter does not exceed 40 percent of their flow of credit in soles accumulated in the year. In this way, banks are expected to continue reducing their ratios of dollarization of credit.

**Graph 59**
**RATIO OF DOLLARIZATION OF CREDIT AND LIQUIDITY**
(%)



## Non-Performing Loans

51. The ratio of non-performing loans in February was 3.5 percent, slightly higher than the average rate registered in December 2017 (3.3 percent). The credit segments that showed higher rates of non-performing loans were loans to medium-sized businesses and loans to micro and small businesses.

**Table 36**
**CREDITS DELINQUENCY INDEX**
(%)

| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **3.28** | **3.49** | **3.33** | **3.43** | **3.60** |
| Corporate and large companies | 0.41 | 0.49 | 0.47 | 0.45 | 0.75 |
| Medium-sized enterprises | 6.10 | 7.20 | 7.02 | 7.40 | 7.42 |
| Small business and Microbusinesses | 7.16 | 7.50 | 7.12 | 7.36 | 7.48 |
| **Individuals** | **3.05** | **3.34** | **3.29** | **3.36** | **3.37** |
| Consumer | 3.66 | 3.81 | 3.70 | 3.75 | 3.74 |
| Car loans | 5.60 | 5.97 | 6.13 | 6.15 | 6.26 |
| Credit cards | 4.86 | 5.30 | 5.37 | 5.13 | 5.05 |
| Mortgage | 2.28 | 2.77 | 2.78 | 2.87 | 2.91 |
| **TOTAL** | **3.09** | **3.44** | **3.31** | **3.41** | **3.52** |

Moreover, non-performing loans in soles remained at a slightly higher level than non-performing loans in dollars (3.88 versus 2.67 percent, respectively). In February the increase of the delinquency rates of loans in soles was higher than that observed in the delinquency rates of loans in dollars (0.16 percent versus 0.04 percent, respectively).

**Table 37**
**CREDITS DELINQUENCY INDEX : DOMESTIC CURRENCY**
(%)

| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **3.63** | **4.10** | **3.96** | **4.12** | **4.39** |
| Corporate and large companies | 0.20 | 0.46 | 0.47 | 0.44 | 0.99 |
| Medium-sized enterprises | 6.07 | 7.35 | 7.11 | 7.62 | 7.64 |
| Small business and Microbusinesses | 6.63 | 7.09 | 6.76 | 7.00 | 7.12 |
| **Individuals** | **2.90** | **3.21** | **3.14** | **3.21** | **3.22** |
| Consumer | 3.57 | 3.75 | 3.64 | 3.69 | 3.69 |
| Car loans | 2.58 | 3.27 | 3.47 | 3.59 | 3.76 |
| Credit cards | 5.03 | 5.48 | 5.57 | 5.31 | 5.25 |
| Mortgage | 1.87 | 2.42 | 2.41 | 2.51 | 2.54 |
| **TOTAL** | **3.18** | **3.71** | **3.61** | **3.72** | **3.88** |

**Table 38**
**CREDITS DELINQUENCY INDEX: FOREIGN CURRENCY**
(%)

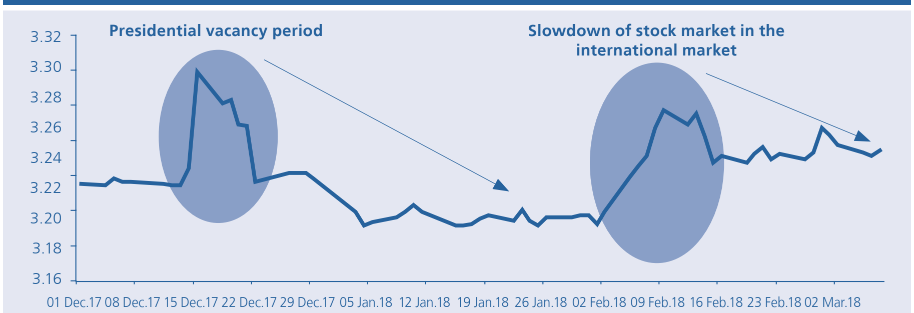
| | Dec.16 | Oct.17 | Dec.17 | Jan.18 | Feb.18 |
|---|---|---|---|---|---|
| **Business** | **2.72** | **2.51** | **2.33** | **2.34** | **2.38** |
| Corporate and large companies | 0.64 | 0.51 | 0.48 | 0.45 | 0.54 |
| Medium-sized enterprises | 6.15 | 6.99 | 6.90 | 7.07 | 7.11 |
| Small business and Microbusinesses | 19.58 | 20.12 | 17.24 | 17.84 | 18.69 |
| **Individuals** | **4.08** | **4.37** | **4.42** | **4.50** | **4.56** |
| Consumer | 5.29 | 4.86 | 4.75 | 4.78 | 4.81 |
| Car loans | 13.86 | 14.69 | 14.76 | 14.68 | 14.91 |
| Credit cards | 2.59 | 2.81 | 2.65 | 2.67 | 2.59 |
| Mortgage | 3.70 | 4.21 | 4.30 | 4.41 | 4.48 |
| **TOTAL** | **2.84** | **2.77** | **2.61** | **2.63** | **2.67** |

## Exchange Rate and Intervention in the Forex Market

52. In 2017, the PEN appreciated 3.5 percent against the US dollar in a context of international weakening of the dollar and a sustained increased of raw materials that favored a positive evolution of Peru's external accounts. In December, the sol was affected during a brief period of time by political uncertainty, but resumed thereafter the trend it showed during the year.

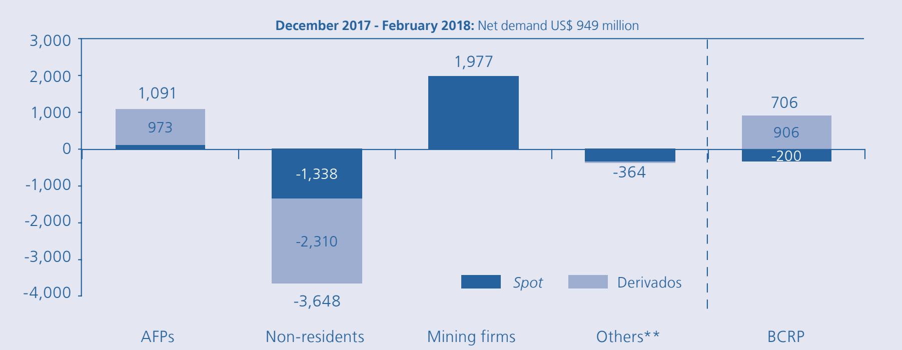
    However, in February 2018, the evolution of the PEN was affected by increased risk aversion in international markets. At the beginning of the month there was a period of greater volatility caused by the correction of the US stock exchanges, which reacted to expectations of higher interest rates in dollars, and extended to the rest of financial markets. However, over the past weeks this volatility has been decreasing, together with the volatility of the PEN. Between December 2017 and February 2018, the dollar/sol exchange rate went from S/ 3.23 to S/ 3.27 per dollar, which implied a depreciation of the PEN of 1.0 percent.

**Graph 60**
**EXCHANGE RATE**
(Soles por US$)




With regard to currency flows in the local foreign exchange market, between December and February 2018 the net demand for dollars amounted to US$ 949 million, with non-resident agents amounting mainly for this demand (US$ 3.65 billion) given the negative context mentioned previously, which led non-resident agents to liquidate their assets in soles and/or seek foreign exchange hedging for them. On the other hand, the supply of dollars came mostly from mining companies (US$ 1.98 billion), AFPs (US$ 1.09 billion), and from the intervention of BCRP in the forex market (US$ 706 million).

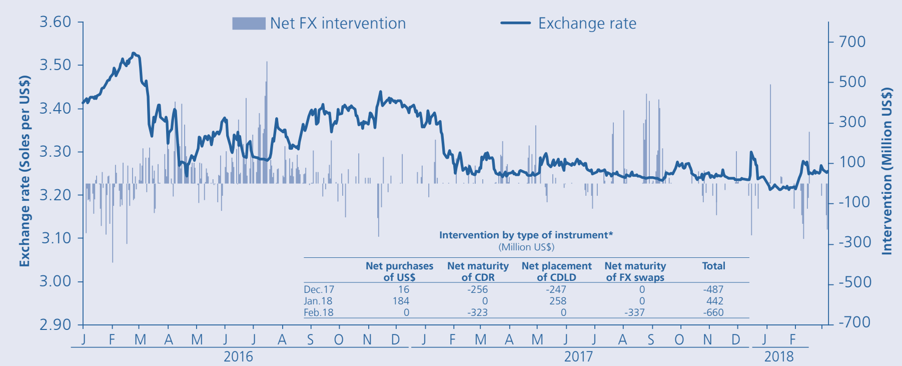
**Graph 61**
**QUARTERLY TOTAL FLOW TO THE FOREIGN EXCHANGE MARKET***
(Million US$)




* Negative flows means net demand of US$ in the period.
** Includes Banco de la Nación, financial institutions, mining sector, retail clients, and privates.

As for the Central Bank's actions in this period, it is worth pointing out that BCRP intervened in the exchange market to reduce the volatility of the exchange rate, mainly through the placement of instruments. Thus, the net placement of BCRP-CDR (Certificado de Depósitos Reajustables) was equivalent to US$ 579 million and currency swaps-sell amounted to US$ 337 million in the two periods of risk aversion of December 2017 and February 2018. In addition, BCRP bought US$ 200 million in the interbank market during the periods in which the PEN appreciated.

**Graph 62**
**NET PURCHASES OF US$ AND EXCHANGE RATE** 1/



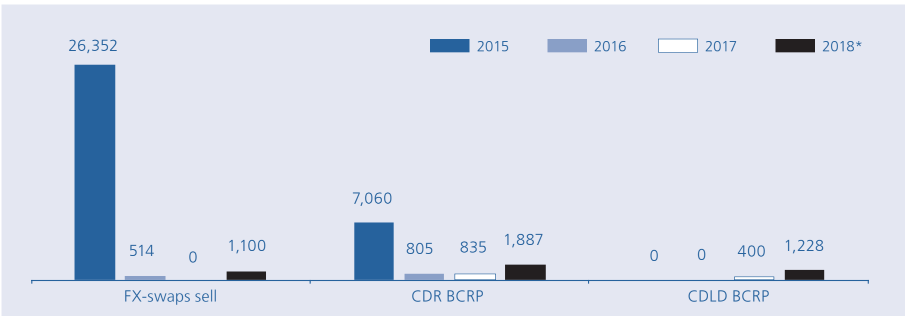

**Intervention by type of instrument***
(Million US$)

| | Net purchases of US$ | Net maturity of CDR | Net placement of CDLD | Net maturity of FX swaps | Total |
|---|---|---|---|---|---|
| Dec.17 | 16 | -256 | -247 | 0 | -487 |
| Jan.18 | 184 | 0 | 258 | 0 | 442 |
| Feb.18 | 0 | -323 | 0 | -337 | -660 |

1/ Includes Net purchases of US$, neta maturities of CDR BCRP, net maturity of FX swaps, net placement of CDLD, and net purchases by Substituion REPOS.

Moreover, BCRP has continued to decrease the balances of its intervention instruments (swaps, CDR, and CDLD), which are currently at minimum levels.

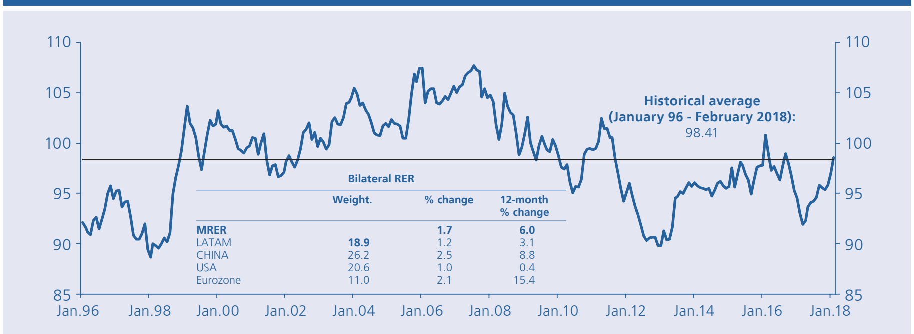
**Graph 63**
**BALANCE OF FX INSTRUMENTS OF BCRP**
(Million S/)




* As of February 28.

53. In February the multilateral real exchange rate index (RER) showed a level of 98.6, a level 6.0 percent higher than that recorded in the same period of 2017. This increase in the RER index in the last 12 months is associated mainly with the increase of the real exchange rate relative to the currencies of China (8.8 percent), the Eurozone (15.4 percent), and, to a lesser extent, Latin American countries (3.1 percent). It is worth highlighting that the current level of the RER is very close to the historical average level of the multilateral real exchange rate, estimated at 98.4.

**Graph 64**
**MULTILATERAL RER**
(Index 2009=100)

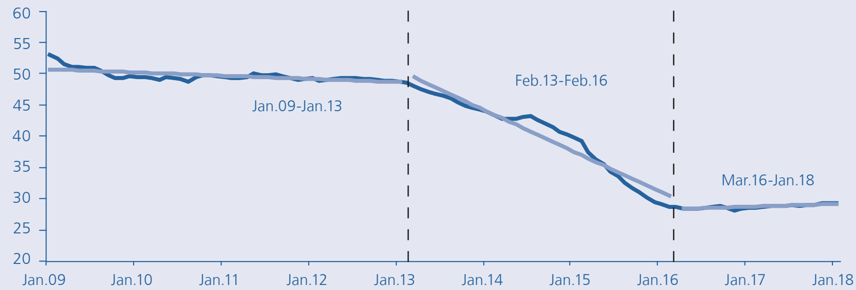


## Box 5
## DE-DOLLARIZATION OF CREDIT: EVIDENCE AT THE MACRO AND MICRO LEVELS

Within the framework of a set of measures aimed to strengthen the de-dollarization process in the country, in 2013 BCRP established additional reserve requirements linked to the evolution of credit in foreign currency. The effectiveness of these measures by type of credit and by economic sector, as well as the importance of these changes in the composition of credit is discussed herein. The data available at the end of 2017 shows that dollarization in the Peruvian economy has declined significantly in recent years, the dollarization ratio falling from 44 percent at end 2013 to 29 percent at December 2017.

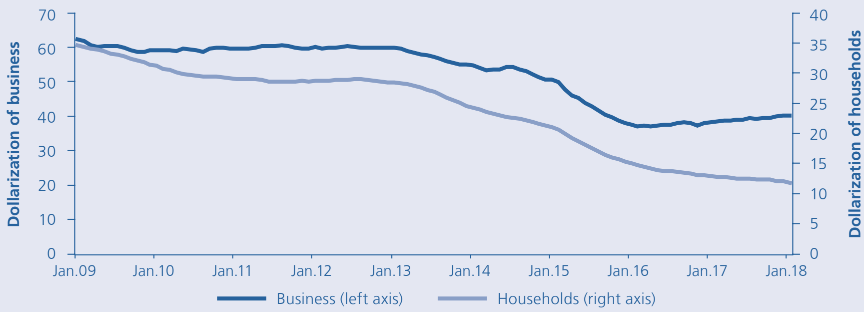
An accelerated reduction of dollarization and a change in its trend is clearly observed in the period following the implementation of these measures by BCRP, particularly from February 2013 to February 2016 (see graph below).

**RATIO OF DOLLARIZATION OF CREDIT OF THE DEPOSITORY CORPORATIONS**
(%)



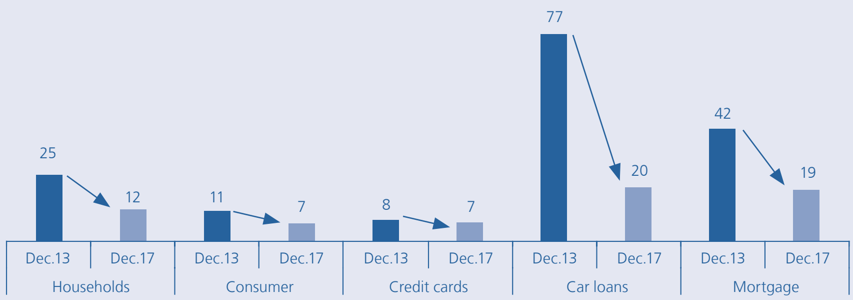

The change in the trend of credit de-dollarization is observed both in credit to businesses and in credit to households, but the latter shows a faster rate: the dollarization ratio of family loans has dropped by 13 percentage points.

**RATIO OF DOLLARIZATION OF CREDIT TO THE BUSINESS AND HOUSEHOLDS**
(%)



This fall in the rate of dollarization of credit to families is explained by a significant reduction in the dollarization ratios of mortgage loans and consumer loans, which declined by 23 and 4 percentage points, respectively. The significant drop of dollarization in these segments reduces the vulnerability of families with debts in dollars but whose income is in soles, which is particularly relevant in the case of mortgage loans since the main asset of most families is their homes. On the other hand, the drop in the dollarization of car loans (57 percentage points) stands out in the segment of consumer loans

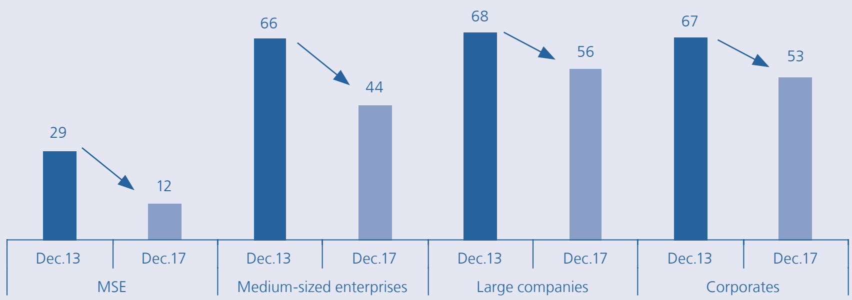
**RATIO OF DOLLARIZATION BY TYPE OF HOUSEHOLDS***
(%)




* Household dollarization consider the information of depository corporation.
Source: BCRP.

As for credit to non-financial private businesses, the segment that shows the highest rate of de-dollarization[18] is the segment of loans to medium-sized companies, with a reduction of 22 percentage points between 2013 and 2017. The other loan segments also show substantial declines in dollarization.

**RATIO OF DOLLARIZATION BY TYPE OF BUSINESS LOANS***
(%)




* The statistical information of the banks' credit portfolio is used to calculate the dollarization.
Source: BCRP.

18 The following classification of business segments has been considered for business loans: Corporations are companies with annual sales of over S/ 200 million; large companies are those with annual sales of S/ 20 million to S/ 200 million or those that have issued bonds in the capital market in the last year; medium-sized companies are those with a total debt of over S/ 300 thousand or annual sales of not more than S / 20 million; small businesses are companies with a total debt of S/ 20 thousand to S/ 300 thousand, and micro businesses are those with a debt that does not exceed S / 20 thousand. Because of the availability of sector information by currencies, only the credit provided by banks is considered in this section.

When we analyze the evolution of credit de-dollarization by sectors, we see that it has been generalized in most of the economic sectors, the reduction of credit dollarization standing out in the sectors of manufacturing, commerce, and services, which are also the sectors that have the highest rates of loans. However, the levels of dollarization are still high in some sectors, where the demand faced by these companies is mostly made up in soles, such as companies in the sectors of construction, manufacturing, and services.

By type of business, we see that dollarization is lower in the segments of MSEs and in medium-sized companies than in the segments of large and corporate companies. This pattern is also observed in most economic sectors (manufacturing, commerce, and construction).

**RATIO OF DOLLARIZATION OF CREDITS BY ECONOMIC SECTORS***
(%s)

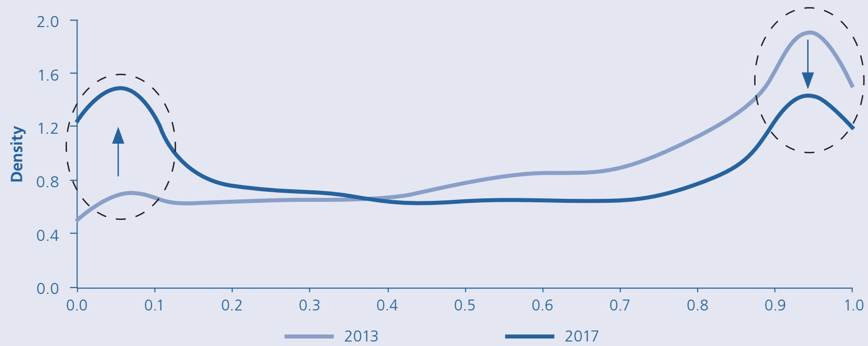
| | Share of total credit (%) | MSE | | | Medium-sized enterprises | | | Large companies | | | Corporates | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Dec.13 | Dec.17 | Dec.13/ Dec.17 | Dec.13 | Dec.17 | Dec.13/ Dec.17 | Dec.13 | Dec.17 | Dec.13/ Dec.17 | Dec.13 | Dec.17 | Dec.13/ Dec.17 |
| Services | 26 | 35 | 12 | -23 | 62 | 39 | -22 | 61 | 45 | -16 | 26 | 35 | 9 |
| Manufacturing | 25 | 27 | 10 | -16 | 71 | 45 | -26 | 69 | 55 | -14 | 67 | 44 | -22 |
| Trade | 25 | 23 | 9 | -15 | 61 | 41 | -20 | 66 | 52 | -14 | 44 | 48 | 4 |
| Electricity, Gas, and Water | 6 | 20 | 52 | 32 | 97 | 92 | -5 | 94 | 96 | 1 | 85 | 82 | -3 |
| Agriculture and livestock | 5 | 34 | 33 | 0 | 77 | 63 | -13 | 80 | 84 | 4 | 27 | 28 | 1 |
| Mining | 5 | 46 | 34 | -12 | 90 | 66 | -24 | 89 | 83 | -6 | 94 | 93 | -1 |
| Other activities ** | 4 | 75 | 58 | -16 | 78 | 48 | -30 | 43 | 96 | 53 | 81 | 48 | -33 |
| Construction | 3 | 25 | 12 | -14 | 58 | 38 | -20 | 57 | 48 | -9 | 75 | 46 | -29 |
| Fishing | 1 | 45 | 21 | -25 | 93 | 95 | 2 | 99 | 85 | -14 | 100 | 99 | -1 |
| **TOTAL BUSINESSES** | **100** | **29** | **12** | **-17** | **66** | **44** | **-22** | **68** | **56** | **-12** | **67** | **53** | **-13** |

* Only includes banks that actually works.
** Includes unclasiffied loans in this item.

A granular review of the data using the database of banks' records of loans shows that the density function[19] of the dollarization ratio has shifted towards lower dollarization levels. Thus, the proportion of companies with high dollarization rates has decreased while the one with low dollarization rates has increased. In the sample selected, we find that the percentage of companies with dollarization ratios of over 70 percent has declined from 48 to 37 percent and that the percentage of companies with dollarization ratios of less than 40 percent has risen from 28 to 44 percent. This evolution of de-dollarization at the microeconomic level reflects an important structural change in businesses' demand for credit.

19 The density function is calculated using the nonparametric Kernel estimation, which, through a smoothed method, allows making population inferences based on sample data. Companies that had a percentage of debt in dollars in 2013 and have debt in 2017 were considered. Moreover, the debt of each company in dollars valued in soles as a percentage of its total debt was used to calculate the ratio of each company,

**KERNELL DISTRIBUTION OF RATIO OF DOLLARIZATION OF BUSINESSES**



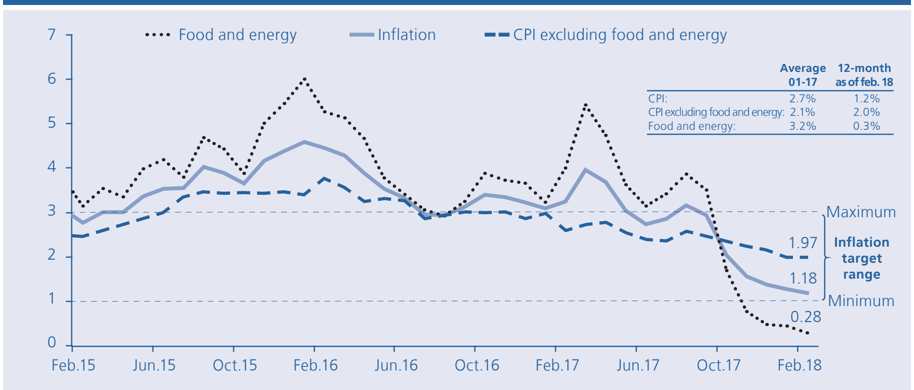

In conclusion, the de-dollarization process has been showing a faster pace in the Peruvian economy since 2013, in line with the measures implemented by BCRP. The drastic fall of dollarization has been generalized, both at the level of businesses and at the level of families, the reduction observed being particularly noteworthy in the segment of mortgages and in the segment of credit to medium-sized companies. Moreover, data at the sector level reveal that although the de-dollarization process has been generalized, the Central Bank must continue implementing actions to reduce the vulnerabilities caused by currency mismatches in some sectors that do not usually have currency hedges.

# VI. Inflation Forecast and Balance of Risks

**Inflation at February 2018**

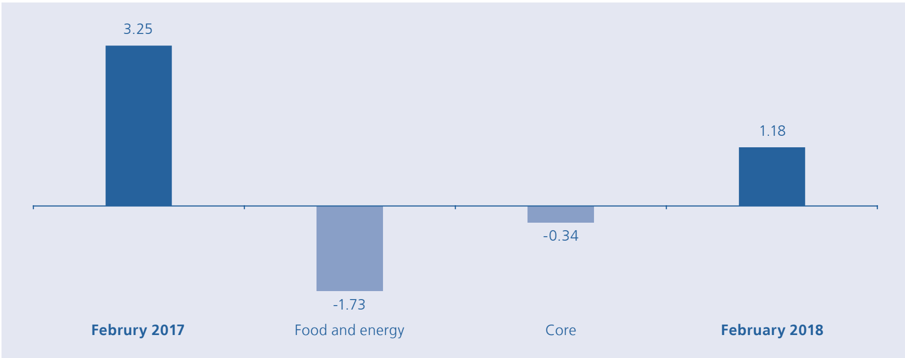
54. The YoY rate of inflation fell from 1.54 percent in November 2017 to 1.18 percent in February 2018, while the rate of inflation without food and energy fell from 2.23 percent to 1.97 percent. The highest decline was observed in the average prices of food and energy, which dropped from 0.76 percent to 0.28 percent.

**Graph 65**
**INFLATION**
(Last 12-month % change)



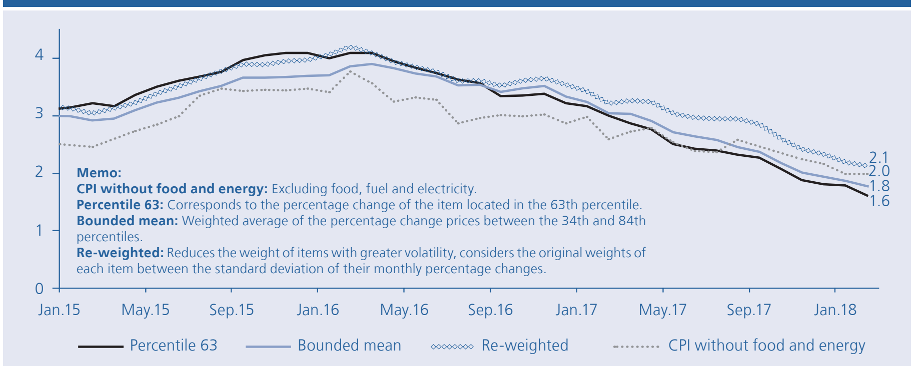

The slower pace of growth registered in the YoY rate of inflation in February 2018 in comparison with that recorded in 2017 (3.25 percent) is mainly explained by the lower variation in the prices of food and energy. This was associated with the reversal of the supply shocks that affected the prices of agricultural products in late 2016 and early 2017 as well as with the favorable climate conditions observed throughout 2017 after El Niño Costero event.

**Graph 66**
**CHANGE ON INFLATION LAST 12-MONTHS: 2017 VS 2018**
(% change and % points)




55. The lower rates of variation in the prices of food and energy have been accompanied by a generalized deceleration of the indicators of trend inflation (including inflation without food and energy), which show levels within the target range. Together with a negative output gap, this would be signaling the absence of inflationary demand pressures.

**Graph 67**
**INDICATOR OF TREND INFLATION**
(Last 12 months % change)




56. Between January and February 2018, the general level of consumer prices increased 0.38 percent, that is, at an average monthly rate of 0.19 percent, which is lower than its average long-term monthly rate of growth (0.26 percent).

**Table 39**
**INFLATION**
(% change)

| | Weight(%) | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 Jan.-Feb. | 2018 12-month |
|---|---|---|---|---|---|---|---|---|
| CPI | 100.0 | 2.86 | 3.22 | 4.40 | 3.23 | 1.36 | 0.38 | 1.18 |
| **1. CPI excluding food and energy** | **56.4** | **2.97** | **2.51** | **3.49** | **2.87** | **2.15** | **0.01** | **1.97** |
| a. Goods | 21.7 | 2.62 | 2.43 | 3.57 | 3.41 | 1.24 | 0.17 | 1.23 |
| b. Services | 34.8 | 3.18 | 2.55 | 3.44 | 2.54 | 2.70 | -0.10 | 2.42 |
| **2. Food and energy** | **43.6** | **2.73** | **4.08** | **5.47** | **3.66** | **0.46** | **0.81** | **0.28** |
| a. Food and beverages | 37.8 | 2.24 | 4.83 | 5.37 | 3.54 | 0.31 | 0.44 | -0.54 |
| b. Fuel and electricity | 5.7 | 6.09 | -0.85 | 6.20 | 4.48 | 1.55 | 3.37 | 6.02 |
| Fuel | 2.8 | 5.95 | -5.59 | -6.33 | 0.61 | 3.95 | 2.12 | 4.37 |
| Electricity | 2.9 | 6.23 | 4.37 | 18.71 | 7.53 | -0.21 | 4.33 | 7.30 |

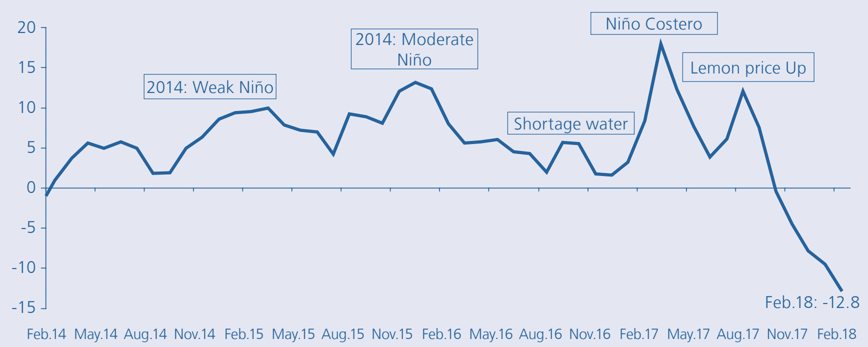
The lower inflation rate accumulated in the first two months of the year resulted mainly from the evolution of the prices of perishable agricultural food products, which showed an average monthly increase of 0.40 percent, their long-term average monthly variation rate being 2.16 percent.

**Table 40**
**CPI AND PERISHABLE FOODS**
(Monthly average %)

| | January-February |
|---|---|
| **2002-2017** | |
| CPI | 0.26 |
| Perishable foods | 2.16 |
| **2017** | |
| CPI | 0.28 |
| Perishable foods | 3.21 |
| **2018** | |
| CPI | 0.19 |
| Perishable foods | 0.40 |

57. Among these food products, the lowest price variation was observed in the prices of tomatoes and other vegetables. This is explained by the lower temperatures registered this summer since the supply of these products tends to decrease due to the high degree of perishability of these produce when temperatures are high. On the other hand, the prices of food products that come from the central highlands and the jungle region (i.e. potatoes, legumes, and papaya) showed variation rates above their average levels due to some road interruptions caused by farmers' protests and due to rains that affected the producing areas, all of which hindered harvesting and marketing.

**Graph 68**
**AGRICULTURAL PERISHABLE FOOD**
(Last 12 month % change)




Source: INEI.

At a disaggregated level, the items that registered the highest positive contribution to inflation in the months of January and February include electricity rates, papaya, chicken meat, meals outside the home, and potatoes. Conversely, the items with the greatest negative contribution to inflation were urban fares, national transportation, avocadoes, lemons, onions, among other food products.

**Table 41**
**ITEM WITH THE HIGHEST WEIGHTED CONTRIBUTION TO INFLATION: JANUARY - FEBRUARY 2018**

| Positive | Weight | % Chg. | Contribution | Negative | Weight | % Chg. | Contribution |
|---|---|---|---|---|---|---|---|
| Electricity rates | 2.9 | 4.3 | 0.15 | Urban fare | 8.5 | -1.1 | -0.09 |
| Poultry meat | 3.0 | 2.6 | 0.07 | National transportation | 0.3 | -10.1 | -0.04 |
| Meals outside the home | 11.7 | 0.4 | 0.06 | Avocado | 0.1 | -18.5 | -0.04 |
| Papaya | 0.2 | 26.7 | 0.05 | Lemon | 0.2 | -15.6 | -0.03 |
| Potato | 0.9 | 5.4 | 0.04 | Onion | 0.4 | -7.9 | -0.02 |
| Fresh legumes | 0.2 | 18.2 | 0.04 | Tomato | 0.2 | -10.1 | -0.02 |
| Judicial expensives | 0.4 | 14.1 | 0.04 | Eggs | 0.6 | -3.5 | -0.02 |
| Gasoline and lubricant | 1.3 | 3.2 | 0.04 | Grapes | 0.1 | -11.5 | -0.01 |
| Education costs (tuition and fees) | 8.8 | 0.3 | 0.03 | Other fresh fruits | 0.4 | -3.7 | -0.01 |
| Tangerine | 0.2 | 15.3 | 0.03 | Banana | 0.3 | -3.1 | -0.01 |
| **Total** | | | **0.55** | **Total** | | | **-0.29** |

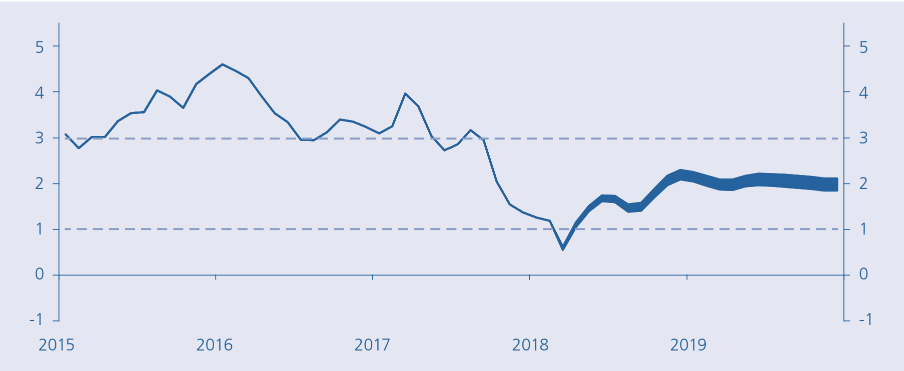
58. The YoY variation of food and energy prices is expected to remain temporarily below 2 percent during the first half of 2018 due to the reversal of the supply shocks caused by El Niño Costero, after which this rate would return towards 2 percent during the second half of the year as the effects of these shocks dissipate.

**2018-2019 Forecast**

59. BCRP monetary policy actions are taken anticipating the most likely scenarios on the basis of inflation forecasts and projections of inflation determinants elaborated on the basis of the macroeconomic information available at the time of decision making. Indicators standing out as key indicators for monetary policy actions include inflation expectations, imported inflation (including the effect of the foreign exchange rate), and demand inflationary pressures, all of which are quantified through the concept of the output gap (the difference between the GDP observed and its potential level).

    Year-on-year inflation is expected to be transitorily below 2.0 percent during the first half of 2018 due to the reversal of the supply shocks associated with the adverse climatic factors observed in early 2017 (El Niño Costero) and due to a negative output gap.

**Graph 69**
**INFLATION FORECAST: 2015 - 2019**
(Last 12-month % change)




The rapid normalization of the supply shocks observed has been correcting the path followed by inflation expectations and leading them towards the midpoint of the target range. This trend in inflation expectations, together with the absence of inflationary demand pressures as well as with moderate levels of imported inflation, imply that inflation without food and energy will remain very close to 2.0 percent in the forecast horizon.

The **determinants of the inflation forecast** are discussed below:

a) **Expectations of inflation in 12 months** are foreseen to continue declining during the forecast horizon and would converge to 2 percent during 2018.

**Table 42**
**SURVEY ON MACROECONOMIC EXPECTATIONS: INFLATION**
(% change)

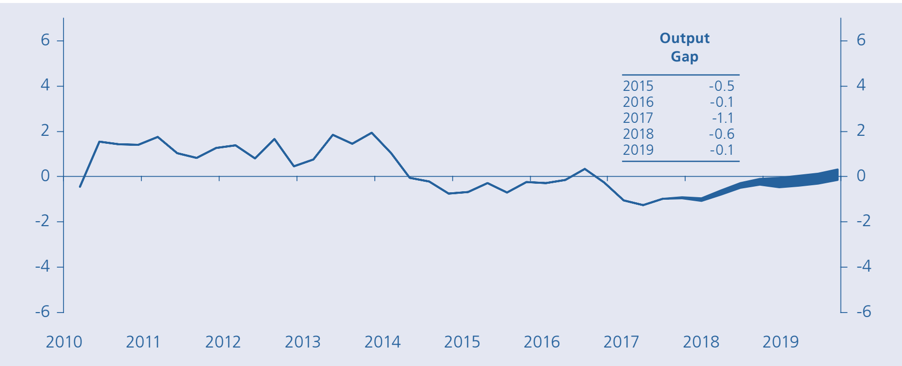
| | IR Mar.17 | IR Jun. 17 | IR Sep. 17 | IR Dec. 17 | IR Mar.18* |
|---|---|---|---|---|---|
| **Financial entities** | | | | | |
| 2018 | 2.7 | 2.8 | 2.6 | 2.5 | 2.0 |
| 2019 | 2.8 | 2.8 | 2.8 | 2.7 | 2.5 |
| **Economic analysts** | | | | | |
| 2018 | 2.9 | 2.8 | 2.8 | 2.5 | 2.3 |
| 2019 | 2.5 | 2.8 | 2.7 | 2.6 | 2.5 |
| **Non-financial firms** | | | | | |
| 2018 | 3.0 | 3.0 | 3.0 | 3.0 | 2.5 |
| 2019 | 3.0 | 3.0 | 3.0 | 3.0 | 2.5 |

*Survey conducted during February 28.
IR: Inflation Report.

**Graph 70**
**EXPECTATIONS OF INFLATION FOR THE NEXT YEAR**
(% points)

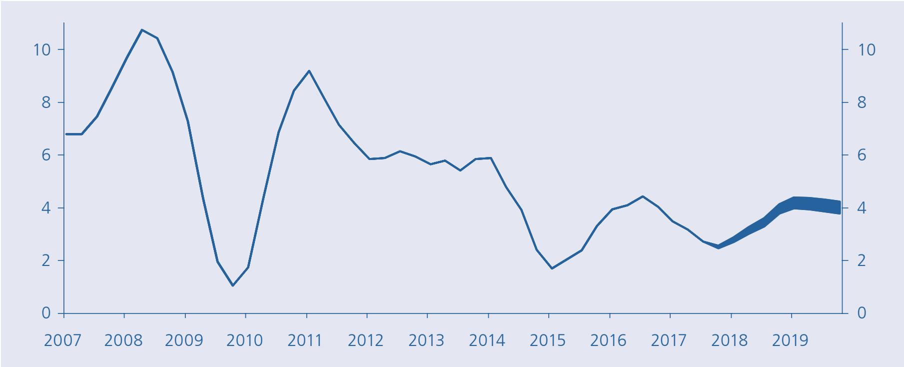

b) Increased fiscal expenditure in infrastructure projects (public investment in reconstruction works), favorable external conditions, and greater monetary stimulus would contribute to bring the output gap closer to its neutral position by the end of 2019.

**Graph 71**
**OUTPUT GAP: 2010 - 2019**
(% potential GDP)



The growth forecast for the 2018-2019 forecast horizon is consistent with this gradual recovery of the output gap.

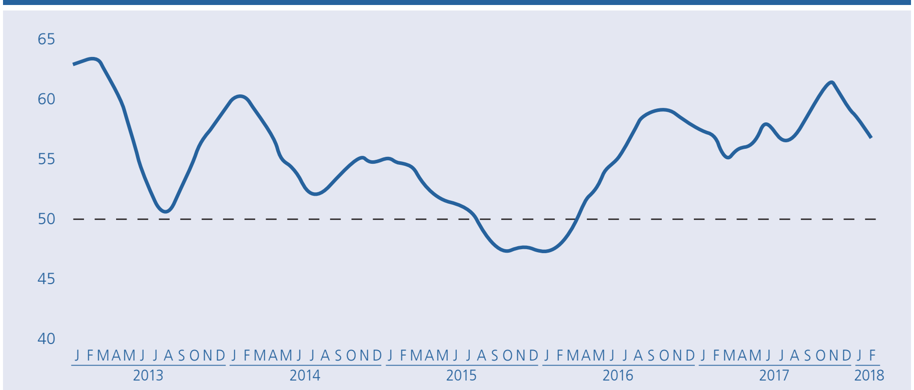
**Graph 72**
**GDP GROWTH FORECAST: 2007 - 2019**
(Annual % change)




The main determinants of the forecast of the **output gap** include the following:

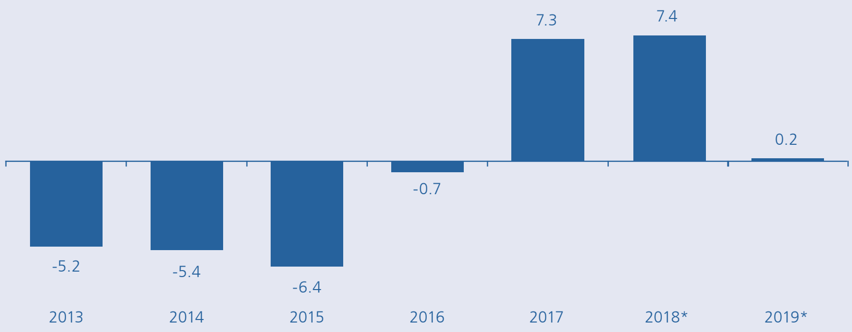
- **Business confidence:** Even though business confidence will remain within the optimistic side in the forecast horizon, it is expected to recover and gradually show higher levels.

**Graph 73**
**EXPECTATION ABOUT THE SECTOR 3-MONTHS AHEAD, JAN.2013 - FEB.2018**
(Moving average 3 months)




- **External conditions**: Favorable external conditions are foreseen in the forecast horizon, driven by the increase in the terms of trade as well as by a faster pace of growth in our trading partners than that observed during 2017.

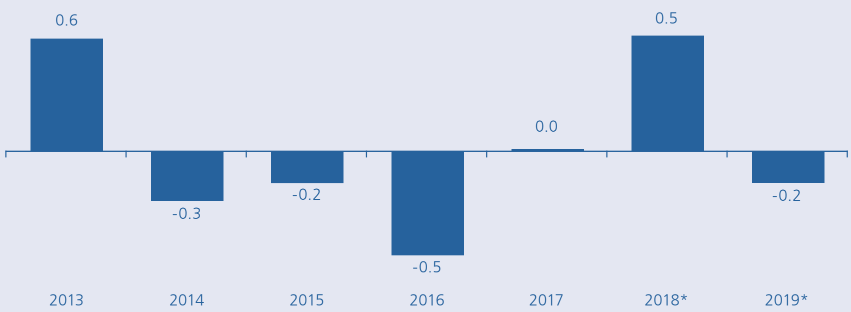
Graph 74
TERMS OF TRADE: 2013-2019
(Annual % change)




* Forecast.

- **Fiscal impulse**: The weighed fiscal impulse estimated for 2018 would be significant and would be associated with the reconstruction of the infrastructure affected by El Niño Costero and by the construction of infrastructure for the Pan American Games. In 2019, the fiscal impulse would become negative due to the consolidation of public finances.

Graph 75
WEIGHTED FISCAL IMPULSE: 2013-2019
(% potential GDP)




* Forecast.

- **Monetary conditions**: Taking into account the four cuts in the benchmark interest rate in 2017 (in May, July, September, and November) and the rate cuts adopted in January and March 2018, monetary conditions in soles are still expansionary (the real rate is lower than 1 percent). Moreover, although higher Fed interest rates and increased expectations of depreciation are anticipated, the BCRP reductions of reserve requirements in dollars will offset in part the effects of these higher rates on local credit conditions.

**Graph 76**
**REFERENCE INTEREST RATE, JAN.2013 - MAR.2018**

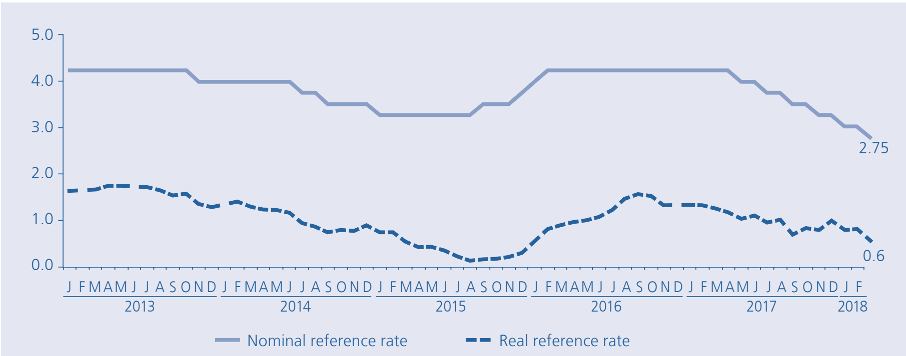



**Table 43**
**SURVEY ON MACROECONOMIC EXPECTATIONS: REFERENCE RATE**
(% points)

| | IR Mar.17 | IR Jun. 17 | IR Set. 17 | IR Dec. 17 | IR Mar.18* |
|---|---|---|---|---|---|
| **Financial entities** | | | | | |
| 2018 | 4.25 | 4.00 | 3.50 | 3.50 | 3.25 |
| 2019 | | 4.00 | 4.00 | 3.75 | 3.25 |
| **Economic analysts** | | | | | |
| 2018 | 4.25 | 4.00 | 3.50 | 3.50 | 3.00 |
| 2019 | | 4.25 | 3.75 | 3.75 | 3.25 |

*Survey conducted during February 28.
IR: Inflation Report.

c) **Imported inflation** reflects the evolution of import prices and the evolution of the exchange rate. In 2018, the level of imported inflation is expected to be higher to the level projected in the Inflation Report of December due mainly to market expectations of higher import prices in response to the anticipated weakening of the dollar against the currencies of other developed countries.

**Table 44**
**SURVEY ON MACROECONOMIC EXPECTATIONS: EXCHANGE RATE**
(S/ per US$)

| | IR Mar.17 | IR Jun. 17 | IR Sep. 17 | IR Dec. 17 | IR Mar.18* |
|---|---|---|---|---|---|
| **Financial entities** | | | | | |
| 2018 | 3.45 | 3.40 | 3.30 | 3.29 | 3.25 |
| 2019 | 3.42 | 3.48 | 3.44 | 3.28 | 3.25 |
| **Economic analysts** | | | | | |
| 2018 | 3.40 | 3.40 | 3.35 | 3.30 | 3.28 |
| 2019 | 3.44 | 3.44 | 3.40 | 3.35 | 3.35 |
| **Non-financial firms** | | | | | |
| 2018 | 3.50 | 3.40 | 3.40 | 3.34 | 3.30 |
| 2019 | 3.50 | 3.50 | 3.43 | 3.40 | 3.35 |

*Survey conducted during February 28.
IR: Inflation Report.

d) As previously mentioned, the annual change in the prices of food and energy is expected to remain below 2.0 percent in the first months of 2018 due to the reversal of the supply shocks caused by El Niño Costero. The annual change in these prices are foreseen to converge towards 2 percent as the effects of these shocks disappear.

## Balance of Risks in the 2018- 2019 Horizon

60. Every forecast is subject to the occurrence of unanticipated events that may deviate the forecast from the central scenario. The materialization of some risks may imply a different rate of inflation than the one forecast originally. The main factors that could more likely deviate the inflation forecast from the baseline scenario include the following:

a. **Negative shocks on domestic demand**
Economic recovery could be more gradual if public and private investment grew at lower rates than expected, which would imply a more negative output gap for a longer period of time. As a result of this, inflation would tend to show rates below the baseline scenario.

b. **Supply shocks**
The risk that an increase in the prices of fuels and some imported food products could divert inflation from the midpoint of the inflation target range is considered in the baseline scenario.

c. **Volatility in international financial markets**
Abrupt adjustments in the Fed interest rates and increased capital flows to the United States would push the exchange rate upwards and could increase inflation in the short-term deviating it from the trend consistent with the central forecast scenario. Additional U.S. protectionist measures and commercial reprisals from the affected countries could also generate uncertainty and volatility in international financial markets.

The balance of risks of the inflation forecast shows a slight bias on the downside, so the impact of factors on the downside is higher than the impact of factors on the upside.

**Graph 77**
**BALANCE OF RISKS AGAINST THE BASE SCENARIO**


## Conclusions

61. Inflation is expected to show rates below its long-term level during the first half of 2018 due to the correction of the supply shocks that increased prices between the last months of 2016 and in the first half of 2017 and to converge gradually thereafter towards 2.0 percent due to the gradual recovery of aggregate demand. Moreover, inflation without food and energy and inflation expectations are foreseen to be around 2 percent in the forecast horizon, in a context of growth without demand inflationary pressures.

**Box 6**
**CUMULATIVE INFLATION AND CHANGE IN RELATIVE PRICES**

**Introduction**

Since 2002, when the Central Bank of Peru adopted inflation targeting, the consumer price index (CPI) of Metropolitan Lima has accumulated a variation of 56.3 percent until December 2017.

Because the CPI reflects the average level of the price indices of the 174 items that make it up, total cumulative inflation does not show changes in the relative prices of different goods and services, the latter being recorded when the price of some item accumulates a different variation to that of total inflation. Since economic theory states that it is changes in relative prices that modify investment and consumption decisions, it is important to know how they have evolved over time.

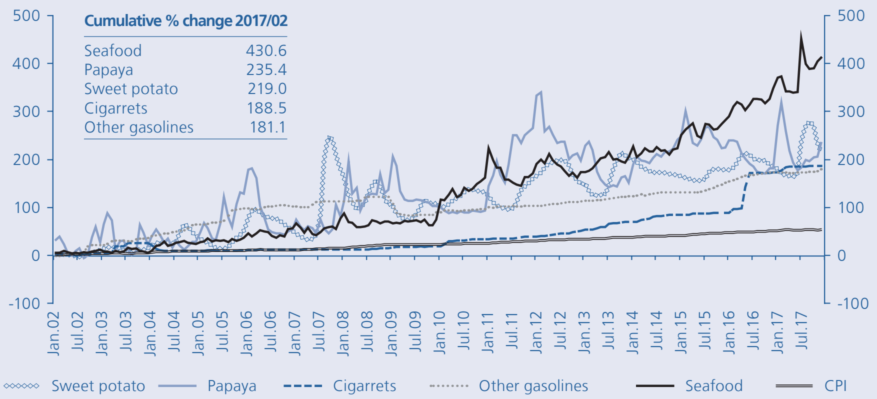
**Items with greater cumulative positive and negative variations**

The CPI is the weighted average of the price indices of the items that make it up. These items and their respective weights were defined in the Encuesta Nacional de Presupuestos Familiares – ENAPREF (National Survey of Family Budgets) conducted by INEI between May 2008 and April 2009. The cumulative variations of these items show a great dispersion: for example, the highest cumulative variation is 431 percent, while the lowest is -43 percent. Likewise, the food and energy index has a cumulative variation of 73 percent while the index without food and energy has a cumulative variation of 41 percent.

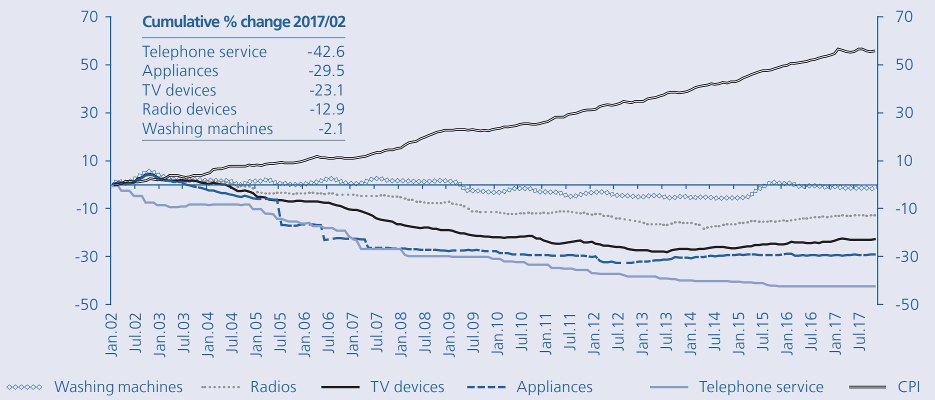
Some of the items with the highest cumulative variation include some food products, such as seafood, papayas, sweet potatoes, other fuels (e.g. firewood and coal), and cigarettes. The price indices of these items have increased more than the general level of prices, so their relative prices have increased since 2002. On the other hand, the goods related to technological advance are among those showing the lowest cumulative variations.

The price of seafood shows a sustained increase over the years due to the lower supply of some species. The cumulative variation of the price of cigarettes reflects, to a large extent, the price increase of May 2016 resulting from the rise of the excise tax on blond and black tobacco, approved by Supreme Decree 112-2016-EF. Because of this tax increase, the price of cigarettes rose 38.1 percent between April and June 2016. Moreover, according to the Ministry of Agriculture's System of Supply and Prices (SISAP), the increase in the prices of papayas and sweet potatoes would be associated with the fact that the supply of these products has not increased over the years. In the case of papayas, the supply slowdown is due to the fact that farmers in the jungle region prefer to grow more profitable crops such as cocoa, coffee, and palm, while in the case of sweet potatoes, the main reason for this slowdown is the preference of farmers in the north of the country for crops such as grapes and mangoes (in the second half of the year, this region of the country is usually the second main supplier of mangoes).

**ITEM WITH THE HIGHEST CUMULATIVE VARIATION**
Accumulated % change 2017/2002




**ITEM WITH THE LOWEST CUMULATIVE VARIATION**
Accumulated % change 2017/2002




On the other hand, the items with lower cumulative variations include telephone rates, goods directly linked to technological innovation (TV sets, radios, and recreational devices such as computers and cell phones) as well as goods indirectly linked to technological innovation (refrigerators, washing machines, and light bulbs). This phenomenon is observed in Peru and in several other countries, as documented by Reinsdorf and Schreyer (2017).[20]

The decrease in the rates of telephone services is due to the regulation of rates for residential telephone services and to greater competition in the sector of mobile telephony. On the other

20 Reinsdorf, M. and P. Schreyer (2017). Measuring Consumer Inflation in a Digital Economy. IMF, OECD.

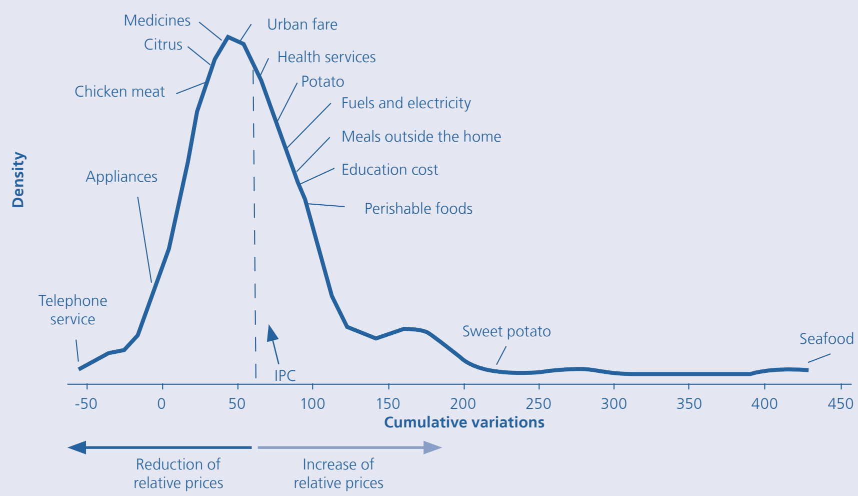
hand, the prices of goods directly linked to technology show a significant price reduction, whereas the prices of goods indirectly linked to innovation show a small cumulative increase that is lower than total cumulative inflation.

Another way of presenting the accumulated price variations of all the CPI items and of also showing the increases or decreases in relative prices is plotting the distribution[21] of the accumulated price variations of all the CPI items. Since we know that the cumulative total inflation in the period is 56.3 percent, a higher accumulated price variation implies an increase in relative prices, while the opposite case implies a fall in relative prices.

The increase in the relative prices of perishable food products (potatoes, among them), education costs, and food away from home is particularly noteworthy, while telephone rates and the prices of household appliances and chicken meat stand out in the section of the declining relative prices of the distribution, on the other hand. Moreover, other services, such as health services, have had cumulative variations that are very close to total accumulated inflation. It is worth mentioning that the prices of health care services increase above the rate of total inflation since 2013, but a slower pace is observed from July 2017 associated with the slowdown registered in the costs of medical consultations and hospitalization, which are the items with the greatest positive contribution within the health care services.

The increase in the price of education is associated with the fact that the demand for education has grown at a higher rate than the supply, both at the school and university levels. Furthermore, an increase is also observed in costs associated with education services (i.e., teacher salaries) as well as in costs due to the increased regulation of the sector.

**DENSITY OF CUMULATIVE VARIATIONS BY ITEMS**
2017/2002




21 The smoothing was carried out by estimating the Kernel distribution of the cumulative variations of the 174 products.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PRESIDENTE DEL DIRECTORIO
GERENTE