



INFLATION REPORT

September 2016*

* Presented by the technical staff to the Board of Directors for its meeting on October 28, 2016.

Banco de la República
Bogotá, D. C., Colombia

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THE INFLATION TARGETING STRATEGY IN COLOMBIA

OBJECTIVES

Monetary policy in Colombia is based on inflation targeting, which is intended primarily to keep inflation low and to ensure stable growth in output near its long-term trend. Accordingly, the objectives of monetary policy combine the goal of price stability with that of maximum sustainable growth in output and employment. In this way, monetary policy complies with the constitution and contributes to the well-being of the Colombian population.

HORIZON AND IMPLEMENTATION

The Board of Directors of *Banco de la República* (the Central Bank of Colombia) (BDBR) sets the annual target for inflation. The BDBR's policy initiatives are designed to meet that target and to provide for long-term inflation at around 3.0%. The annual change in the consumer price index (CPI) is the benchmark that is used for inflation targeting.

THE DECISION-MAKING PROCESS

Monetary-policy decisions are adopted based on an analysis of the current state of the economy and its prospects for the future, and on an assessment of the forecast for inflation in light of the predefined targets. If that assessment suggests, with enough certainty, that inflation will deviate from its target under current monetary-policy conditions and within the time horizon in which the policy ope-

rates, and that such deviation is not due to temporary shocks, the BDBR modifies its policy stance by changing its benchmark interest rates (those charged by *Banco de la República* on short-term liquidity operations).

COMMUNICATION AND TRANSPARENCY

Monetary policy decisions are announced after the Board of Directors meetings. This is done in a press bulletin posted immediately on *Banco de la República's* website (www.banrep.gov.co).

The *Inflation Report* is a quarterly publication that is intended to lend transparency to the Board's decisions. It also contributes to a better understanding of monetary policy and helps to enhance its credibility. Specifically, the report: i) lets the public know how the Board of Directors and the Technical Governor of the Bank view recent and anticipated developments in inflation and its short- and mid-term determinants; ii) explains the implications of those determinants for monetary-policy management within the scope of inflation targeting; iii) describes the situation and analysis justifying the monetary-policy decisions made during the quarter; and iv) provides information that helps agents in the economy to form their own expectations about future developments with respect to inflation and output growth.

CONTENTS

Inflation Developments and Monetary Policy Decisions	9
I. The External Situation and the Balance of Payments	15
A. The International Situation	15
B. The Balance of Payments	23
Box 1 Nature of the Trade Deficit Correction	32
II. Domestic Growth: The Current Situation and Short-term Prospects	34
A. Second-quarter GDP in 2016	34
B. Third-quarter GDP in 2016	38
Box 2: Diagnosis of Production and Foreign Trade in the Industrial Manufacturing Sector	46
III. Recent Developments in Inflation	51
A. Core Inflation	53
B. Food Inflation	56
IV. Medium-term Forecasts	58
A. Economic Growth during the Remainder of 2016 and in 2017	58
B. Inflation	63
C. Risk Balance	66
V. Risks to Macroeconomic Stability	71
A. The Current Account and the Real Exchange Rate	72
B. Borrowing	74
C. Home Prices	75
D. The Macroeconomic Imbalance Index	76
Attachment: Macroeconomic Forecasts by Domestic and Foreign Analysts	78

GRAPHS

Graph 1	Real GDP in the United States	16
Graph 2	Unemployment and Job Creation Rates in the United States	16
Graph 3	Annual Headline and Core Inflation Indicators in the United States	16
Graph 4	Real GDP in the Euro Zone	17
Graph 5	Annual Headline and Core Inflation Indicators in Europe	17
Graph 6	Real Annual GDP Growth in China	18
Graph 7	Annual Growth in the Monthly Economic Activity Indexes of Several Latin American Economies	18
Graph 8	Annual Inflation in Several Latin American Economies	18
Graph 9	Terms of Trade Index	19
Graph 10	International Oil Prices (Brent and WTI)	19
Graph 11	International Food Prices	19
Graph 12	Interest Rates on Certain 10-year Sovereign Bonds	20
Graph 13	Five-year Credit Default Swaps (CDS) for Several Latin American Countries	20
Graph 14	Exchange Rate Indexes for Several Latin American Countries	20
Graph 15	Average Growth of Colombia's Trading Partners	21
Graph 16	Total Exports	26
Graph 17	Total Imports (FOB)	26
Graph 18	Gross Domestic Product	34
Graph 19	GDP in the Tradable, Non-mining Tradable and Non-tradable Sectors	38
Graph 20	Monthly Retail Trade Survey (Total Non-fuel Retail Sales, Seasonally Adjusted)	39
Graph 21	Monthly Retail Trade Survey (Total Non-fuel and Non-Automobile Retail Sales, Seasonally Adjusted)	39
Graph 22	New Vehicle Registrations	40
Graph 23	Consumer Confidence Index and Quarterly Average	40
Graph 24	Imports of Capital Goods for Industry and Transport Equipment (Real) and GFCF Excluding Building Construction and Civil Works	43
Graph 25	Total Real Industrial Production	44
Graph 26	Balance of the Industrial Confidence Index	44
Graph 27	Coffee Production	44
Graph 28	Oil Production	45
Graph 29	Total Consumer Inflation	51
Graph 30	IPP por procedencia	52
Graph 31	Nominal Wages	53
Graph 32	Core Inflation Indicators	54
Graph 33	Tradable and Non-tradable CPI, Excluding Food and Regulated Items	55
Graph 34	Annual Non-tradable Inflation	55
Graph 35	CPI for Regulated Items and Components Thereof	55
Graph 36	Food CPI	57
Graph 37	Food CPI, by Groups	57
Graph 38	Annual GDP Growth Fan Chart	62
Graph 39	Annual Quarterly GDP Growth Fan Chart	62
Graph 40	Output Gap Fan Chart	63
Graph 41	Annual Inflation Forecasts by Banks and Brokerage Firms	64
Graph 42	Observed Inflation and Inflation Expectations	64

Graph 43	Break-even Inflation Expectations	64
Graph 44	Headline Inflation Fan Chart	67
Graph 45	Non-food Inflation Fan Chart	67
Graph 46	Cross-section of the Headline Inflation Fan Chart for December 2017	67
Graph 47	Current Account Deficit	73
Graph 48	Real Exchange Rate Indexes	73
Graph 49	Private Sector Indebtedness	74
Graph 50	Home Prices in Colombia	75
Graph 51	New Home Sales, by Price Range	76
Graph 52	New Housing Units Available for Sale, by Price Range	76
Graph 53	Macroeconomic Imbalance Index	77
Graph 54	Gaps in the Current Account, Real Exchange Rate, Home Prices, and Credit	77

TABLES

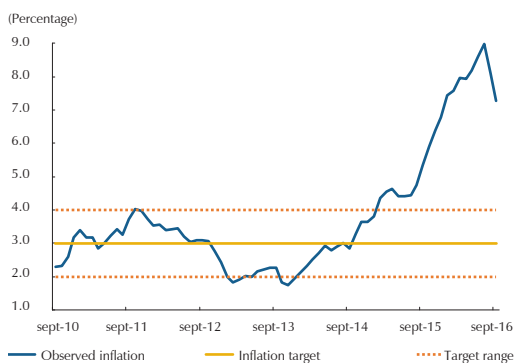
Table 1	Growth Forecasts for Colombia's Trading Partners	21
Table 2	Benchmark Price Forecasts for Colombia's Commodity Exports	23
Table 3	Balance of Payments	30
Table 4	Real Annual GDP Growth, by Type of Expenditure	36
Table 5	Real Annual GDP Growth, by Branch of Economic Activity	37
Table 6	Consumer Price Indicators	54
Table 7	Probability Ranges in the Annual GDP Growth Fan Chart	62
Table 8	Estimated Probability of Inflation Between 2.0% and 4.0% by December 2017	69
Table 9	Probability Ranges in the Headline Inflation Fan Chart	70

INFLATION DEVELOPMENTS AND MONETARY POLICY DECISIONS

Annual consumer price inflation dropped for the second month in a row, having gone from 8.97% in July to 7.27% in September 2016. This slowdown, which was more than expected, is attributed largely to not as much of an increase in food prices, and – less so – to more moderate price hikes for the goods and services that were affected the most by nominal peso depreciation in the past. This suggests the effects of the strong temporary supply shocks that diverted inflation from its target (*El Niño* weather and nominal depreciation) are beginning to subside faster than anticipated (Graph A).

The average of the core inflation measures declined as well, although not as much, moving from 6.61% in July to 6.29% in September. Inflation expectations eased during the same period, although they still exceed the target for 2017. Analysts are forecasting 4.23% and 3.65% inflation at one and two years, while expectations derived from government bonds at two, three and five years are at around 3.6%.

Graph A
Total Consumer Inflation



Observed inflation ... Inflation target ... Target range

Sources: DANE and Banco de la República.

The economic indicators for the third quarter of 2016 suggest GDP growth was less than during the first half of the year, with the momentum in external and domestic demand being weaker than was forecast three months ago. The average growth rate for Colombia's trading partners has been lower than expected, which is why the country's non-commodity exports performed poorly. Domestic demand has continued to adjust in keeping with the decline in national income. Additionally, the negative supply shock sparked by the truckers' strike had a serious impact on several sectors of the economy. In light of this data and with the new figures on economic activity for the fourth quarter,

the technical staff reduced its growth forecast for 2016 from 2.3% to 2.0%, within a newly revised projected range of 1.5% to 2.5%.

This macroeconomic situation points to a slightly faster-than-anticipated adjustment in expenditure in excess of income, suggesting a more pronounced correction in the external deficit than was forecast last quarter. Accordingly, the Central Bank’s technical staff lowered its forecast for the current account deficit, as a proportion of GDP, from 5.3% to 4.7% (equivalent to US \$13.2 billion). The slowdown in output and the reduced external deficit reflect the adjustment in the Colombian economy that is required in response to the negative shock to national income that has faced the country since mid-2014.

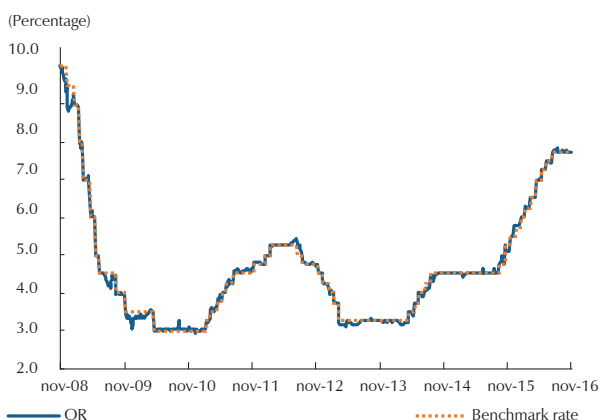
Considering price behavior and inflation expectations, the Bank’s technical staff estimates inflation will continue to converge towards its target in the coming months. The slowdown in food prices should persist until at least the first quarter of next year, given more of a supply in this group, particularly with respect to perishables. In the absence of new shocks, the pass-through to inflation of the significant depreciation in the peso should continue to subside. Weaker demand would contribute more to the reduction in inflation than in previous months. Additionally, as long as inflation expectations tend to anchor at 3.0%, the price-indexing mechanisms will be more compatible with the target.

In summary, the Colombian economy continues to adjust to the strong shocks experienced since 2014, and the current account deficit is declining gradually. The dynamism in output has been weaker than anticipated and,

although inflation has declined, inflation expectations for 2017 still exceed the target. The consequences of the supply shocks that affected price levels and inflation expectations have begun to reverse and this trend is expected to persist.

With the current figures, the risk of the economic slowdown being more pronounced than the decline in national income and the risk of inflation converging more slowly towards the target for 2017 appear to be subdued. In light of this assessment, the Board of Directors decided at its August, September, and October meetings to make no change in the policy interest rate. New information on price behavior and aggregate demand will provide further indications as to the speed at which inflation is expected to converge towards the target, and about the intensity, nature, and persistence of the economic slowdown (Graph B).

Graph B
Banco de la República’s Benchmark Interest Rate and the Overnight Rate (OR)
(2009-2016)^{a/}



a/ The figures pertain to data for business days. The last figure is for November 15, 2016. Sources: Financial Superintendence of Colombia and Banco de la República

In light of the negative effects the fall in oil prices has had on public finances, the Board also felt the Tax Reform Bill presented by the government to Congress is a fundamental measure that contributes to long-term growth by strengthening fiscal sustainability, fostering macroeconomic stability, and reducing the country's risk perception.

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INFLATION REPORT

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I. THE EXTERNAL CONTEXT AND BALANCE OF PAYMENTS

The continued expectation in this report is that Colombia's main trading partners will experience a recovery in economic growth during 2017, although at a relatively slow pace.

A moderate recovery in Colombia's terms of trade by 2017 is expected, thanks largely to higher prices for oil, coal and coffee.

During the first half of 2016, the current account deficit as a proportion of GDP was 4.8%, down from 6.3% a year ago. This is because the reduction in current expenditures exceeded the decline in income.

The external imbalance will continue to adjust during the remainder of 2016 and in 2017, both in dollars and as a percentage of GDP.

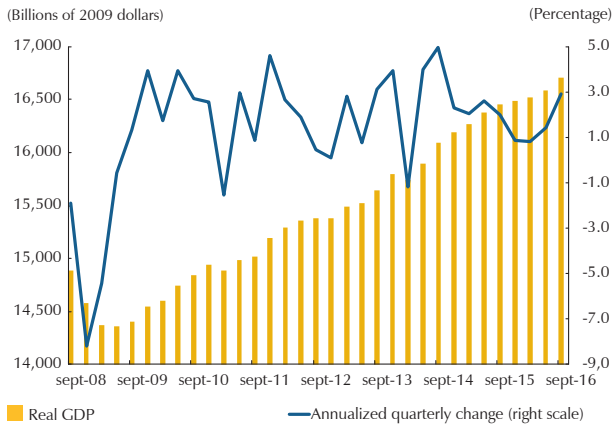
A. THE INTERNATIONAL CONTEXT

1. Productive Activity, Inflation, and Monetary Policy

The sectoral data at hand suggest Colombia's main trading partners would have continued to experience weak economic growth during the third quarter of the year. The United States probably saw its output surge, while the euro area and China would have posted rates similar to those of the previous quarter and Latin America would have grown at historically low or even negative rates.

In the United States, GDP in the second quarter disappointed the market, with an annualized quarterly (a.q.) increase of 1.4%. The analysts expected 2.5% a.q. Inventories, residential investment and government spending were the components that contributed to the drop in output. Growth was led by consumption, which performed remarkably. Non-residential investment and net exports contributed less to the expansion.

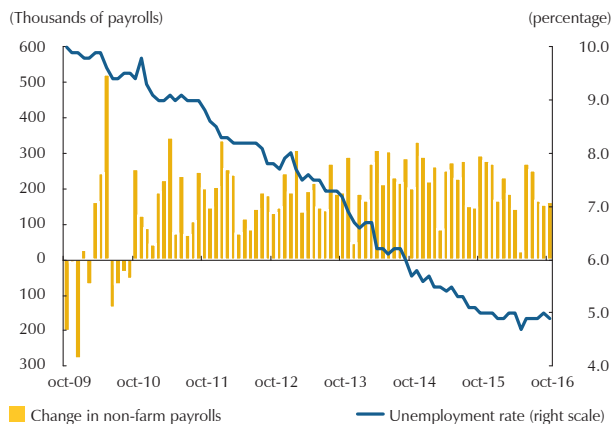
Graph 1
Real GDP in the United States^{a/}



a/ This report was written without the official figure for the third quarter, which was released on October 28.
Source: Bureau of Economic Analysis

The latest figures point to a more dynamic GDP during the third quarter.¹ Household consumption should continue to bolster growth, thanks to good momentum in the labor market for both jobs and wages. Retail sales continue to show positive year-on-year changes and consumer confidence remains relatively high. In addition, industrial production and business confidence posted good figures during the quarter (Graph 1).

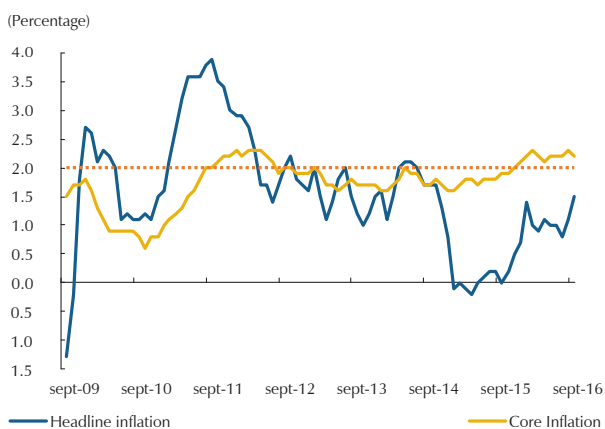
Graph 2
Unemployment and Job Creation Rates in the United States



Source: Bloomberg.

In the job market, the growth in nonfarm payrolls continued during the quarter, with an increase of 192,000 new jobs per month, on average. This was reflected in an unemployment rate that remained close to 5.0% (Graph 2), which is the level analysts and members of the Federal Reserve (Fed) regard as the long-term equilibrium rate for the US economy. Underemployment² also remains low and similar to the levels observed last quarter.

Graph 3
Annual Headline and Core Inflation Indicators in the United States



Source: Bloomberg.

In terms of price changes in the United States, headline inflation was 1.5% in September. This is the highest it has been since 2014, but is still below the Fed's target of 2.0%. The increases in recent months are largely the result of higher energy prices. On the other hand, inflation excluding food and energy was stable, ending the quarter at 2.2% (Graph 3). In this context, the Federal Open Market Committee (FOMC) decided, at its September meeting, to leave its policy rate unchanged and within a range of 0.25% to 0.50%.

GDP in the euro area during the second quarter rose at a quarterly rate of 0.3%, based mainly on investments by non-financial firms and household

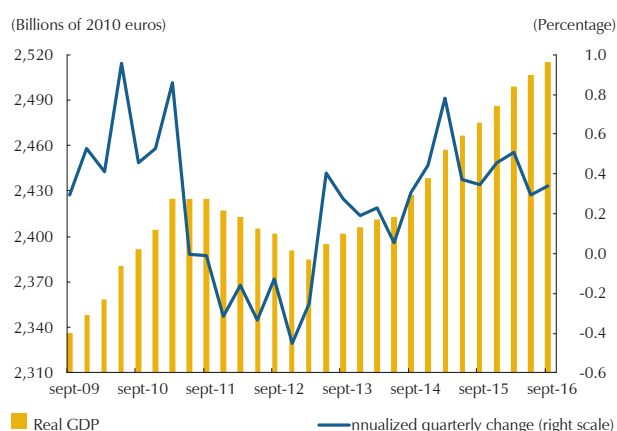
1 This report was written without the official figure on third-quarter growth in the United States. The first estimate to that effect was released on October 28 and indicates GDP was up by 2.9% a.q., which is higher than market analysts expected.

2 The underemployment rate is a measure of the total number of unemployed persons, employees with part-time jobs who want full-time work and those outside the labor supply who would be willing to work if they found a job (persons marginally linked to the job market), as a proportion of the labor force, and those marginally linked to the job market.

consumption. The latest figures indicate growth during the third quarter³ would have held at rates similar to those observed in the second quarter and the driving forces would have remained the same.

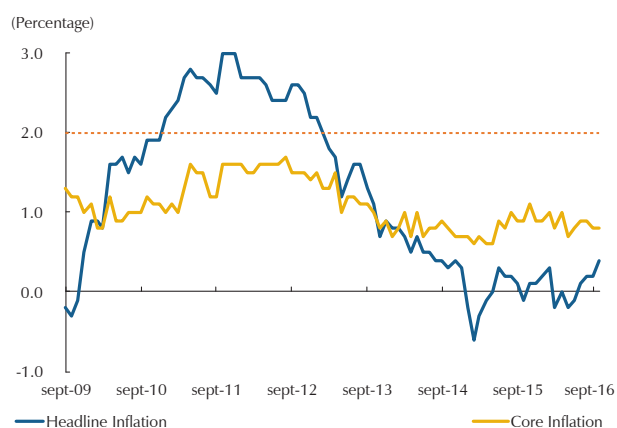
Industrial production accelerated in August, posting an annual increase of 2.0%. The same was true of business confidence, which increased significantly in October. As for the consumption indicators, although retail sales were down in August, a recovery is expected to be evident in the upcoming data, since consumer confidence in October remained relatively high (Graph 4).

Graph 4
Real GDP in the Euro Zone^{a/}



a/ This report was written without the official figure for the third quarter, which was released on October 31.
Source: Eurostat

Graph 5
Annual Headline and Core Inflation Indicators in Europe



Source: Bloomberg.

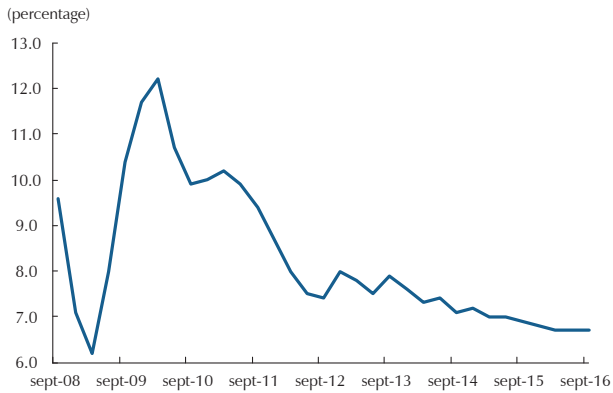
As for prices in the euro area, headline inflation was up 0.5% in October, a figure not witnessed since 2014. The indicator excluding food and energy remained at 0.8%, which is close to the average rate for the past year (Graph 5). The bulk of the increase in headline inflation is explained by less of a drop in energy prices. However, despite the recent hikes, inflation is still below the target set by the European Central Bank (ECB) (slightly under 2.0%).

Because of low inflation and limited demand-pulled pressure on prices, the ECB announced, at its October meeting, that it will continue its quantitative easing program until March 2017, with low interest rates and monthly purchases of 80 billion euros in assets. The monetary authorities say this stance will be extended for as long as necessary to make sure inflation reaches a path that is consistent with its target.

In the case of China, annual GDP growth in the third quarter was equal to what it was in the two previous quarters: 6.7% (Graph 6). Investment continues to be replaced by consumption, as evidenced by the fact that retail sales are increasing at a higher rate than investment in fixed assets. Growth in industrial production during this period continued at the rates observed during the past

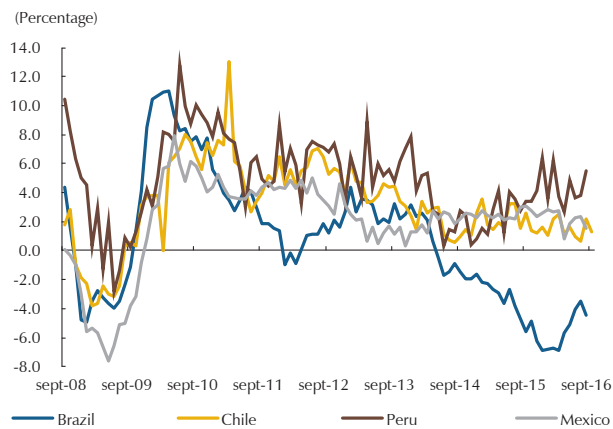
3 This report was produced without the official figure for third-quarter growth in the euro area. The initial estimate in that respect was released on October 31 and indicates the quarterly increase in GDP was 0.3% during that period, which is the same as in the second quarter and coincides with what the analysts projected.

Graph 6
Real Annual GDP Growth in China



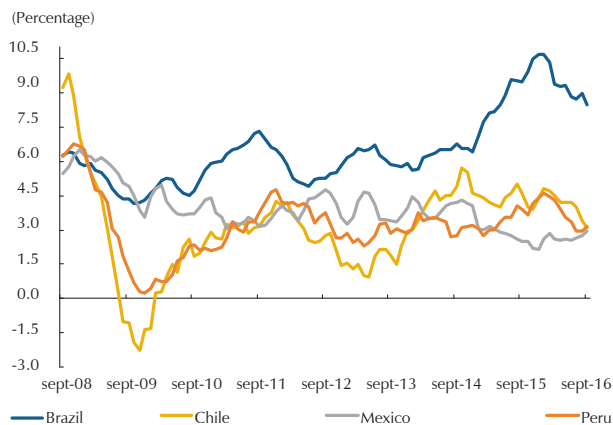
Source: Bloomberg.

Graph 7
Annual Growth in the Monthly Economic Activity Indexes of Several Latin American Economies



Source: Datastream.

Graph 8
Annual Inflation in Several Latin American Economies



Source: Datastream.

year (6.0%). However, confidence in the manufacturing sector recovered and is on the rise once again.

Meanwhile, most of the Latin American countries are still less dynamic than in the past, largely because of the decline in terms of trade witnessed in previous years. Growth in Chile and Peru during the second quarter of the year was less than in the first quarter, while Venezuela, Ecuador, Argentina and Brazil saw their output contract. With respect to the third quarter, the economic activity indexes in August indicate the economies of Peru, Chile and Brazil will expand at rates higher than those on record during the second quarter, while they would be similar in Mexico to those observed recently (Graph 7).

The figures for inflation in the region by September are mixed. On the one hand, the inflation rates in Colombia and Brazil are falling, but still exceed their target range. In Chile, Peru, and Mexico, inflation is already contained within their respective target ranges⁴ (or nearly so, as is the case in Peru) (Graph 8).

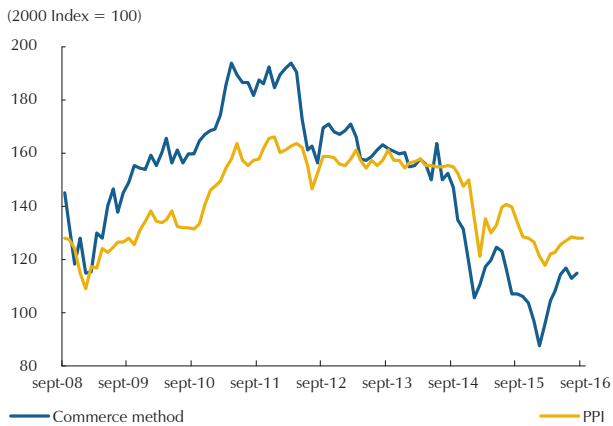
2. Commodity Prices

Prices for Colombia's major export commodities increased during the third quarter of the year, with the exception of oil, which stayed at its second-quarter levels. Even so, the country's terms of trade are still low compared to what they were in recent years (Graph 9).

As for the different commodities, the average price of oil (Brent reference) did not change between the second and third quarters of the year, and remained at USD 47 per barrel. However, it did increase during the first three weeks of Octo-

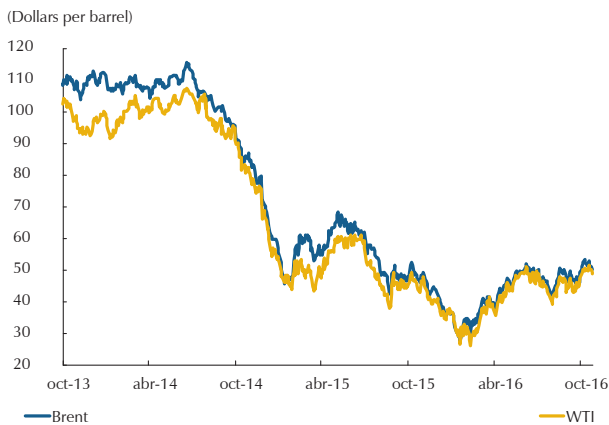
4 The target range for Chile and Mexico is 3.0% +/-1.0%. It is 2.0% +/-1.0% for Peru.

Graph 9
Terms of Trade Index
(Commerce Method & PPI)



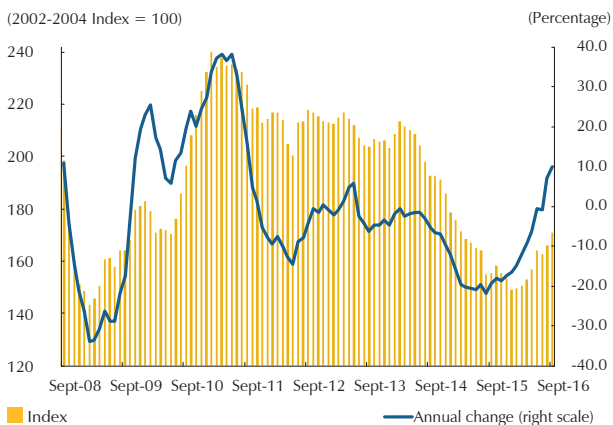
Source: Banco de la República.

Graph 10
International Oil Prices (Brent and WTI)



Source: Datastream.

Graph 11
International Food Prices



Source: United Nations Food and Agriculture Organization.

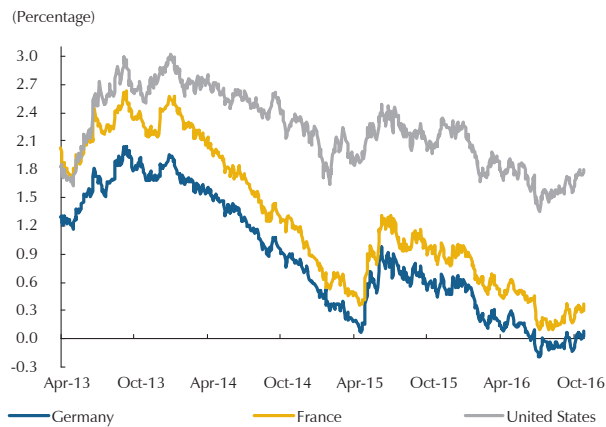
ber, reaching an average of USD 51.9 per barrel (Graph 10). This was due largely to the expectation of a reduction in the oversupply, following an announcement by the Organization of the Petroleum Exporting Countries (OPEC) about a possible agreement to cut production. The agreement would take effect in November, following OPEC's official meeting, and would reduce production quotas for each member country. This situation is compounded by persistent production cuts in Nigeria and Libya, low production and investment in the United States, and the shrinking inventories reported in the US in recent weeks.

The average price of coal rose considerably between the second and third quarters, having gone from USD 48.3 to USD 59.8 per ton. The increase became more pronounced in October and, by the third week of that month, the price had risen 28% compared to the average for the third quarter. This behavior would be associated with the restrictions on coal production in China, given the new environmental regulations, and by some production cuts at mines in Australia due to weather problems. In addition, it is important to estimate the impact on fuel prices, since the higher price for crude could bring upward pressure to bear on all its substitutes.

The international price of coffee is up as of April, due to weather problems in several coffee exporting countries. Nickel prices and those of other industrial-use metals exported by some of Colombia's trading partners remained at the levels witnessed last quarter.

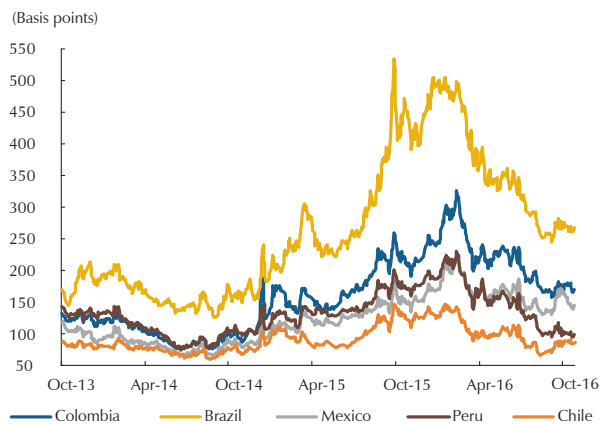
In terms of international prices for agricultural raw materials and food, the United Nations Food and Agriculture Organization (FAO) Index showed annual increases in the third quarter, something not witnessed since 2013 (Graph 11). Because Colombia imports these items, the hikes that were observed would have slowed, to some extent, the improvement in the terms-of-trade indicator.

Graph 12
Interest Rates on Certain 10-Year Sovereign Bonds



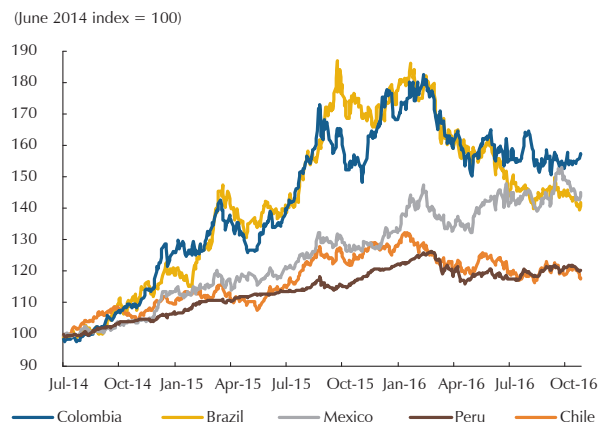
Source: Bloomberg.

Graph 13
Five-year Credit Default Swaps (CDS) for Several Latin American Countries



Source: Bloomberg.

Graph 14
Exchange Rate Indexes for Several Latin American Countries



Source: Bloomberg.

3. Financial Markets

The financial markets were relatively calm during the third quarter of the year. Because of excess global liquidity, interest rates on the securities of several developed economies are extremely low and even negative (Chart 12). Moreover, risk premiums in Latin America continued to decline in wake of the highs witnessed in February (Chart 13). In the case of Colombia, five-year credit default swaps (CDS) fell from their peak value of 326 basis points (bp) on February 11 to 174 bp, on average, for October. Mexico has had to confront movement in risk premiums associated with the presidential elections in the United States. September saw increases close to 35 bp, which began to reverse in recent weeks.

As for currencies, the US dollar remained stable during the third quarter against most of the world's currencies. However, a significant amount of appreciation was observed during the first three weeks of October, but not enough to place the dollar at the high levels witnessed at the start of the year. The Latin American currencies have been relatively stable against the dollar since April, with the Mexican peso showing increased volatility associated with the uncertainty of the political process in the United States. The appreciation experienced in the Brazilian real since January slowed in August and the currency stabilized at levels similar to those witnessed during the first quarter of 2015 (Graph 14). The average rate for the Colombian peso was COP 2,946 between July and October, versus COP 2,992 in the second quarter.

4. Forecasts by *Banco de la República's* Technical Staff

The growth forecasts for Colombia's trading partners in 2016 (trade-weighted) were revised downwards. Current projections suggest 0.27% growth for the year as a whole, much less than the 0.6% forecast three months ago.

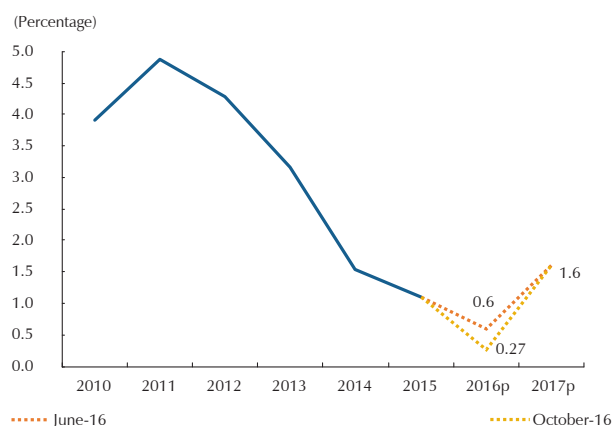
The forecasts for growth in the United States, Venezuela, Mexico, Peru and Chile during 2016 were revised downwards, while the forecast for Brazil was raised (Table 1). As for 2017, although some recovery is expected compared to this year, our trading partners would continue to experience very little growth compared to what was observed in the last decade (Graph 15).

Table 1
Growth Forecasts for Colombia's Trading Partners

Growth forecasts for Colombia's trading partners	2015	Forecasts for 2016 Scenario			Forecasts for 2017 Scenario		
		Minimum forecast	Central forecast	Maximum forecast	Minimum forecast	Central forecast	Maximum forecast
Main partners							
United States	2.6	1.3	1.5	1.7	1.0	2.0	2.5
Euro Area	2.0	1.4	1.6	1.8	0.8	1.4	2.0
Venezuela	(6.2)	(13.0)	(10.0)	(7.0)	(7.0)	(4.5)	(1.0)
Ecuador	0.3	(3.5)	(3.0)	(2.5)	(3.0)	(1.0)	0.5
China	6.9	6.4	6.6	6.8	5.4	6.2	6.6
Other partners							
Brazil	(3.8)	(3.8)	(3.3)	(2.8)	0.0	1.0	2.0
Peru	3.3	3.5	3.7	4.0	3.0	4.2	5.0
Mexico	2.5	1.9	2.2	2.5	1.0	2.5	3.0
Chile	2.3	1.4	1.7	2.0	1.5	2.3	3.5
Total trading partners (non-traditional trade-weighted)	1.1	(0.2)	0.3	0.5	0.5	1.6	2.2
Developed countries^{a/}	2.1		1.6			1.8	
Emerging and developing countries^{a/}	4.0		4.2			4.6	
Total worldwide^{a/}	3.2		3.1			3.4	

a/ IMF forecasts at October 2016.
Sources: International Monetary Fund (IMF) and projections by Banco de la República

Graph 15
Average Growth of Colombia's Trading Partners
(Non-traditional trade weighted)



Sources: International Monetary Fund (IMF); calculations and projections by Banco de la República

The United States forecast for 2016 declined from 1.9% to 1.5%, given the disappointing GDP data for the second quarter, which was much lower than anticipated by leading market analysts and by *Banco de la República's* technical staff. Consumption is expected to continue to be the driving force of growth in that country during the second half of the year, given the positive figures posted for jobs and wages. In addition, investment should cease to take away from GDP in the coming quarters. Finally, there is no anticipation of strong export growth, given weak global demand and the relative strength of the dollar. All these forces are likely to become more pronounced in 2017, when economic growth would be 2.0%. These forecasts assume the new administration that will take office at the beginning of 2017 will maintain economic policies similar to those currently in force.

Latin America continues to exhibit historically low growth rates. Ecuador, Venezuela, and Brazil will see negative rates in 2016, and Brazil's output is expected to stop contracting by 2017.

In this environment, the job market in the United States is expected to continue its recovery, and the unemployment rate remains close to the long-term levels. Inflation should continue to rise and is likely to be very near the Fed's target by the end of 2017. In response, the Fed is expected to raise its benchmark rates by 25 bps in December, followed by a similar increase in the second half of 2017.

The economic recovery in the euro area would proceed slowly, as anticipated in the June edition of this report. However, the forecast for 2017 was raised to 1.4%, since the UK's exit from the European Union is expected to occur in a more orderly fashion than was anticipated initially, and the effects are expected to be better distributed in the years ahead. Inflation would remain low, but on an upward trend. The ECB is expected to maintain its quantitative easing program, with low rates and asset purchases throughout 2017. This would favor economic recovery, supported mainly by consumption and investment. Exports are not expected to be a source of growth, given the poor momentum in global demand.

In the case of China, the country's transition to an economy supported more by private consumption is expected to continue, which means growth rates for investment and exports would continue to decline. In particular, a slight slowdown in the pace of economic growth during the fourth quarter of 2016 is anticipated, a trend that will continue into 2017.

The forecast for growth in Peru and Chile was revised downwards slightly, because the second-quarter figures for output were lower than those forecast in last edition of this report. The economic activity indexes appear to suggest the third quarter would have seen more activity than the second. In Venezuela, the estimate for growth in 2016 as a whole was revised downwards by three percentage points (pp) (to -10.0%). Although there is no information on the last three quarters, there are no signs of recovery.

The price of oil (Brent crude) is expected to average USD 44.5 per barrel in 2016, which is slightly higher than was anticipated in the July edition of this report (US D43). There should be a slight increase in 2017 that would put the price at USD 52 per barrel.

Growth in Mexico during the first half of the year depended on the momentum in consumption. Accordingly, after consumer confidence deteriorated, the technical staff at *Banco de la República* decided to reduce its growth forecast for 2016. A lower rate is expected in 2017, based on the possible effects of less consumer and business confidence and on depreciation of the Mexican peso against the US dollar.

In Brazil, the economy appears to have hit bottom between the first and second quarters, which is why the forecast for growth in 2016 rose by 0.2 (pp). Even so, a sharp economic contraction is still anticipated for the year as a whole, while 2017 would see growth at around 1.0%.

The central forecast scenario for the growth of Colombia's trading partners continues to exhibit significant downside risks. Among them is the possibility of more of an impact from Brexit, a stronger slowdown in China, and de-

clines in confidence generated by the political and economic uncertainty that could come with the electoral processes in the United States and Europe.

Although the momentum in China's economy continues, there are risks that could slow the country's growth and global growth as well, given China's connections to the rest of the world. The three main transmission channels from China to the world are the financial channel, trade in final goods and trade in raw materials. The latter would be the one with the most impact on Latin America.

As to prices for Colombia's main raw material exports, this report contemplates a slight upward revision in the price of oil and coal during 2016 (Table 2).

Table 2
Benchmark Price Forecasts for Colombia's Commodity Exports

Major products	2015	Forecasts for 2016 Scenario			Forecasts for 2017 Scenario		
		Minimum forecast	Central forecast	Maximum forecast	Minimum forecast	Central forecast	Maximum forecast
Colombian coffee (ex dock; dollars per pound)	1.51	1.50	1.55	1.60	1.50	1.80	2.10
Brent crude (dollars per barrel)	52.9	42.00	44.50	47.00	40.00	52.00	60.00
Coal (dollars per ton)	60.1	52.00	54.00	56.00	45.00	60.00	70.00
Nickel on the London exchange (dollars per ton)	11,877	9,000	9,500	10,000	9,000	11,000	13,000
Gold ^{a/} (dollars per troy ounce)	1,160	1,300	1,270	1,240	1,550	1,250	1,100

a/ This is assumed to be a haven value, because the price of gold increases when there is more uncertainty (a pessimistic scenario).
Sources: Bloomberg; calculations by Banco de la República

As for oil prices, the central forecast for 2016 is USD 44.5 per barrel, which is higher compared to the forecast in the last edition of this report (USD 43). The rise, in this case, is due to the price increase observed after the OPEC announcement in September. However, there is expected to be no effective reduction in supply following the OPEC meeting in November, so the price for next year would be USD 52 (slightly higher than the current one), since some reduction in the oversupply is anticipated for 2017. This forecast includes production cuts in Nigeria and Libya.

As with oil, the forecast for the price of coal in 2016 was revised upward due to the recovery witnessed in recent weeks. The current levels will continue, as long as coal remains in short supply.

B. BALANCE OF PAYMENTS

1. Results for the First Half of 2016

The current account in the country's balance of payments registered a deficit of USD 6,284 m during the first half of 2016, which is USD 3,233 m

The current account in the balance of payments showed less of a deficit during the first half of 2016 than in the same period in 2015.

less than the deficit a year earlier. As a proportion of GDP, this comes to 4.8%, which implies a reduction versus the 6.3% on record for the first half of 2015.

The external balance, in dollars, was characterized by more of a contraction in current expenditure than in revenue. Reduced net outflows for factor income were a highlight, as was the decline in the trade deficit for goods and services, and the added income from current transfers. In terms of real activity, this is consistent with the slowdown in domestic demand during the first half of the year (see Chapter II in this report), which indicates the economy is adjusting to the new trajectory of national income.

Most of the annual drop in factor income (USD 1,531 m) can be attributed to less revenue for companies with direct investment, and particularly to the losses incurred by foreign firms that operate in the oil and mining sector. Fewer profits for companies in the other sectors of the economy also contributed to this outcome.

As for the balance in services, net outflows were down by USD 814 m compared to a year ago, thanks to a sizeable reduction in current outlays, while revenues remained at similar levels. A highlight with regard to service imports is the decline in payments for shipping, oil services, and travel expenses.

The foregoing situation was accompanied by a decline in the trade deficit for goods (USD 506 m), thanks to a major contraction in imports (USD 5,324 m or -20.4%), which more than offset the decline in exports (USD 4,819 m, -23.6%). The drop in imports is consistent with the slowdown in domestic demand during the same period, as well as the depreciation of the exchange rate. Colombian exports are declining in an environment of lower prices for the country's main commodities, plus contractions in the volume of oil being produced and low economic growth on the part of Colombia's most important main trading partners. Another factor that helped to reduce the current imbalance was the increase in current transfers, particularly due to a sizeable rise of 12.4% in worker remittances compared to the same period last year.

The annual contraction in the deficit during the first half of the year is due to less expenditure for factor income, less of a trade deficit for goods and services, and more income from current transfers.

As for external financing, net capital inflows during the first half of 2016 came to USD 6,805 m, which is less than what they were a year ago (USD 9,560 m). In particular, net direct investment (USD 6,478 m) increased by USD 677 m during the first six months, compared to the year before, thanks to an increase in FDI resources, which was partially offset by more Colombian direct investment abroad. The rise in the flow of resources of this type was concentrated in the electricity, gas, and water sector, and is explained largely by the sale of Isagén. The other sectors, as a whole, registered an annual contraction of 24% in direct investment flows.

The country received USD 3,284 m in foreign portfolio investment between January and June 2016, an amount similar to what it obtained a year earlier. Most of these resources came from the placement of long-term debt securities on international markets, primarily bonds issued by government entities and, to a lesser extent, from TES (Colombian treasuries) purchased on the local market by foreign investors.

As for other capital flows, mostly loans (excluding derivative operations), the country constituted USD 3,272 m in net assets abroad, particularly in the form of deposits by government entities. This amount contrasts with USD 1,184 m in net disbursements received during the first half of 2015. International reserves from balance-of-payments transactions declined by USD 57 m during the first six months of the year, given *Banco de la República*'s sale of foreign currency to exchange intermediaries.

The external imbalance will continue to be corrected during the second half of 2016, largely as a result of the lower trade deficit in goods.

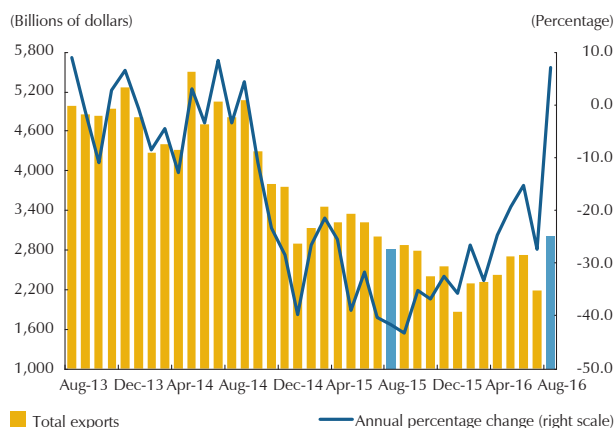
2. Forecasts for 2016 and 2017

The forecasting exercises done for this report indicate the current account deficit will continue to adjust during the remainder of 2016 and in 2017. Accordingly, the trade balance for goods is expected to show less of a deficit in the second half of 2016 than during the same period in 2015. This is because imports, in dollars, are expected to decline more than exports, which also would continue to contract, but at a lower rate than in previous quarters. The latter is due partly to the recovery in most reference prices for the country's export commodities, as mentioned in the first part of this chapter, and to the higher volumes estimated for coal sales.

The available data on foreign trade in goods for July-August tend to confirm this forecast. During that period, total exports, in dollars, declined by USD 628 m (-10.8%) over the previous year (Chart 16), affected by the behavior of international commodity prices, which did recover during July-August, but remained low compared to those observed a year ago, and by the low value of exported industrial goods and the smaller volumes of crude oil that were shipped out of the country. FOB imports⁵ declined by USD 1,518 m (19.7% in annual terms) during the July-August period, due mainly fewer purchases of capital equipment (Chart 17) (see the shaded section on page 26).

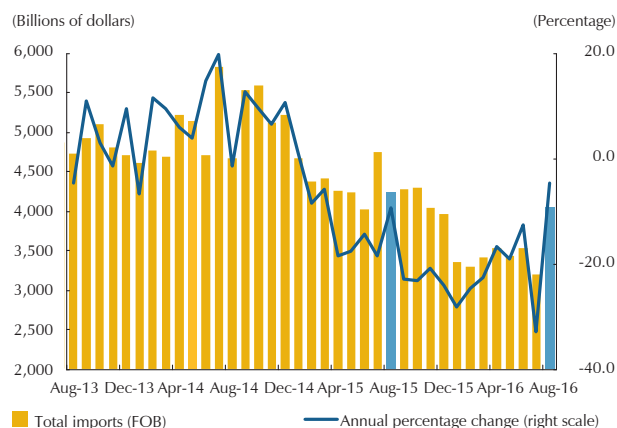
5 Unlike the balance-of-payments measure, which takes into account the FOB (free on board) value of imports, GDP calculated according to the national accounts considers CIF imports, which include freight and insurance. The average total value of the latter in dollars, during July and August 2016, came to US 3,795 m, which implies an annual reduction of 19.3%.

Graph 16
Total Exports
(Monthly)



Source: Bloomberg.

Graph 17
Total Imports (FOB)
(Monthly)



Source: DANE; calculations by Banco de la República.

EXPORTS AND IMPORTS IN DOLLARS DURING THE SECOND QUARTER OF 2016 AND IN THE THIRD QUARTER TO DATE

Second Quarter:

Total exports, in dollars, fell 19.7% during the second quarter compared to the previous year, given fewer foreign sales of mining and industrial goods, which were down by 29.3% and 14.4% annually, in that order (see Table A). In the first group, oil exports posted an annual decline of 45.7%, mainly due to the drop in the international price (Brent), which averaged USD 15.5 less during the second quarter than the average price observed during the same period in 2015.

As for exports of industrial goods, the ones most affected, by destination, were those to Venezuela, which fell by 44.4%. Sales of industrial goods to Ecuador were down by 36.7%. In contrast, industrial exports to the European Union and to the United States rose 21.8% and 7.4%, respectively (Chart A).

FOB imports, in dollars, fell 16.2% year-on-year during the second quarter, given fewer foreign purchases in all product groups, but mainly with respect to capital goods (-21.5%) and intermediate goods (-14.4%) (Chart B).

July-August:

Exports, in dollars, declined at an annual rate of 10.8% during the two months of July and August 2016, given fewer exports in all product groups. The largest drop was in exports of agricultural goods (-23.0%), mainly because of the reduction in coffee exports (-35.5%) (Table B).

Industrial exports fell at an annual rate of 10.6% between July and August (Chart C). This is a reflection of the significant drop in non-traditional exports to Venezuela (-42.9%) and to the European Union (-19.9%). Meanwhile, sales of industrial goods to Ecuador and the United States were down slightly: 2.6% and 2.5%, in that order.

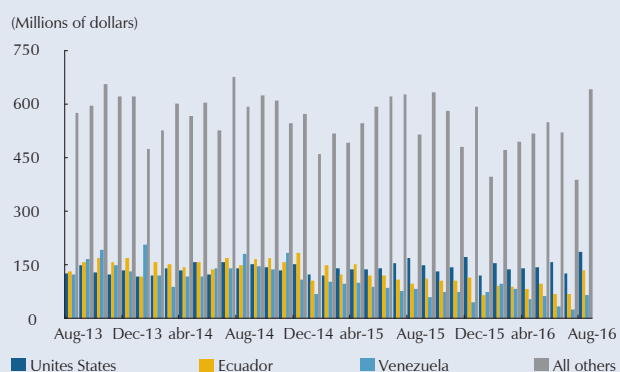
FOB imports, in dollars, contracted 19.6% annually during that same period. This performance is associated with the drop in the imported value of all types of goods, particularly the 28.7% reduction in capital goods and 15.2% in intermediate goods.

Table A
FOB Exports and Imports in Dollars for the Second Quarter of 2016

Group	Annual Change	Item	Annual Change in the Item
Total Exports	(19.70)		
Mining goods	(29.30)	Crude oil	(45.70)
All other exports ^{a/} (Industrial goods)	(14.40)	Chemical products	(16.40)
		Vehicles	(22.70)
		To Venezuela	(44.40)
		To Ecuador	(36.70)
		To the European Union	21.80
Agricultural goods	17.20	To the United States	7.40
		Coffee	14.30
		Bananas	37.60
		Flowers	8.10
Total Imports	(16.20)		
Capital goods	(21.50)	Transport equipment	(26.50)
		Capital goods for industry	(20.10)
Intermediate goods	(14.40)	Raw materials for industry	(9.50)
		Fuel and lubricants	(30.80)
Consumer goods	(12.30)	Durable goods	(19.60)
		Non-durable goods	(4.60)

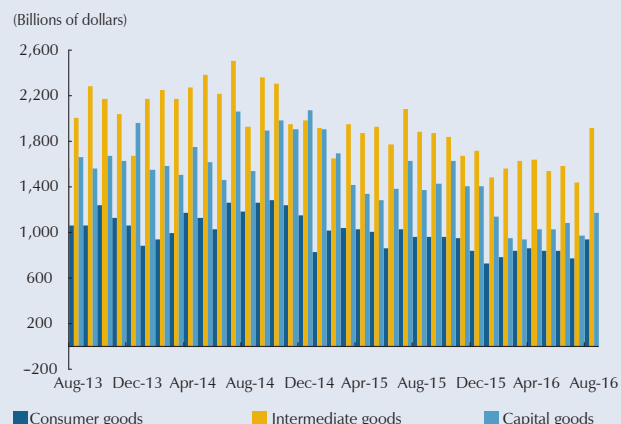
a/ This group does not include oil and derivatives thereof, coal, ferronickel, gold, coffee, bananas or flowers.
Sources: DANE; calculations by Banco de la República

Graph A
Industrial Exports to the United States, Ecuador, Venezuela and All Other Countries^{a/} (monthly)



a/ Excluding oil and derivatives thereof, coal, ferronickel, gold, coffee, bananas and flowers. Including other mining and agricultural goods.
Sources: DANE; calculations by Banco de la República

Graph B
Imports by type of Goods (FOB)



Source: DANE; calculations by Banco de la República.

Finally, it is important to note the sharp drop in the monthly behavior of the value of exports and imports in dollars for all groups during July (Graphs A, B and C). Part of this reduction can be attributed to the effect of the truckers' strike on shipping within the country, which hampered the trade in goods.

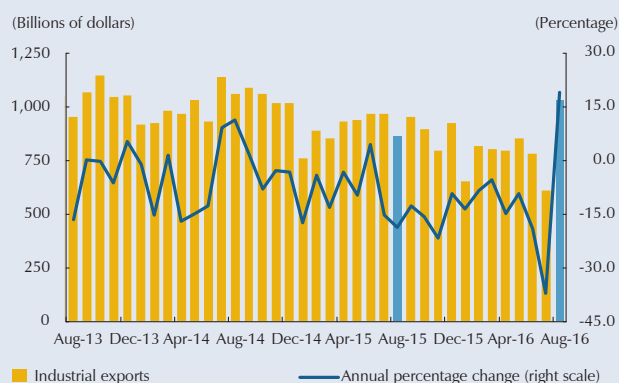
Export and import values recovered in August, once the strike was over. This would imply a partial reversal of the July shock.

Table B
FOB Exports and Imports in Dollars for the Third Quarter of 2016 to Date

Group	Annual Change	July-August	
		Item	Annual Change in the Item
Total Exports	(10.8)		
Agricultural goods	(23.0)	Coffee	(35.5)
		Bananas	(11.5)
		Flowers	(0.7)
All other exports ^{a/} (Industrial goods)	(10.6)	Chemical products	(7.1)
		Food, beverages & tobacco	(16.0)
		To Venezuela	(42.9)
		To the European Union	(19.9)
		To Ecuador	(2.6)
		To the United States	(2.5)
Mining goods	(8.1)	Crude oil	(29.4)
		Oil refining	89.2
Total Imports	(19.6)		
Capital goods	(28.7)	Transport equipment	(32.2)
		Capital goods for industry	(26.7)
Intermediate goods	(15.2)	Fuel and lubricants	(26.5)
		Raw materials for industry	(11.4)
Consumer goods	(14.4)	Durable goods	(19.2)
		Non-durable goods	(10.2)

^{a/}This group does not include oil and derivatives thereof, coal, ferronickel, gold, coffee, bananas or flowers.
Sources: DANE; calculations by Banco de la República

Graph C
Industrial Exports ^{a/}
(Monthly)



^{a/} Excluding oil and derivatives thereof, coal, ferronickel, gold, coffee, bananas and flowers.
Includes other mining and agricultural goods.
Sources: DANE; calculations by Banco de la República

On the other hand, the annual adjustment in the non-factor services deficit is expected to be less during the second half of the year than during the first six months, while net expenditures for factor income will increase slightly. The latter would be due to the impact the recovery in prices for mining-energy products has on profits, which would be offset partly by fewer profits in certain sectors that are focused on domestic demand, as a result of less momentum in economic activity.

In addition, net income from transfers would be higher than during the same period in 2015, particularly because of the increase in growth expected in the United States during the second half of the year and, to a lesser extent, in Europe (see Section A in this chapter).

In terms of financing, FDI flows are expected to continue during the second half of 2016, but to a lesser extent than in the same period a year ago, while portfolio investment resources will remain at high levels, especially during the third quarter. The figures at hand on capital flows in the foreign exchange balance⁶ show a considerable increase in foreign portfolio investment resources from the private sector during the third quarter. This implies levels of financing for this item that were higher during the first nine months of the year than those recorded a year ago. In addition, there are the resources from bond sales and external loans with multilateral banks, especially those obtained by entities in the public sector.

The current account deficit for all of 2016 is expected to be around 4.7% of GDP, with an approximate value of USD 13.2 billion.

As in the previous edition of this report, different balance of payments forecast scenarios associated with the terms and availability of external financing for the local economy in all of 2016 were taken into account, as were commodity prices and the growth of our trading partners. The various assumptions with regard to these factors determine the breadth of the forecast range for the current account deficit. In the central scenario, the estimated current account deficit for all of 2016 is lower than what was forecast three months ago, implying more of an adjustment in the external balance, in dollars and as a percentage of GDP, in relation to the figure on record for 2015. In the most likely scenario, the current account deficit would be around USD 13,223 m, which is 4.7% of GDP (Table 3). This forecast considers the impact reference prices for export commodities have on different accounts in the external balance, as well as the effects of the slowdown in the Colombian economy, as illustrated in the first part of this chapter.

The sizeable trade deficit for goods is expected to continue throughout 2016, but should be less than in 2015. Compared to the forecast last quarter, less

⁶ The capital flows in the exchange balance do not coincide exactly with what is registered in the balance of payments, since they refer to the inflow and outflow of foreign exchange. However, they do offer some idea of its trend.

Table 3
Balance of Payments
Annual Flows (Millions of US dollars)

	2012	2013	2014 (pr.)	2015 (pr.)	2016 (proj.)
Current account (A+B+C)	(11,214)	(12,122)	(19,459)	(18,938)	(13,223)
Percentage of GDP	(3.0)	(3.2)	(5.1)	(6.5)	(4.7)
A. Goods and services	(840)	(2,664)	(11,300)	(18,231)	(14,168)
B. Primary income (factor income)	(14,994)	(14,187)	(12,634)	(5,825)	(4,533)
C. Secondary income (current transfers)	4,620	4,729	4,475	5,117	5,477
Financial account (A+B+C+D)	(11,753)	(11,845)	(19,599)	(18,604)	(13,483)
Percentage of GDP	(3.2)	(3.1)	(5.2)	(6.4)	(4.8)
A. Direct investment (ii-i)	(15,646)	(8,557)	(12,426)	(7,514)	(8,633)
i. Foreign investment in Colombia (FDI)	15,039	16,209	16,325	11,732	12,398
ii. Colombian investment abroad	(606)	7,652	3,899	4,218	3,765
B. Portfolio investment (1+2)	(5,690)	(6,978)	(11,654)	(9,532)	(4,330)
C. Other investment (loans, other types of credit and derivatives)	4,177	(3,257)	44	(1,974)	(756)
D. Reserve assets	5,406	6,946	4,437	415	237
Errors and omissions (E & O)	(539)	277	(139)	334	(260)

(pr.) preliminary

(proj.): projected

Source: Banco de la República

Observation: The results presented in this table follow the recommendations outlined in the sixth edition of the Balance of Payments Manual proposed by the IMF. For additional information and changes in methodology, see <http://www.banrep.gov.co/balanza-pagos>

of a decline in traditional exports is anticipated, particularly because of the upward revision in major commodity prices and in the volume of coal shipments. On the contrary, the forecast for growth in non-traditional exports was revised downwards, due to a more-than-expected slowdown in sales of this type so far this year and the downward revision in growth forecast for our major trading partners.

Imports, in dollars, during 2016 as a whole would decline compared to 2015 (17.6% per year). This behavior is associated with a significant reduction in purchases of input and capital goods for industry, with less dynamic domestic demand, with some import substitution and with reductions in the dollar prices of imported goods, especially intermediate goods. The drop in imports is more pronounced, compared to the previous forecast, given their performance in the third quarter of the year and more of an estimated slowdown in domestic demand during the second half of 2016.

The reduction in the trade deficit for goods would be accompanied by less of a service trade deficit. This is due to the effects of accumulated peso depreciation on the net balance for certain services related to tourism and to lower-than-expected payments for shipping associated with imported cargo. Compared to the estimate last quarter, the deficit in foreign trade in services would have increased during 2016, partly because of the impact the recovery in oil prices has had on the value of shipping charges, as well as the pos-

sible positive impact a less depreciated exchange rate would have on what residents pay for services of this type.

Net outlays for factor income are expected to be less in 2016 as a whole than those observed in 2015, mainly because companies in the mining and energy sector have seen fewer profits. The reduction in profits in other sectors is a contributing factor as well, although less so. With respect to the previous projection, this deficit was reduced mainly due to the slowdown in economic activity forecast for the second half of the year.

Finally, taking into account the different scenarios for external variables (see Section A of this chapter), the estimated deficit range is between -4.3% and -5.1% of GDP.

As for financing, capital flows are expected to be less than in 2015, largely because of fewer resources from net portfolio investment and other foreign loans and credits. Specifically, the forecast is for fewer resources derived from the sale of bonds on international markets and reduced investment flows into the domestic stock market. However, Colombian treasury bonds purchases by foreign investors would exceed those on record for 2015.

Flows of net foreign direct investment to Colombia are expected to increase by 15% compared to what was observed a year ago, thanks to the proceeds from the sale of Isagén and less foreign investment by Colombians. This situation would be offset, in part, by reduced FDI investment in all sectors, in general, but more so for oil and mining due to the sharp price reductions for these products.

The correction in the external imbalance that began in 2016 is expected to continue during 2017. For this year, the current account deficit should be about 3.7% of GDP, given a central scenario that includes the assumptions outlined in the first part of this chapter. This would be associated primarily with a decline in the trade deficit for goods, thanks to a better price outlook for Colombia's major exports and the recovery anticipated for our trading partners, plus a slight reduction in imports. The trade deficit in services is expected to reach levels slightly below those observed in 2016, which is consistent with the growth forecast for Colombia's economy, as discussed in Chapter IV of this report. In terms of factor income, larger net outflows are anticipated due to higher interest payments for external borrowing and to the increase in profits earned by foreign companies that operate in the mining and energy sector, given the improvement in prospects for international oil and coal prices.

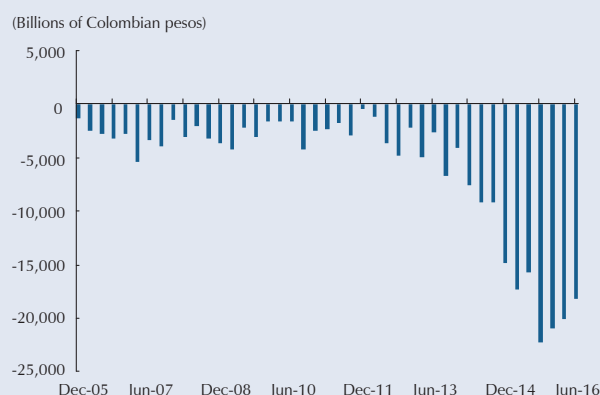
The current account adjustment observed in 2016 would continue during 2017, a year when the deficit, as a portion of GDP, would be close to 3.7%.

Box 1 THE NATURE OF THE TRADE DEFICIT CORRECTION

Juan Pablo Cote B.*

The behavior of the external balance in current pesos is characterized by a decline in the trade deficit for goods and services since the fourth quarter of 2015 (Graph B1.1). As noted in the previous edition of this report, the reduction in the trade deficit for goods has contributed to far fewer imports in dollars, which have offset the effect of the reduction in exports. The smaller deficit in the balance of services is explained, in turn, by sizeable reductions in imports of services, especially those for the mining and energy sector.

Graph B1.1
Trade Balance (National Accounts)



Source: DANE.

There could be two reasons for the nature of this adjustment in the trade balance: a real adjustment, via the quantities exported and imported, or a price adjustment, which leads to changes in terms of trade. In this sense, it is important to determine why the trade gap is narrowing. Doing so lets us know to what extent the adjustment pertains to real corrections that help to counteract the impact the negative shock to terms of trade (that began in the second half of 2014 and became more pronounced during 2015) had on the external imbalance, by isolating it from the effect generated by the fluctuations in price. Indeed, the country's terms of trade recovered to some extent during the first half

of the year, largely because of the rise in oil prices during that same period. Therefore, the reduction in the deficit may have some component related to that fact.

Algebraically speaking, the change in the trade balance can be broken down into two parts, as indicated above: one due entirely to changes in the prices of exported and imported goods and services, and another that depends only on changes in the quantities that are exported and imported. The process begins by defining a trade balance as follows:

$$BC = P_X X - P_M M$$

Where $P_X X$ is the exported value and $P_M M$ is the imported value. Accordingly, $P_X(P_M)$ is some measure of the price of goods and services exported (imported) and $X(M)$ is that of exported (imported) quantities.

In denominating the change in the trade balance as ΔBC , we obtain:

$$\begin{aligned} \Delta BC &= (P_X X - P_M M) - (P_{X0} X_0 - P_{M0} M_0) \\ &= \left[P_X X \left(\frac{P_X - P_{X0}}{P_X} \right) - P_M M \left(\frac{P_M - P_{M0}}{P_M} \right) \right] + \left[P_{X0} X_0 \left(\frac{X - X_0}{X_0} \right) - P_{M0} M_0 \left(\frac{M - M_0}{M_0} \right) \right] \end{aligned}$$

Where the 0 subscript indicates it is the initial value of the variable. The first square bracket can be interpreted as the effect that changes in terms of trade have on trade balance, since it is not null only if there are changes in the prices of exported or imported goods and / or services from one period to another. The second square bracket corresponds to the effect changes in exported or imported quantities has on the trade balance.

Graph B1.2 shows the result of this breakdown for the annual variations in the trade balance, with data for the second quarter of 2016 and using two methodologies.

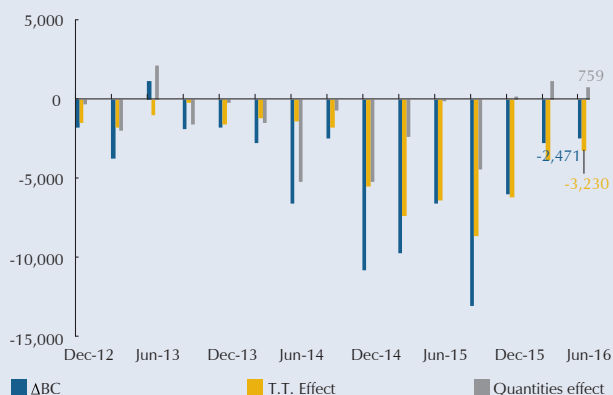
Panel A uses nominal and real export and import figures from the DANE national accounts, measured in pesos. These data include trade in goods and services. The variations in prices pertaining to the effect of terms of trade were constructed based on the implicit deflators of exports and imports.

* The author is an expert who works with the Department of Programming and Inflation. The opinions expressed herein imply no commitment on the part of *Banco de la República* or its Board of Directors.

Graph B1.2
Breakdown of the Change in the Trade Balance
(Annual change)

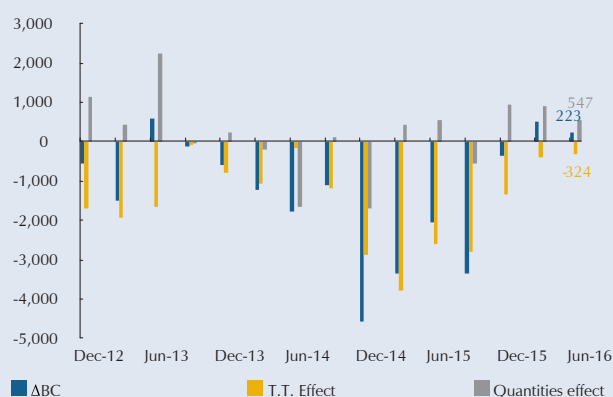
A. National accounts

(Billions of Colombian pesos)



B. Commerce methodology

(Millions of dollars)



Source: DANE, DIAN; Calculations by Banco de la República

Panel B uses export and import figures provided by DIAN. They only include trade in goods, measured in dollars. As an approximation to the price variables, foreign trade prices indexes were employed according to the method proposed by Garavito, López, and Montes (2011).¹ Using these indices, the series of real exports and imports were constructed to approximate the effect of changes in quantities.

First, it is important to point out that calculations of the annual variation in the trade balance, using the

national accounts method, show an increase in the deficit for the first two quarters of 2016, but one that has been declining since the third quarter of last year. In the case of the trade method, the figures show a reduction of the deficit in 2016 pertaining to positive changes in the trade balance during the first half of the year.

However, in both cases, the results of the exercises indicate the correction in the deficit during the first two quarters of 2016 is explained by the effect of changes in quantities. In fact, the breakdowns suggest the impact of the country's terms of trade contributed negatively to the trade deficit in both quarters. For example, if the trade methodology is used, the trade deficit in the second quarter of 2016 decreased by USD223 million compared to the same quarter of 2015. However, the effect of the deterioration in the country's terms of trade² during that period was negative. With all else being constant, this widened the trade deficit by USD324 million. Finally, the effect of changes in the quantities exported and imported helped to close out the deficit at USD547 million, offsetting and overcoming the negative impact of the country's terms of trade on the trade balance.

In summary, the calculations outlined in this section suggest the correction in the trade deficit during the first two quarters of 2016 would be due mainly to a change in the quantities exported and imported, which would be consistent with a decline in the real demand for imports. This also would indicate that, although a component of real exports continues to decline, as implied by some figures in the first half of the year,³ fewer real imports of goods and services seem to overcome this effect and help to close the external imbalance.

1 Garavito, A., López, D. y Montes, E. (2011). "Aproximación a los índices de valor unitario y quantum del comercio exterior colombiano," No. 680, Borradores de Economía, Banco de la República.

2 Despite their partial recovery, the country's terms of trade were still lower by the second quarter of 2016 than those observed a year earlier.

3 During the first half of 2016, the quantities of mining exports and those from the rest of the group (constructed according to the method proposed by Garavito et al., 2011) showed reductions with respect to the same period the year before.

II. DOMESTIC GROWTH: THE CURRENT SITUATION AND SHORT-TERM OUTLOOK

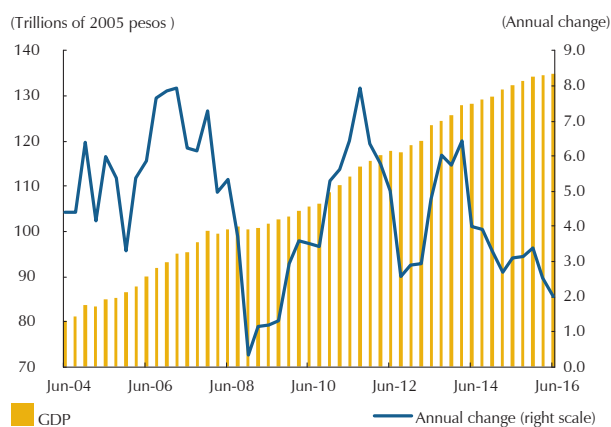
The Colombian economy in the second quarter continued to adjust to the terms-of-trade shock and the reduced momentum in national income. It grew by 2.0%, which was less than expected.

As for the different branches of the economy, the highlight was the momentum in industry and financial services. In contrast, there was a sharp contraction in mining.

The figures at hand for the third quarter suggest the economy would have grown at a less of a pace than in the first half of the year. An additional slowdown in domestic demand is expected.

A. GDP PERFORMANCE DURING THE SECOND QUARTER OF 2016

Graph 18
Gross Domestic Product
(Seasonally adjusted)



Source: DANE; calculations by Banco de la República.

According to the latest GDP figures published by the National Bureau of Statistics (DANE), the Colombian economy grew at an annual rate of 2.0% during the second quarter of 2016 (Chart 18), which is below the mid-point of the forecast range outlined in the previous edition of this report (between 2.0% and 3.2%, with 2.6% being the most likely rate). This growth represented an additional slowdown with respect to the first quarter of the year. The increase between quarters came to 0.2%, which implies an annualized quarterly change of 0.8%.

This slowdown suggests the Colombian economy continued to adjust to lower terms of trade and to

The Colombian economy continued to adjust to lower terms of trade and less gross national income.

the reduction in gross national disposable income that began with the drop in oil prices. In addition, this scenario coincided with weaker than expected economic performance by the country's major trading partners and with stable but low prices for Colombian commodity exports compared to the same quarter in 2015.

The slowdown also occurred in a context marked by temporary supply shocks in the transportation sector, due to the truckers' strike that began on June 6 and lasted until July 22. This event brought pressure to bear on consumer prices (particularly on the food basket) and added to the pressure generated by the lagging effects of *El Niño* weather, which would have further undermined the purchasing power of household income, forcing changes in household consumption and investment plans. Moreover, although the nominal exchange rate remained stable throughout the quarter, the effects of cumulative peso depreciation would have continued to boost the relative price of tradable goods versus non-tradables. This is consistent with the real adjustment observed in the import-intensive component of domestic demand.

All of this had consequences for the momentum in domestic demand, which also slowed compared to what it was in previous quarters. As happened in early 2016, the largest adjustments were in gross capital formation. Aggregate consumption also grew less than in the past (Table 4).

When analyzing the components of demand in detail, one sees private consumption weakened. In fact, the sustained increases in the price level of the consumer basket up to June would have diluted the purchasing power of household income, thereby reducing the consumption of non-durables, semi-durables, and services. Durable goods consumption contracted at a rate similar to that of the first quarter. This is consistent with the depreciation of the peso against the dollar and with tighter terms for domestic financing. Government consumption expanded at a somewhat higher rate than in previous months, although below the rate observed for the aggregate in 2015.

Investment declined during the second quarter, in annual terms, adding to the reduction observed at the start of the year, and can be attributed, in large part, to the end of the commodity price boom and to depreciation of the peso. It also is consistent with the adjustment in the current account deficit (Chapter I), as evidenced by the drop in items such as transport equipment and machinery, and equipment. Investment in construction (both structures and civil works) performed poorly, largely because of a high base of comparison for the same period in 2015.

Household consumption slowed, particularly spending on durable goods.

Table 4
Real Annual GDP Growth, by Type of Expenditure

	2015				2015	2016	
	I Qtr.	II Qtr.	III Qtr.	IV Qtr.	Full year	I Qtr.	II Qtr.
Total consumption	4.4	3.7	4.3	3.3	3.9	3.1	2.5
Household consumption	4.6	3.7	4.3	2.8	3.8	3.5	2.6
Non-durable goods	4.1	4.0	4.7	3.7	4.1	3.7	3.4
Semi-durable goods	5.8	2.9	6.9	3.1	4.6	3.9	3.0
Durable goods	10.3	2.7	(7.0)	(12.0)	(2.0)	(4.8)	(4.8)
Services	4.4	4.1	4.5	3.8	4.2	4.3	2.9
End government consumption	2.2	2.3	3.1	3.8	2.8	1.6	2.0
Gross capital formation	5.2	1.3	3.9	0.3	2.6	(2.6)	(2.3)
Gross fixed capital formation	5.9	4.3	1.0	0.1	2.8	(3.0)	(1.8)
Agriculture, forestry, hunting and fishing	(6.8)	(1.9)	0.9	2.5	(1.5)	(0.7)	0.0
Machinery and equipment	0.7	(1.9)	(0.2)	(5.5)	(1.8)	(10.3)	(5.5)
Transport equipment	29.6	12.8	8.6	(5.9)	9.4	(18.9)	(6.9)
Construction and structures	2.1	10.1	(8.2)	8.1	2.7	11.5	2.8
Civil works	3.5	6.2	7.0	4.2	5.2	0.4	(0.4)
Services	1.2	4.7	(3.7)	1.5	0.9	1.9	0.3
Domestic demand	4.3	3.3	4.3	2.5	3.6	1.7	1.3
Total exports	4.5	1.2	(3.9)	(3.9)	(0.7)	2.6	3.6
Total imports	9.9	1.2	8.4	(3.1)	3.9	(0.8)	0.7
GDP	2.7	3.1	3.1	3.4	3.1	2.5	2.0

Source: DANE; calculations by Banco de la República

Net exports contributed positively to GDP growth, although less so than in the first quarter. Growth in foreign sales accelerated, mainly due to good performance for sales of non-traditional goods and services. In contrast, commodity exports declined in real terms, particular those from the mining and energy sector. Real imports, on the other hand, registered mediocre performance, even despite a low base of comparison with respect to the same quarter last year. The biggest setbacks were in imports of capital goods and consumer durables, reflecting the behavior of the import-intensive component of domestic demand. On the supply side, the sectors experiencing the most economic growth during the second quarter of 2016 were, in order of importance, industry (+ 6.0%) and financial services (+ 4.6%), (Table 5). In contrast, activities related to agriculture (-0.1%), the supply of electricity, gas and water (-0.8%) and mining (-7.1%) contracted. In addition, transport (+ 0.1%) and trade (+ 1.4%) showed weak performance. It is important to point out that sectoral performance was influenced by the delayed effect of *El Niño* weather, and by the supply shock caused by the truckers' strike, which began in June lasted almost a month and a half.

Once again, industry outperformed the economy as a whole, largely because of the increase in oil refining (28.8%). Its aggregate value has increased

Table 5
Real Annual GDP Growth, by Branch of Economic Activity

	2015				2015 Full Year	2016	
	I Qtr.	II Qtr.	III Qtr.	IV Qtr.		I Qtr.	II Qtr.
Agriculture, forestry, hunting and fishing	2.2	2.4	3.0	5.8	3.3	0.7	-0.1
Mining and quarrying	0.4	4.2	-0.5	-1.5	0.6	-4.6	-7.1
Manufacturing industry	-2.0	-0.1	3.2	3.9	1.2	5.3	6.0
Electricity, gas and water	2.5	1.6	3.8	3.8	2.9	2.9	-0.8
Construction	3.1	8.1	0.2	4.6	3.9	5.2	1.0
Structures	1.4	9.0	-7.9	7.1	2.1	10.9	2.8
Civil works	4.7	6.5	7.1	3.2	5.4	0.4	-0.4
Commerce, repairs, restaurants and hotels	4.6	3.5	4.7	3.8	4.1	2.7	1.4
Transport, storage and communication	2.6	0.4	2.2	0.7	1.4	1.8	0.1
Financial, real estate and corporate services	4.8	3.8	4.2	4.3	4.3	3.8	4.6
Social, community and personal services	2.4	2.5	3.4	3.5	2.9	1.7	2.3
Subtotal –value added	2.5	2.9	3.0	3.4	3.0	2.5	1.9
Taxes minus subsidies	4.1	4.0	4.6	3.4	4.0	2.3	2.8
GDP	2.7	3.1	3.1	3.4	3.1	2.5	2.0

Source: DANE; calculations by Banco de la República.

substantially now that Reficar is operating. The facility was shut down a year ago, while being modernized and expanded. Excluding refining, the remaining industries grew 2.9% annually, with beverages (14.2%) and metallurgical products (8.6%) taking the lead.

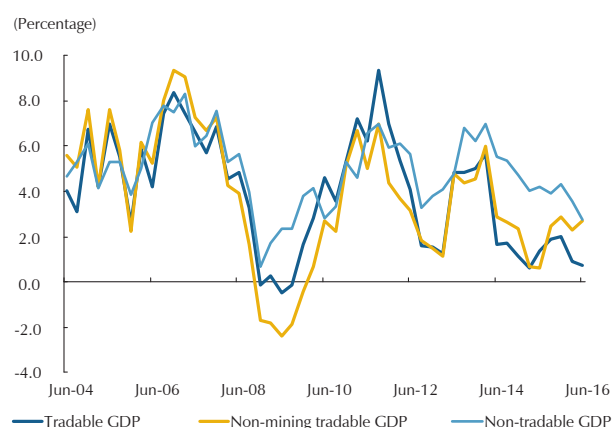
Financial services were another sector that showed a great deal of momentum, with nearly a 20% share of GDP. The sector aggregate rose 4.6%, largely because of an increase of 10.1% in financial intermediation and a 3.1% increase in real estate activities and home rentals.

In contrast, agricultural was down 0.1% year-on-year, given an annual decline of 3.2% in agricultural products other than coffee, specifically temporary and permanent crops, which contracted by 6.4% and 2.6%, in that order. Among the former, it is important to mention the drop in vegetable matter (-38.2%) and in the group comprised of legumes and tubers (-5.7%); as for permanent crops, the most representative setbacks were in sugarcane (-8.4%), fruits and nuts (-7.5%), and oleaginous seeds and fruits (-7.2%). On the other hand, the aggregate value of coffee activity and the live animal group rose by 0.5% and 3.4%, respectively. The truckers' strike towards the end of the quarter could have had a negative impact on agricultural performance, which might become more pronounced in the third quarter, since the strike ended in July.

Mining during the second quarter saw an annual contraction in sectoral production for the fourth time in a row. With a reduction of 7.1%, it is the branch of the economy that has declined the most so far this year. The outcome, on this occasion, is due mainly to the sharp drop in oil production (-11.2%) and the decline in non-metallic minerals (-2.8%).

Supplies of electricity, gas and water also deteriorated, contracting 0.8% during the second quarter of the year. The way this sector performed is partly due to the impact of *El Niño* weather and to the water and energy saving measures dictated during that period. In addition and directly related to the truckers' strike, transport activity experienced almost no growth (0.1%).

Graph 19
GDP in the Tradable, Non-mining Tradable and Non-tradable Sectors
(Annual growth)



Source: DANE; calculations by Banco de la República.

Tradable and non-tradable GDP slowed in this environment. The former went from 0.9% annual growth to 0.7% between the first and second quarters of 2016. If mining is excluded, GDP in the other tradable sectors rose 2.7% (versus 2.3% the quarter before). Non-tradable GDP was up by 2.8% in the second quarter of 2016, after posting 3.6% growth in the first three months of the year (Chart 19).

B. THIRD-QUARTER GDP IN 2016

The Colombian economy would have continued to adjust to less income and lower terms of trade at the start of the second half of 2016, and particularly during the third quarter. The figures at hand suggest growth during that period would have been less than it was in the first half of the year. In addition to this slowdown, the supply shock caused by the truckers' strike, which was felt mainly in July, was stronger than expected and only partially reversed in August.

During those months, the Colombian economy continued to be affected by extremely weak foreign demand, which was less than expected, and by terms of trade that recovered somewhat in recent months but were still at relatively low levels and below those observed, on average, for 2015.

The adjustment in domestic demand during the third quarter would have been mainly the result of less gross capital formation, which would have been accompanied by a further slowdown in total consumption. On the other hand, net exports would have contributed to the growth in output, largely

because of the significant drop in imports, suggesting the economy has continued to substitute part of its external supply with domestic production.

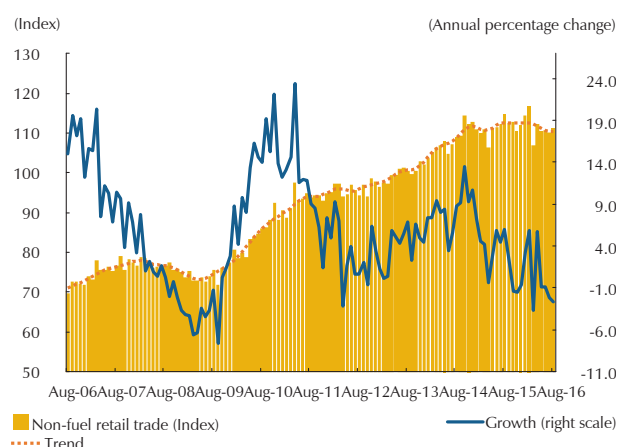
These forecasts are based on information extracted from the results of short-term indicators. In August, real retail sales (excluding fuel) were down 2.7% in the DANE Monthly Retail Trade Survey, (MRTS) compared to the same month last year. The July-August quarterly aggregate saw an annual decline of 2.4%, not performing as well as in the second quarter, when the

index rose 1.2% (Graph 20). If vehicle sales are discounted, the index for the rest of the aggregate contracted 2.1% annually during the same month (Graph 21). For the two months, the rate of growth in the series, at 0.4% annually, meant a slowdown when compared to 1.9% in the April-June quarter.

The automotive and motorcycle sales index in the MRTS fell 5.8% year-on-year in August. The aggregate for the two months registered an annual decline of 16.6%, as opposed to -2.7% during the second quarter. The poor performance of vehicle sales is confirmed by the vehicle registrations reported by the Colombian Automotive Committee,⁷ which point to an annual decline of 14.0% by September. This being the case, the aggregate for the third quarter fell 17.9%, compared to -9.8% in the second quarter (Graph 22). The poor performance of vehicle registrations applied to vehicles for private use (durable consumption) and those for commercial use (investment in transport equipment), being similar in both segments of the market.

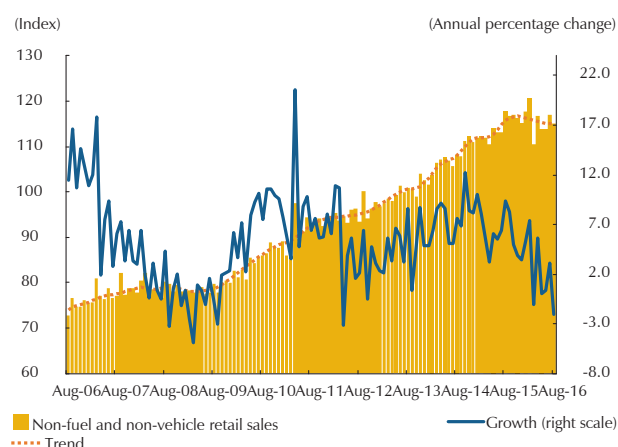
The sluggish performance of retail sales in August was concentrated in durable goods, and although retail sales of semi-durables and non-durables have been more dynamic, they also have slowed compared to previous months. Therefore, if the positive growth in sales of services continues, *Banco de la República's* technical staff expects private consumption to increase during the third

Graph 20
Monthly Retail Trade Survey
(Total Non-fuel Retail Sales, Seasonally Adjusted)



Source: DANE; calculations by Banco de la República.

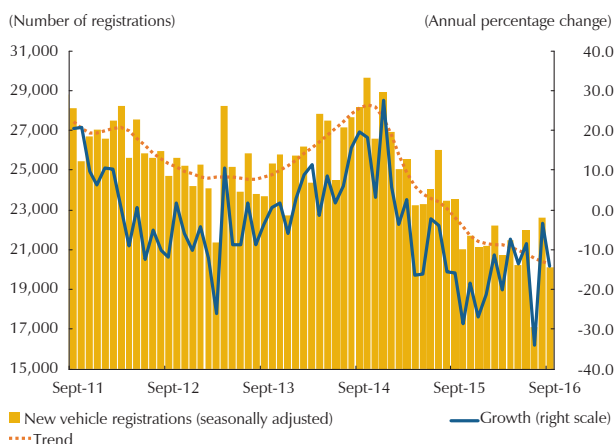
Graph 21
Monthly Retail Trade Survey (Total Non-fuel
and Non-automobile Retail Sales, Seasonally Adjusted)



Source: DANE; calculations by Banco de la República.

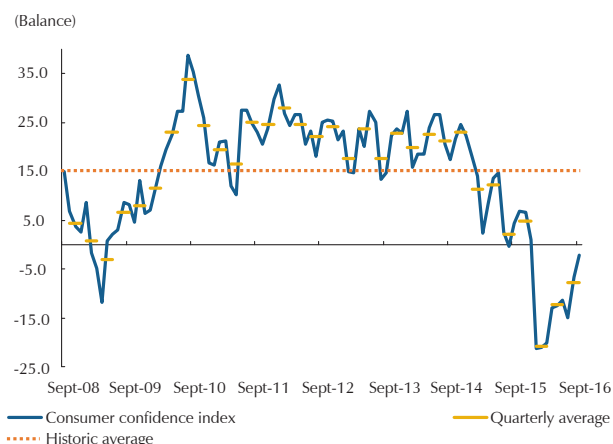
7 The committee is comprised of the National Confederation of Merchants (Fenalco), the National Business Association of Colombia (ANDI) and Econometria S.A., which is a consulting firm.

Graph 22
New Vehicle Registrations
(Seasonally adjusted series)



Source: Colombian Automotive Committee (ANDI, Fenalco and Econometría); calculations by Banco de la República

Graph 23
Consumer Confidence Index and Quarterly Average



Source: Fedesarrollo.

quarter, although less so than in the second quarter (2.6%).

The auxiliary confidence indicators support this forecast. In September, the consumer confidence index compiled by Fedesarrollo rose again. However, it is still below the levels observed a year ago and less than the average calculated for the series since November 2001 (Graph 23). The sales balance in the Monthly Survey of Economic Expectations (MSEE) conducted by *Banco de la República* to August also points in the same direction. Accordingly, the indication is that growth in private consumption throughout the third quarter would have remained below the figure reported for the aggregate in the first half of the year and less than the average for all of 2015.

The slower pace of growth in household consumption anticipated for the third quarter of the year also is supported by a more moderate increase in lending in recent months, in real terms, and by an increase in the transmission of the benchmark interest rate hike to the market. Specifically, the increase in the real consumer loan portfolio and in disbursements is occurring at a pace below their historic averages. In addition, real interest rates (deflated by the consumer price index) continue to increase in the margin. Despite the slowdown in inflation, these hikes represent a constraint to growth in real disposable household income.

The indicators associated with gross fixed capital formation suggest investment (other than in structures and civil works construction) would have fallen at a faster pace between July and September than in the second quarter. The momentum in imports of capital goods up to September, according to DANE and to the National Tax and Customs Authority (DIAN) (registered in real pesos), points to less investment in machinery and transportation equipment during the third quarter of 2016 (Graph 24). The balance of investment expectations in the MSEE for August also remains low, suggesting no improvement in gross fixed capital formation excluding the construction of structures and civil works. This is in a context where low commodity prices would continue to discourage investment in sectors such as oil and mining, and where depreciation of the nominal exchange rate continued

JOB MARKET PERFORMANCE DURING THE THIRD QUARTER OF 2016

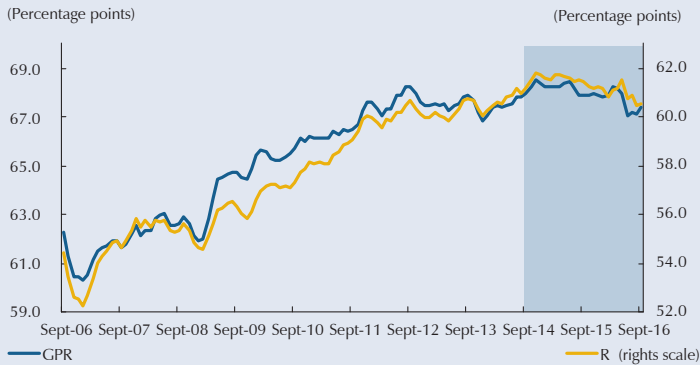
Some of the job market indicators continued to deteriorate in the third quarter of 2016, although less so than expected. In particular, there was an increase in the unemployment rate (UR), which is based on a drop in the employment rate (ER). The fact that there was not more of an increase in the UR was because the overall participation rate also declined somewhat (Graph A).

The UR in the moving quarter ended at September rose with respect to the same period during the previous year, being 9.1% nationwide, 10% in the municipal seats and 9.8% in the thirteen major metropolitan areas. On the other hand, the UR in the rural area declined annually during this period, reaching 5.6% (Graph B).

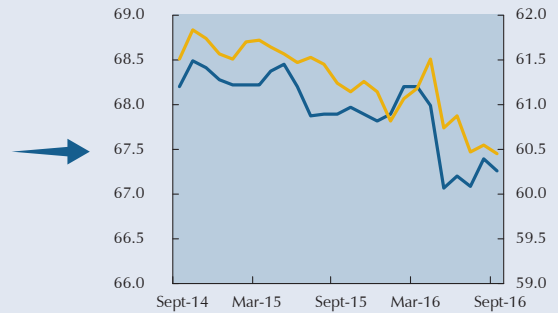
Discounting the seasonal effect,¹ and with the data from the moving quarter ended in September, the UR nationwide and the UR in the thirteen major metropolitan areas continue to show a slight upward trend (Graph C). However, the UR in the thirteen major metropolitan areas has been volatile during the past year, making it difficult to clearly identify its trend.

1 From this report and onwards, we will show some of the seasonally adjusted series published by DANE. They do not differ significantly from those presented in the past.

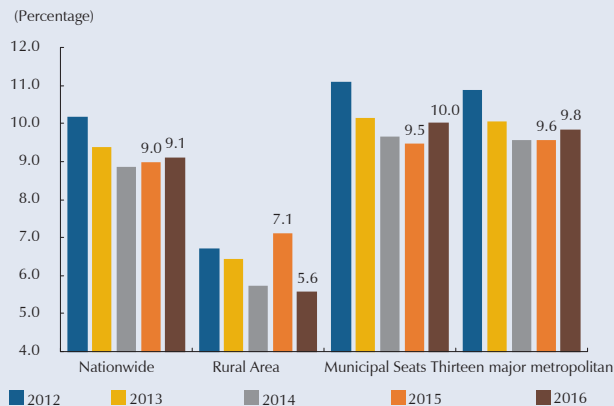
Graph A
Global Participation Rate (GPR) and Employment Rate (ER)
(Seasonally adjusted, thirteen major metropolitan areas)



Source: DANE (GEIH).

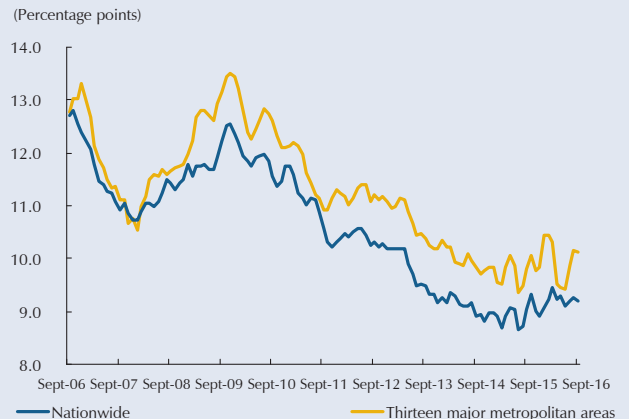


Graph B
Unemployment Rate (July-August-September Moving Quarter)



Source: DANE (GEIH).

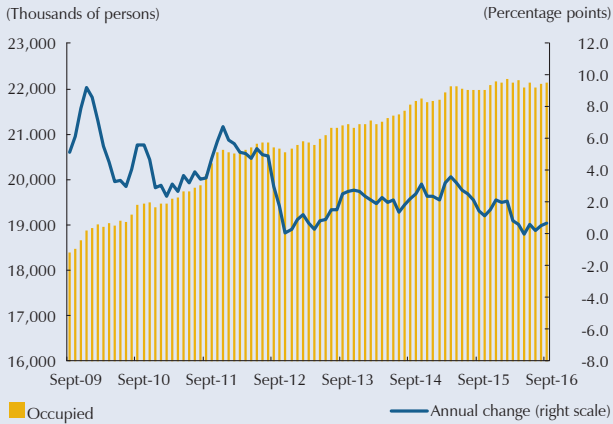
Graph C
Unemployment Rate (UR)
(Seasonally adjusted moving quarter)



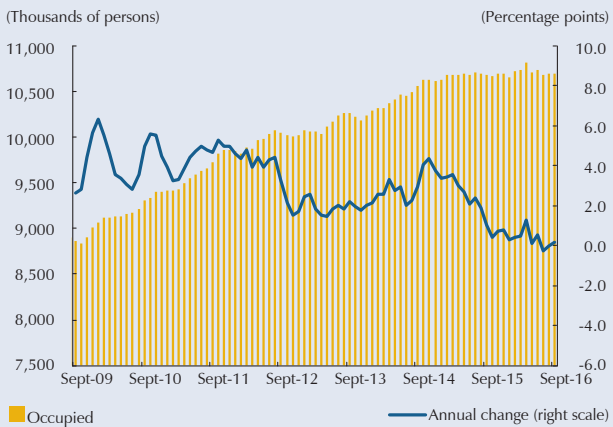
Source: DANE (GEIH).

Graph D
Number of Occupied and Annual Change

1. National Total

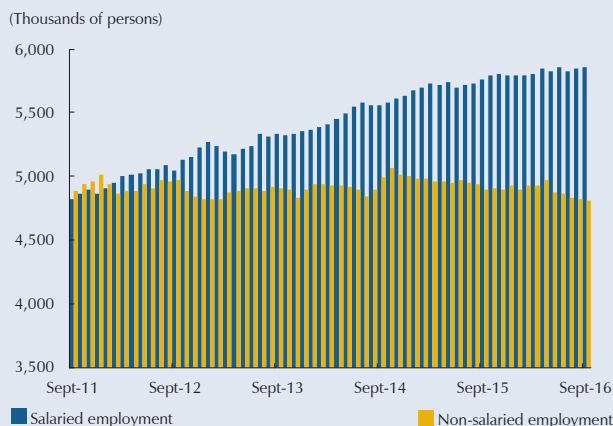


2. Thirteen Major Metropolitan Areas



Source: DANE (GEIH).

Graph E
Employment, by Type of Occupation
(Thirteen major metropolitan areas, seasonally adjusted moving quarter)



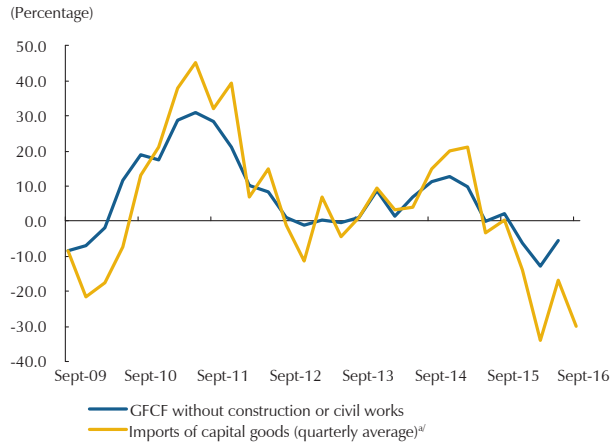
Source: DANE (GEIH); Calculations by Banco de la República

As for the employment rate, its decline is due to less growth in the number of employed persons. During the moving quarter ended in September, it rose at an annual rate of 0.7% nationwide and 0.2% in the thirteen major metropolitan areas (Graph D, panels A and B). In fact, the poor performance of the ER is the result of stagnation in the number of employed, both in the national total and in the thirteen major metropolitan areas; this sluggishness has been ongoing for about nine and twenty months, respectively.

The lower rate of growth in employment nationwide and in the thirteen major metropolitan areas is due to non-salaried workers, since the number of wage earners continued to increase. During the June-September moving quarter, the later grew at an annual rate of 1.7%, while non-wage earners declined by 1.6% (Graph E).

The stagnation in employment is consistent with the slowdown in economic activity, although the deterioration has been less than expected. However, if it continues, the reduced momentum in the job market could become more pronounced.

Graph 24
Imports of Capital Goods for Industry and Transport
Equipment (Real) and GFCF Excluding Building
Construction and Civil Works
(Annual change)



Note: The figure for June 2016 is a projection based on preliminary data obtained from DIAN.
a/ Figures expressed in real terms, as calculated by Banco de la República.
Sources: DANE (national accounts and foreign trade)

to affect decisions to spend on capital goods in the medium- and long term, both in the energy-mining sector and in others.

Aggregate investment in construction is expected to see more growth than the other items that make up GDP. A significant expansion is forecast for civil works, partly due to a low base of comparison in the third quarter of 2015, as well as some recovery in budget performance on the part of local and regional governments during the second half of the year. In contrast, mediocre growth is anticipated for structures, similar to the momentum in cement production and building permits.

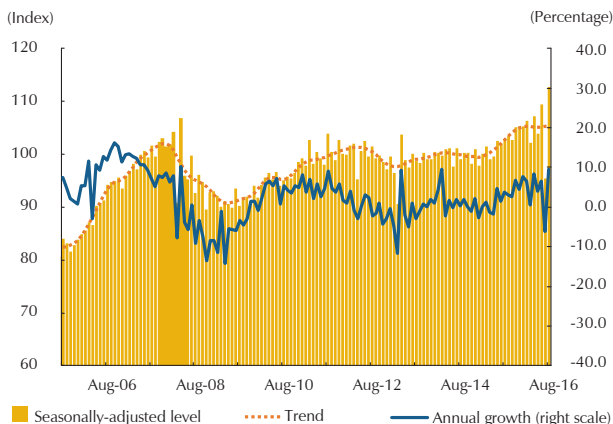
With respect to foreign trade, real exports would have continued to grow during the third quarter, as implied by exports in dollars at September, in constant pesos (particularly non-traditional exports),

and by the good performance anticipated for service exports. The momentum in these two items would have partially offset the projected decline in traditional exports, particularly those from the mining sector. Real imports are forecast to contract sharply. When the figures for imports in dollars are converted to constant pesos, one sees declines in the aggregate for the third quarter that are consistent with the change in demand for imported capital goods and in the consumption of imported durables.

On the supply side, the information at hand also suggests less favorable performance in the third quarter of 2016 compared to the first half of the year. Moreover, with these indicators, one sees a major shock in July because of the truckers' strike, which was offset only in part by the recovery of these indicators in August and September.

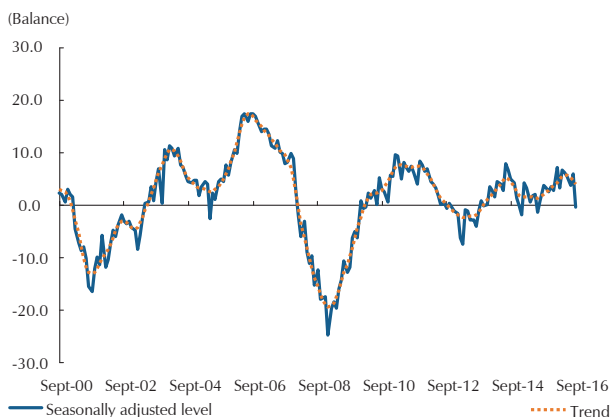
With regard to industrial performance, the supply shock caused by the truckers' strike countered the positive effects of the modernization of Reficar and the impact of accumulated depreciation on tradable items such as clothing, textiles, and leather goods. According to the DANE Monthly Manufacturing Survey (MMS), the manufacturing industry performed remarkably well in August, with 9.4% annual growth, of which 27.9% came from oil refining and another 6.1% from the other manufacturing industries. However, this failed to compensate fully for the loss suffered the month before, when the truckers' strike caused a 6.2% drop in industrial production during July (oil refining was down 11.9% and the rest of industry, -9.7%) (Graph 25). Moreover, the demand for energy in the industrial sector declined by 2.8% in September, suggesting the momentum in industrial production was low

Graph 25
Total Real Industrial Production
 (Seasonally adjusted series, trend component
 and annual growth)



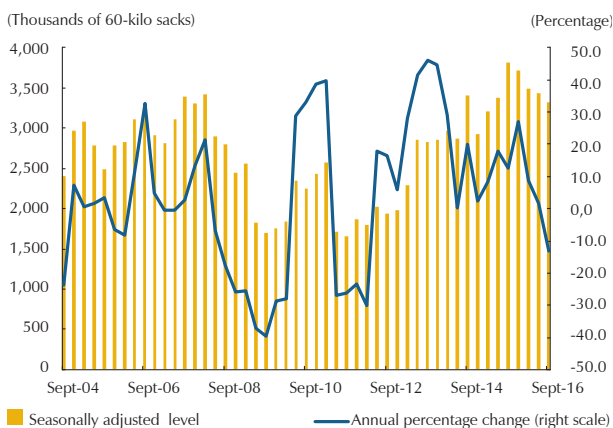
Source: DANE; calculations by Banco de la República.

Graph 26
Balance of the Industrial Confidence Index
 (With seasonally adjusted series)



Source: Fedesarrollo, calculations by Banco de la República.

Graph 27
Coffee Production
 (Quarterly and annual growth)



Sources: Federación Nacional de Cafeteros; Calculations by Banco de la República

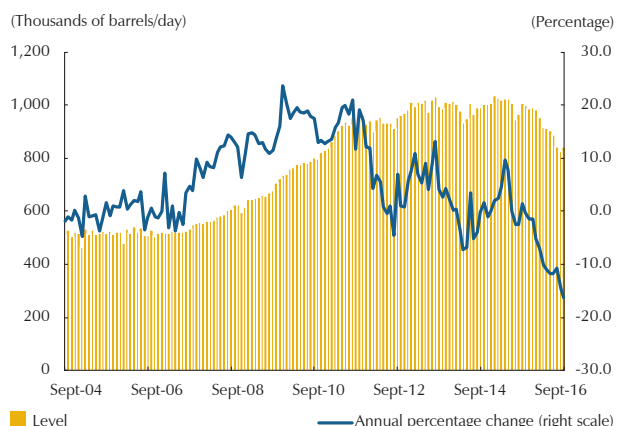
that month, given the close correlation that exists between these two variables.

Taking into account the information up to September, the Fedesarrollo Business Opinion Survey for the industrial sector showed some deterioration in the indicator for orders and in inventories. This confirms the weakness denoted by industry's demand for energy. The expectations indicator also dropped significantly in September. All this led to a decline in industrial confidence during the third quarter, compared to the first half of the year (Graph 26). However, in the Business Opinion Survey conducted by the Colombian National Association of Entrepreneurs (ANDI), industrialists mentioned problems such a short supply of drivers and trucks and an increase in storage costs, in shipping charges and in inventories of finished goods, among other circumstances, that affected the normal development of manufacturing activity. All this reflects the negative impact of the truckers' strike mentioned earlier.

According to the National Federation of Coffee Growers, production came to 1,034,000 60-kilo bags in September, which amounts to an annual decline of 2.3%. In the July-September period, production dropped by 12.2%, following 1.1% and 8.9% growth in the second and first quarters, respectively (Graph 27). On the other hand, the slaughter of cattle continued to decline at an annual rate of 8.7% in August. The reduction during the July-August period was close to 14%, having fallen 1.5% during the second quarter. Consequently, the sector is not expected to perform favorably in the third quarter.

Finally, the figures for oil production confirm the worsening situation in the mining sector. Crude oil production in September came to 843 mbd, which implies a significant annual decline of 16.3%. In quarterly terms, production in the July-September period averaged 838 mbd and was down 13.9% annually (Graph 28).

Graph 28
Oil Production
(Level and annual growth)



Sources: Agencia Nacional de Hidrocarburos (ANH); Calculations by Banco de la República

Considering all these factors, annual GDP growth in the third quarter of 2016 is likely to slow even more. Therefore, the technical staff at *Banco de la República* expects economic growth to be somewhere between 1.0% and 2.2%, with 1.6% being the most likely figure. The breadth of the forecast range is consistent with the uncertainty related to the performance of government consumption and civil works, among other factors.

Box 2

DIAGNOSIS OF PRODUCTION AND FOREIGN TRADE IN THE INDUSTRIAL MANUFACTURING SECTOR

Mariana Escobar V.
Juan Pablo Cote B.
Nicolás Martínez C.*

The behavior of production and foreign trade in the country's industrial manufacturing sector was analyzed in previous editions of this report, with special emphasis on how they react to changes in the exchange rate for the dollar. It also was suggested that the recent depreciation of the peso could have a positive effect on industrial production in two ways. First, import substitution with domestic production could occur, inasmuch as imports have become more expensive and the demand for them has declined as a result. Secondly, increasing the peso income of exporting firms generates an incentive for them to increase industrial production with an eye towards more sales abroad.

However, so far this year (with data up to August), the annual figures for growth in industrial production in the various branches of the economy remain mixed. According to the Monthly Manufacturing Survey, branches such as coking, oil refining and fuel blending, the production of beverages and the manufacture of processed metal products grew significantly, while production in sectors such as leather tanning and retanning, and the manufacture of (other types of) transport equipment experienced major setbacks (Table B2.1). In fact, growth in non-refining industrial production by August 2016 came to a modest 1.4%.

The same table also shows the annual changes in exports and imports in dollars, in current pesos and in constant or real pesos. The latter were constructed by deflating the nominal values in pesos for each branch of industry, using the export and import producer price indexes (PPIs)¹ pre-

pared by DANE. This exercise allows for a better estimate of the real variations in the trade series than the one obtained if the changes in volumes sold are used, since this last approach encompasses a broad mix of products, even if the changes are calculated within the same branch of the industry.

An initial look at the figures in Table B2.1 shows the changes in exports and imports in current pesos exceed the variation in the dollar series. This is due to depreciation of the exchange rate (which was more pronounced as of the second half of 2015).² In fact, for some sectors, one sees that even though exports in dollars fell during this period, exports in pesos grew. Bakery products are an example.

Furthermore, a significant amount of the growth in exports in current pesos coincides with the rise in real industrial production (see the gray shaded area in Table B2.1). However, when examining the variation in real terms, one does not see a systematic relationship between production growth and positive variations in external sales. In fact, this is the case with only four items, which account for 18.5% of industrial production³ (the manufacture of leather goods; coking, oil refining and fuel blending; the manufacture of glass and products thereof; and the manufacture of processed metal products).

The information in Table B2.1 also shows industrial production increased and imports in real terms decreased (shaded in yellow) in 16 of the 39 branches analyzed. This would suggest possible import substitution in these sectors, which account for 31.4% of industrial production. The production of certain foodstuffs, the manufacture of leather goods, the production of chemical products and industries producing metallic products stand out, among others. Industry as a whole, excluding

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1 The PPI export/import series are not available for three branches in the case of exports (printing activities, the manufacture of auto bodies for motor vehicles, trailers and the manufacture of other types of transport equipment), and one branch in the case of imports (printing activities). As a result, the PPI for produced and consumed goods was used as the deflator of the nominal trade variables.

2 The average exchange rate depreciated by nearly 20% between January and August 2016 with respect to the same period in 2015.

3 This is according to the weighted values in August 2016, based on the DANE Industrial Production Index.

Table B2.1

Annual Year-to-date Growth in Industrial Manufacturing Output, Exports and Imports. January-August 2016

Branches	Industrial Production in Real Pesos (Percentage)	Exports (Percentage)			Imports (Percentage)		
		Value in dollars	Value in current pesos	Value in real pesos	Value in dollars	Value in current pesos	Value in real pesos
Processing and preserving of meat, fish, crustaceans and mollusks	2.9	-11.2	6.4	-4.1	-13.6	3.7	-8.6
Manufacture of oils and fats of vegetable and animal origin	-4.4	13.2	33.2	6.8	-1.8	16.1	6.7
Manufacture of dairy products	1.6	-62.3	-57.9	-65.5	57.6	93.0	64.5
Manufacture of milled grain products, starches and derivatives thereof	7.7	-25.6	-11.2	-23.4	-13.1	4.9	-0.6
Coffee processing	-1.6	-19.3	-3.3	-10.1	-22.7	-6.3	-23.2
Preparation of sugar and panela	-10.1	-33.1	-20.3	-40.8	278.4	357.9	189.0
Manufacture of bakery products	1.7	-4.6	14.6	-2.2	-20.1	-4.5	-13.7
Manufacture of cocoa, chocolate and confectionery products	-7.8	17.0	44.8	22.8	8.4	28.6	16.7
Manufacture of other food products n.c.p.	2.4	-7.6	10.6	-6.1	1.0	20.1	4.7
Manufacture of processed foods for animals	-0.1	19.8	42.5	29.6	-0.7	19.3	9.2
Manufacture of beverages	11.6	-26.6	-13.5	-15.0	41.5	66.0	42.3
Spinning, weaving and finishing of textile products	-1.7	-28.7	-15.3	-28.1	-0.6	17.2	5.8
Manufacture of clothing and wearing apparel	-2.1	-17.3	-1.6	-14.6	-26.1	-11.8	-19.4
Leather tanning and retanning; retanning and dyeing hides	-19.6	-39.2	-26.2	-24.3	7.4	26.5	13.1
Manufacture of leather travel articles, handbags and the like	7.2	-9.5	8.0	0.1	-19.7	-4.2	-14.9
Manufacture of footwear	7.5	-15.9	0.7	-8.0	-17.9	-2.4	-7.4
Transformation of wood and products thereof	-0.5	-2.4	16.8	2.6	-13.3	4.1	-14.3
Manufacture of paper, cardboard and products thereof	-1.2	-32.3	-19.0	-30.9	-11.1	6.2	-8.8
Printing activities	4.3	-12.9	5.4	-26.8	3.1	24.0	-13.9
Coking, oil refining, and blending of fuels	20.8	24.6	48.1	51.9	-23.9	-9.2	3.4
Manufacture of basic chemical substances and products thereof	-4.4	-13.8	2.9	-9.3	-15.6	0.4	-8.1
Manufacture of other chemical products	1.8	-11.4	4.3	-9.5	-12.6	4.2	-6.2
Manufacture of soaps and detergents, perfumes and toiletries	2.5	-21.0	-5.7	-15.0	-16.0	0.2	-3.8
Manufacture of pharmaceuticals and medicinal chemical substances	2.5	-9.7	7.9	-5.8	-10.9	6.0	-0.9
Manufacture of rubber products	-7.0	-45.6	-35.5	-33.4	-16.9	-0.4	-10.4
Manufacture of plastic products	-0.5	-11.9	5.0	-11.1	-14.8	1.6	-9.3
Manufacture of glass and glass products	8.3	2.7	22.7	14.3	-18.7	-3.0	-14.1
Manufacture of non-metallic mineral products n.c.p.	-3.1	-11.2	5.7	-3.7	-4.7	13.6	-1.6
Basic iron and steel industries	2.3	-31.9	-18.9	-8.9	-34.2	-21.1	-25.4
Basic precious and non-ferrous metal industries	8.4	-2.5	15.3	-7.0	-18.7	-2.4	-9.3
Manufacture of products made of metal	10.6	0.4	19.5	3.9	-21.3	-5.6	-15.5

Table B2.1 (Continued)
Annual Year-to-date Growth in Industrial Manufacturing Output, Exports and Imports. January-August 2016

Branches	Industrial Production in Real Pesos (Percentage)	Exports (Percentage)			Imports (Percentage)		
		Value in dollars	Value in current pesos	Value in real pesos	Value in dollars	Value in current pesos	Value in real pesos
Manufacture of electrical appliances and equipment	-7.0	-8.4	9.4	-8.4	-22.2	-7.2	-18.5
Manufacture of machinery and equipment n.c.p.	-0.9	9.0	30.9	10.9	-23.7	-9.0	-22.5
Manufacture of motor vehicles and their engines	2.0	-9.0	7.6	-5.0	-20.7	-5.7	-13.4
Manufacture of bodywork for motor vehicles, automobiles and trailers	-11.7	11.1	37.9	32.1	-27.9	-13.5	-28.1
Manufacture of parts, pieces (auto parts) and accessories (luxury) for vehicles	-9.8	-33.9	-21.1	-32.3	-3.3	15.3	-2.7
Manufacture of other types of transport equipment	-15.7	38.8	60.7	36.8	-63.0	-54.9	-60.8
Manufacture of furniture, mattresses and mattress bases	4.6	-9.1	8.8	-7.3	-20.8	-5.4	-14.1
Other manufacturing industries	0.1	-7.2	9.9	-3.9	-13.6	2.1	-7.5
Total non-refining industry	1.4	-12.9	3.9	-8.6	-21.2	-5.9	-15.8
Total industry	4.5	-8.8	8.7	-1.3	-21.5	-6.2	-13.7

n.c.p. : not classified previously

Note: In the case of exports, gray shading indicates the branches where there was growth in industrial production and exports increased. In the case of imports, the yellow shading denotes the branches where industrial production grew and imports declined.

Source: DANE; Calculations of the Bank of the Republic

refining, experienced moderate growth in real production, and real imports declined.

On the other hand, Graph B2.1 shows dispersion diagrams of trade versus production, both in real terms, obtained from the data in Table B2.1. The diagrams do not show a clear relationship between the values for growth in the trade variables and those for industrial production. Although, in the case of exports, it is evident the increase in real exports could be correlated positively with the change in actual production. However, in estimating the correlations for these variables, none of them were found to be statistically significant (at 10%), even though the increase in real exports and the growth in industrial production have a positive correlation, and the growth in real imports and the increase in industrial production have a negative correlation.

Following this line of analysis, an additional cross-correlation exercise compatible with previous ones was done, using monthly data, to estimate the correlation between the real industrial production index and real exports and imports between January 2015 and August 2016. This is a period of sharp peso depreciation and is compatible with previous exercises (Table B2.2).

In thirteen branches of industry where real production increased (according to Table B2.1), a positive correlation was found (significant to 10%) between real exports and industrial production (blue shading). This was calculated with monthly data from each branch of industry and shows the increase in production in these branches is associated, to some extent, with the rise in exports.⁴ Branches such as coking, petroleum refining and fuel blending, and the manufacture of footwear stand out, among others, and account for 38.4% of domestic production.

As for imports, in ten branches of industry where production increased (they represent 21.3%), a significant negative correlation of 10% was found between foreign purchases of goods and industrial production (yellow shading). This helps to reinforce the hypothesis of import substitution in these branches of industry. Once again, the manufacture of foodstuffs, leather goods,

4 A positive correlation could also be observed in the case where both series (industrial production and exports) show declines that are systematically linked. Therefore, these calculations are only an indication of an increase in production related to an increase in exports. The same is true of imports, since negative correlations could also occur when imports increase and industrial output drops (accordingly, a negative correlation is not an unequivocal sign of import substitution).

chemical products, and industries producing metallic goods are the cases that stand out.⁵

On the other hand, this same exercise for the aggregate of the manufacturing industry (total industry and total industry without refining) indicates, in real terms,

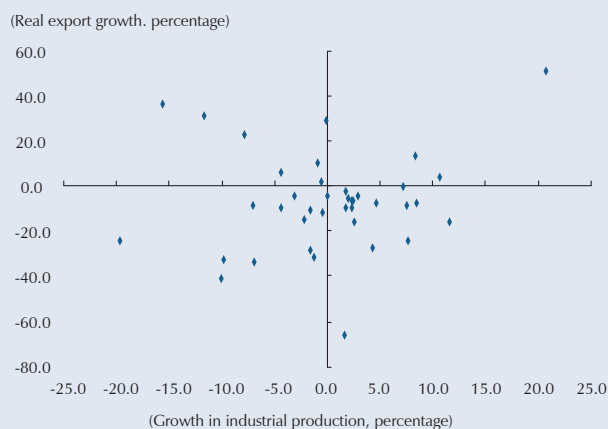
5 These exercises do not consider the order in which these processes can occur (increase in exports / decline in imports and growth of industrial production). For example, a negative correlation between industrial production and imports, regardless of the order in which the movements occur in the series in question, is considered as evidence of import substitution. A more rigorous analysis would consider the causality between such movements.

that industrial production grows, exports also grow, and imports decline. However, the disaggregated analysis of cross-correlations by branches of industry shows depreciation has no such effect on the momentum in production and international trade for a significant number of them.

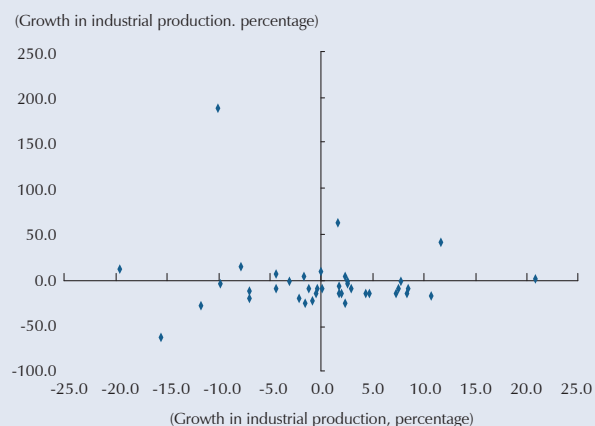
In summary, it is possible to say the exercises presented in this section suggest import substitution has occurred in certain sectors of Colombian manufacturing, although they do not allow us to conclude this has happened in a generalized way. At the same time, there is evidence that depreciation against the dollar in 2015 has boosted production for export in some branches of Colombian industry. Monitoring these exercises in the future will allow us to follow up on the performance of production and international trade, and on how they relate to changes in the exchange rate.

Graph B2.1
Dispersion Diagrams for Trade by Industry Branches versus Production in Real Terms
(Annual changes, accumulated figure for January-August 2016)

A. Exports



B. Imports



Source: DANE; calculations by Banco de la República.

Table B2.2
Cross-correlations between the Real Industrial Production Index versus Real Exports and Imports,
January 2015 through August 2016

Branches	Exports vs. Industrial Production	Imports vs. Industrial Production
Processing and preserving of meat, fish, crustaceans and mollusks	0.63 (0) ^{a/}	-0.50 (-6) ^{a/}
Manufacture of oils and fats of vegetable and animal origin	0.31 (4)	-0.43 (-1) ^{a/}
Manufacture of dairy products	0.37 (0)	-0.48 (1) ^{a/}
Manufacture of milled grain products, starches and derivatives thereof	-0.35 (-5)	-0.54 (0) ^{a/}
Coffee processing	0.43 (-2) ^{a/}	0.40 (5) ^{a/}
Preparation of sugar and panela	0.66 (-1) ^{a/}	-0.47 (-2) ^{a/}
Manufacture of bakery products	0.51 (-5) ^{a/}	-0.28 (-2) ^{a/}
Manufacture of cocoa, chocolate and confectionery products	0.31 (6)	-0.35 (-3) ^{a/}

Table B2.2 (Continued)
Cross-correlations between the Real Industrial Production Index versus Real Exports and Imports,
January 2015 through August 2016

Branches	Exports vs. Industrial Production	Imports vs. Industrial Production
Manufacture of other food products n.c.p.	0.39 (0) ^{a/}	-0.44 (6) ^{a/}
Processing of prepared animal feed	-0.56 (-1) ^{a/}	0.37 (-6)
Manufacture of beverages	-0.54 (-1) ^{a/}	0.77 (0) ^{a/}
Spinning, weaving and finishing textile products	0.32 (0)	0.56 (0) ^{a/}
Manufacture of clothing and wearing apparel	0.50 (0) ^{a/}	0.44 (0) ^{a/}
Leather tanning and retanning; retanning and dyeing hides	0.66 (1) ^{a/}	-0.30 (-5) ^{a/}
Manufacture of leather travel goods, handbags and the like	0.63 (0) ^{a/}	-0.52 (-1) ^{a/}
Manufacture of footwear	0.68 (0) ^{a/}	0.73 (0) ^{a/}
Transformation of wood and products thereof	0.29 (-2)	0.45 (0) ^{a/}
Manufacture of paper, cardboard and product thereof	0.44 (4) ^{a/}	0.67 (0) ^{a/}
Printing activities	0.34 (5)	0.57 (3) ^{a/}
Coking, oil refining, and blending of fuels	0.80 (0) ^{a/}	0.37 (6)
Manufacture of basic chemical substances and products thereof	0.51 (0) ^{a/}	0.56 (0) ^{a/}
Manufacture of other chemical products	0.61 (-2) ^{a/}	0.70 (0) ^{a/}
Manufacture of soaps and detergents, perfumes and toiletries	0.40 (0) ^{a/}	-0.46 (4) ^{a/}
Manufacture of pharmaceuticals and medicinal chemical substances	0.30 (0)	0.45 (0) ^{a/}
Manufacture of rubber products	0.68 (-1) ^{a/}	0.68 (-5) ^{a/}
Manufacture of plastic products	0.49 (0) ^{a/}	0.67 (0) ^{a/}
Manufacture of glass and glass products	0.43 (0) ^{a/}	-0.49 (-1) ^{a/}
Manufacture of non-metallic mineral products n.c.p.	-0.52 (-3) ^{a/}	0.54 (0) ^{a/}
Basic iron and steel industries	-0.62 (1) ^{a/}	-0.28 (-6) ^{a/}
Basic precious and non-ferrous metal industries	0.48 (2) ^{a/}	-0.44 (-2) ^{a/}
Manufacture of products made of metal	0.60 (0) ^{a/}	0.40 (-1) ^{a/}
Manufacture of electrical appliances and equipment	0.69 (0) ^{a/}	0.55 (0) ^{a/}
Manufacture of machinery and equipment n.c.p.	-0.30 (2) ^{a/}	-0.49 (6) ^{a/}
Manufacture of motor vehicles and their engines	0.58 (-5) ^{a/}	0.56 (0) ^{a/}
Manufacture of bodies for motor vehicles, automobiles and trailers	0.47 (0) ^{a/}	0.35 (0)
Manufacture of vehicle parts, pieces (auto parts) and accessories (luxury)	0.66 (0) ^{a/}	0.41 (0) ^{a/}
Manufacture of other types of transport equipment	-0.52 (5) ^{a/}	0.38 (0) ^{a/}
Manufacture of furniture, mattresses and mattress bases	0.62 (0) ^{a/}	-0.50 (-5) ^{a/}
Other manufacturing industries	0.45 (0) ^{a/}	0.50 (0) ^{a/}
Total non-refining industry	0.69 (0) ^{a/}	-0.56 (-6) ^{a/}
Total industry	0.67 (0) ^{a/}	-0.60 (-6) ^{a/}

n.c.p.: not classified previously

a / Significant at 10%.

Note: In the case of exports, the gray shading denotes the branches where there is growth in industrial production and a significant positive correlation between exports and industrial production. In the case of imports, the yellow shading indicates the branches where there is growth in industrial production and a significant negative correlation between imports and industrial production.

The real industrial production series for total non-refining industry was constructed by discounting coking, oil refining and blending of fuels from the series for total industry, according to their respective weight at August 2016.

The numbers in brackets indicate the lag in the industrial production pertaining to the correlation presented (the one with the highest value in absolute terms).

Source: DANE; calculations by Banco de la República

III. RECENT DEVELOPMENTS IN INFLATION

Annual consumer inflation declined in August and September after having increased during several quarters. Although this break in trend was anticipated in previous editions of the *Inflation Report*, the results by September are somewhat more favorable than was predicted in the last edition.

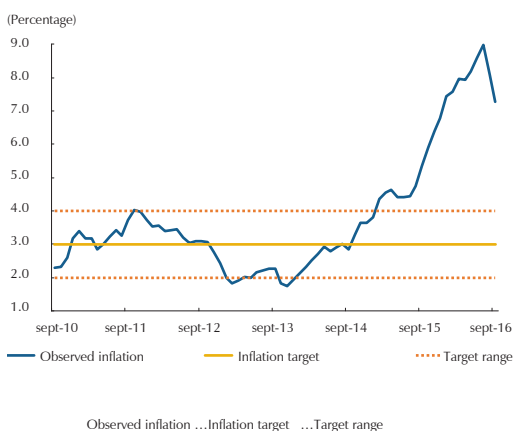
The temporary supply shocks caused by *El Niño* weather and the truckers' strike would be subsiding.

The upward trend in core inflation also broke as of August, although the rate still exceeds the target range set by the BDBR (2.0% to 4.0%).

The impact of accumulated peso depreciation on prices for tradables would have begun to decline in recent months.

As expected, annual consumer inflation in the third quarter broke with the upward trend observed since mid-2015. The upward pressures generated by *El Niño* weather and the truckers' strike began to decline in August, allowing for a reduction in this indicator. As a result, annual inflation was 7.27% by September, which is less than it was in June (8.60%) and below the high point in July (8.97%), (Graph 29). The cumulative price increase during the first nine months of the year came to 5.25%, versus 4.76% for the same period last year.

Graph 29
Total Consumer Inflation



Sources: DANE and Banco de la República.

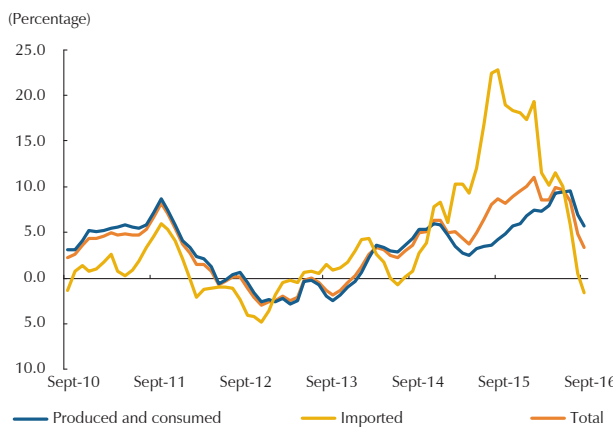
The official figures for inflation in the last few quarters tended to exceed the forecasts developed by market analysts and by the technical staff at *Banco de la República*. However, that situation has reversed since August and the end results have been below the forecasts.

The decline in inflation during the third quarter of 2016 was concentrated in perishable foods, thanks to the supply increases and levels that were observed after overcoming the shocks caused by *El Niño* and the truckers' strike that ended in July. In contrast, processed food and meals outside the

home exerted upward pressure on inflation during that period, mainly because of a decline in the slaughter of cattle, which led to higher beef prices.

The third quarter also saw less of an annual variation in the non-food CPI and its three main components: tradables, non-tradables, and regulated items. These reductions, particularly in tradables, suggest accumulated depreciation of the peso is having less of an impact on changes in consumer prices. The pass-through from depreciation to domestic prices would be starting to run out. The stability of the exchange rate since the end of the first quarter would have contributed to this as well, after it peaked February and experienced moderate appreciation in the weeks thereafter.

Graph 30
PPI, by Origin
(Annual change)



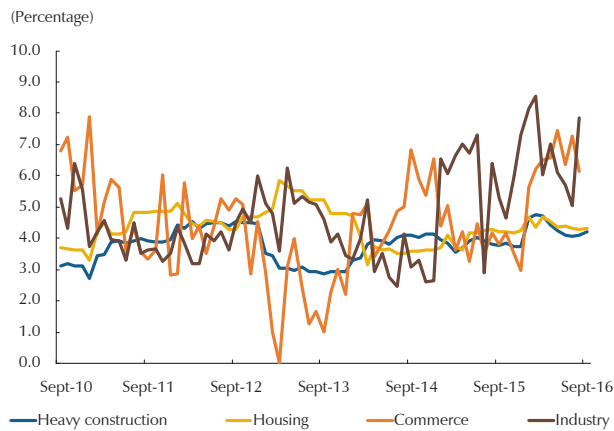
Source: DANE.

A second factor favoring the decline in several components of inflation would be the lower rate of adjustment in non-labor production costs, as suggested by the trend in producer prices. In fact, the annual variation in the PPI for domestic supply (the imported PPI plus the PPI for domestically produced and consumed products) was 3.38% in September, which is significantly less than in June (9.64%), (Graph 30). The way the exchange rate behaved as of March, with its effect on the imported PPI (which fell from 9.99% in June to -1.60% in September), also contributed significantly to the decline in annual producer price inflation. Moreover, the PPI for domestically produced and consumed products (which went from 9.49% in June to 5.70% in September) contributed to the reduction in producer price inflation, particularly through the downward pressure that began to come from prices for agricultural goods and, to a lesser extent, from the behavior of the PPIs for industry and mining.

In addition, there has begun to be less cost pressure in terms of energy prices. The decline in the annual variation in the regulated CPI is associated with lower hydroelectric and thermal generating costs, thanks to the recovery in the level of water in the country's reservoirs after *El Niño* was over. This translated into a drop in prices on the Energy Exchange, which began to be passed on to prices for consumers. Moreover, less demand for natural gas on the part of thermoelectric plants has freed installed capacity, in order to increase the supply of natural gas for residential use. This, in turn, would be reducing the adjustments in rates charged to the consumer.

As for labor costs, the information in August and September suggests they do not appear to have generated pressure in addition to what was observed in the first half of the year, except for the pressure suggested by the indus-

Graph 31
Nominal Wages
(Annual change)



Source: DANE; calculations by Banco de la República.

trial wage indicator. With the data at September, wages in heavy construction (4.21%) and housing (4.33%) showed no major changes and continued to adjust at rates that are below observed inflation and less than the hike in the minimum wage for this year. Likewise, the annual adjustment in commerce wages declined in August to 6.13% annually (compared to 6.36% in June). In contrast, the annual adjustment in industrial manufacturing wages accelerated from 5.70% in June to 7.86% in August (Graph 31).

The gradual weakening of domestic demand during the year, coupled with an output gap in negative territory, according to estimates by *Banco de*

la República (as outlined in Chapter IV of this report), do not point to inflationary pressures originating on this front. In fact, these circumstances might be helping to reduce the pace of adjustments in prices for a number of CPI components, especially those involving less tradable goods and services

Even so, indexing and above-target inflation expectations during the third quarter were still factors that exerted upward pressure on consumer inflation. This is evident in the behavior of many prices, especially those related to health care and education, among others. Yet, given the decline in inflation during the last two months, these pressures are expected to begin to subside on par with the reduction in inflation expectations.

A. CORE INFLATION

As with headline inflation, the upward trend in core inflation broke during the third quarter. The average of the four indicators monitored by *Banco de la República* fell during August and September, reaching 6.29% in September, versus 6.52% in June (Table 6).

All the indicators contracted during the third quarter. The sharpest reductions were in the nonfood CPI (down from 6.31% in June to 5.92% in September) and in the CPI excluding food and regulated items (down from 6.20% in June to 5.84% in September). There were lesser declines in the CPI excluding perishable foods, fuels, and public utilities and in the Core 20, which posted the highest rate at the end of September (Graph 6, Graph 32).

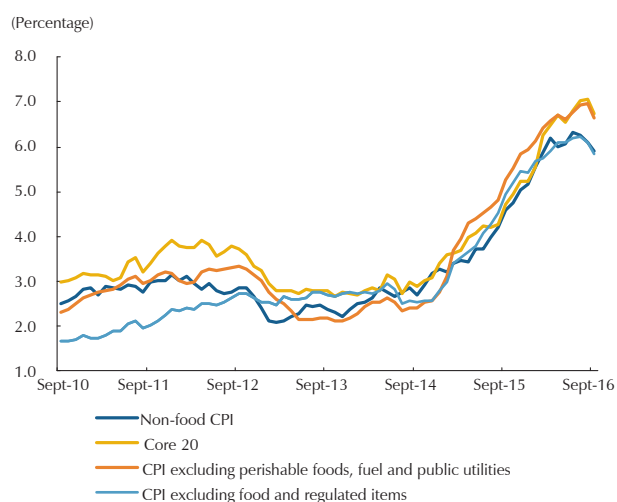
Within the nonfood CPI, the tradable sub-basket (excluding food and regulated items) spearheaded the drop in annual inflation, having gone from 7.90% in June to 7.20% in September (Graph 6, Graph 33). However, an-

Table 6
Consumer Price Indicators
(At September 2016)

Description	Weight	Dec-15	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sept-16
Total	100.00	6.77	7.98	7.93	8.20	8.60	8.97	8.10	7.27
Non-food	71.79	5.17	6.20	6.02	6.07	6.31	6.26	6.10	5.92
Tradables	26.00	7.09	7.38	7.57	7.88	7.90	7.87	7.53	7.20
Non-tradables	30.52	4.21	4.83	5.00	4.78	4.97	5.01	5.05	4.85
Regulated items	15.26	4.28	7.24	5.78	6.00	6.71	6.40	6.10	6.19
Food	28.21	10.85	12.35	12.63	13.46	14.28	15.71	13.06	10.61
Perishables	3.88	26.03	27.09	28.62	33.44	34.94	39.27	21.27	6.66
Processed	16.26	9.62	10.83	10.89	11.04	12.09	13.33	13.07	12.56
Meals outside the home	8.07	5.95	7.53	7.53	7.92	8.11	8.50	9.00	9.18
Core inflation indicators									
Non-food		5.17	6.20	6.02	6.07	6.31	6.26	6.10	5.92
Core 20		5.22	6.48	6.69	6.55	6.82	7.03	7.07	6.73
CPI excluding perishable foods, fuel and public utilities		5.93	6.57	6.72	6.61	6.77	6.92	6.97	6.65
Inflation excluding food and regulated items		5.42	5.91	6.08	6.08	6.20	6.22	6.10	5.84
Average of all the indicators		5.43	6.29	6.38	6.33	6.52	6.61	6.56	6.29

Source: DANE; calculations by Banco de la República.

Graph 32
Core Inflation Indicators

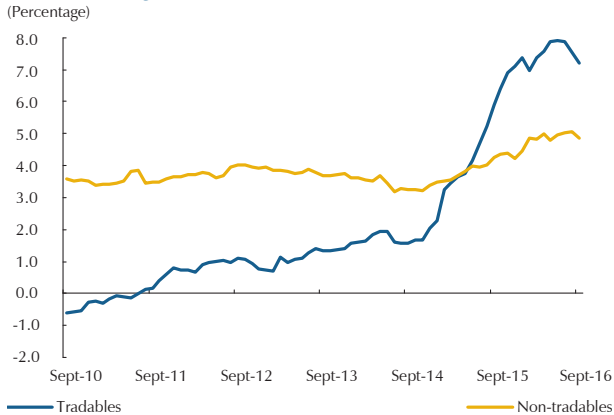


Source: DANE; calculations by Banco de la República.

annual inflation in these prices remains high, due to accumulated depreciation of the peso between July 2014 and February 2016, and has been passed through gradually to domestic prices since the end of 2014. Nevertheless, the upward trend in this variable came to an end in August and September, suggesting the pass-through of cumulative depreciation to prices would be almost complete. This would be possible because depreciation was interrupted mid-way through the first quarter, with moderate appreciation in March and relative stability in the exchange rate from that point until September.

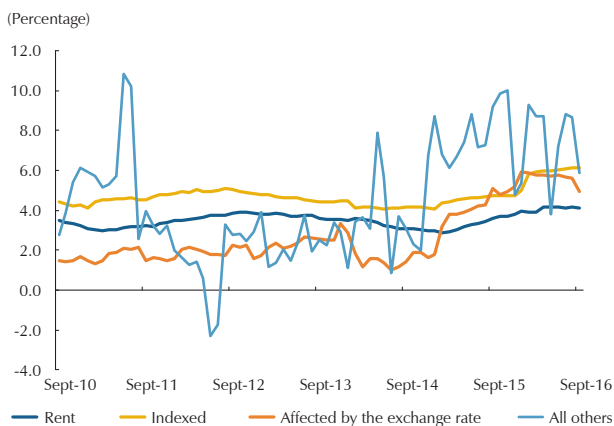
As for tradables, less pass-through of depreciation to prices has been evident in the case of automobiles, various electronic articles, and domestic appliances. Despite sizeable monthly adjustments in the prices of these goods during previous quarters, the hikes were far more restrained in the last three months. However, moderate pass-through is not as clear in the case of “other goods” such as medicine, household cleaning products, and items for personal hygiene.

Graph 33
Tradable and Non-tradable CPI, Excluding Food and Regulated Items
(Annual change)
(Percentage)



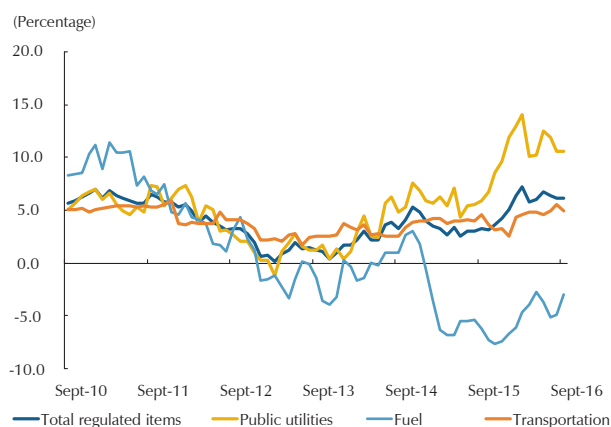
Source: DANE; calculations by Banco de la República.

Graph 34
Annual Non-tradable Inflation
(Annual change)
(Percentage)



Source: DANE; calculations by Banco de la República.

Graph 35
CPI for Regulated Items and Components Thereof
(Annual change)
(Percentage)



Source: DANE; calculations by Banco de la República.

In the third quarter, the non-tradable component of the CPI excluding food and regulated items also contributed to the slowdown in annual inflation. Its annual variation was 4.85% in September, which is less than the June figure (4.97%), but higher than in December 2015 (4.21%), (Table 6 and Graph 33).

Several components of the non-tradable CPI excluding food and regulated items adjusted downward during the third quarter. The most significant, because of its weight in the consumer basket, was the CPI for leases (effective and imputed), which experienced a slight drop from 4.17% in June to 4.13% in September (Chart 34). The annual variation in this item had risen steadily since the beginning of 2015, but that trend was interrupted during the second quarter of 2016. Although leases can be adjusted to reflect past inflation (as per Article 20 in Law 820 dated July 10, 2003), such has not been the case in 2016. This might be because the supply of real estate far exceeds the demand, which also might be weakening at this point in time.

As for non-tradables, the exchange-rate sensitive component declined last quarter (from 5.75% in June to 4.95% in September). Similarly, the adjustments in other items were less, due to specific circumstances (in the case of soccer tickets) or factors associated with weak demand. In contrast, the annual change in the most indexed items increased slightly from 6.03% in June to 6.14% in September.

In addition to tradables and non-tradables, the regulated CPI also contributed to lower inflation during the third quarter. Its annual variation went from 6.71% in June to 6.19% in September (Table 6 and Graph 35). This bearish behavior was concentrated in public utilities, thanks largely to lower adjustments in residential rates for natural gas. These were favored by the end of *El Niño* weather and by less demand for natural gas to fuel the country's thermoelectric plants. The annual variations in electricity (13.5%) showed no major

changes during the third quarter, while those for water and sewage service trended downward (from 7.76% in June to 6.86% in September), given the rate reductions in Bogotá. The new schedule for public utility rates (Resolution CRA-720/ 2015 and a change in its entry into force, known as CRA-751/ 2016) took effect last July, triggering an additional charge to households for improvements in infrastructure and service coverage in most Colombian cities. However, this was not the case in Bogotá; its water and sewage company announced rate reductions at around 2.8%. These would be offset by the hikes in other cities and explain the lower annual adjustment in rates for this service.

The annual variations in the other two components of the regulated CPI; namely, fuel and transport, accelerated during the last three months. In the case of fuel, the figure on record increased to -2.98% in September, from -3.63% in June, given two gasoline price hikes during those months (10 pesos in August and 101 pesos in September) (Graph 35). The annual change in the CPI for transport was up as well, from 4.56% in June to 4.99% in September. These increases do not include the price hikes authorized for taxi service in Bogotá, which are scheduled to take effect during the fourth quarter.

B. FOOD INFLATION

The annual variation in the food CPI declined significantly during the third quarter, which explains the bulk of the decline in consumer inflation during that period. This is because the temporary supply shocks caused by *El Niño* weather and the truckers' strike, which affected food prices in previous quarters, began to be overcome in recent months.

As noted in previous editions of this report, consumer food prices were influenced as of mid-2015, and especially during the first half of 2016, by an upward shock stemming from climate factors associated with *El Niño* (which was one of the most severe episodes in history). This situation sharply reduced supply and raised annual food inflation from 10.85% in December to 14.28% in June.

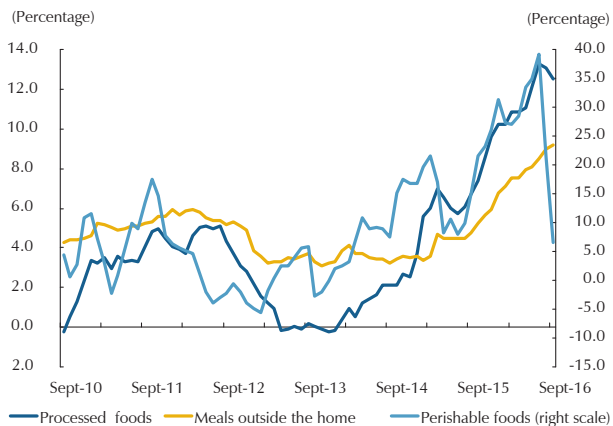
Moreover, as *El Niño* subsided, additional bullish pressure emerged due to the truckers' strike that began in early June and ended during the third week of July. Transport problems restricted the entry of food to the country's main supply centers, causing a temporary rise in food prices and speculation, especially in the case of perishables. This situation began to reverse in August, once the strike was over.

Graph 36
Food CPI
(Annual change)



Source: DANE; calculations by Banco de la República.

Graph 37
Food CPI, by Groups
(Annual change)



Source: DANE; calculations by Banco de la República.

Accordingly, the annual variation in the food CPI peaked at 15.71% in July, but declined sharply in August and September, ending the third quarter at 10.61% (Graph 36). This momentum was led by perishable food prices, with an annual variation in the respective CPI that rose from 26.03% in December to 39.27%, but then fell sharply to 6.66% in September (Graph 37).

On par with perishables, processed food prices also rose during the first seven months of the year, although less so. Annual inflation in these prices went from 9.62% in December to 12.09% in June and 12.56% in September (Table 6 and Graph 37). This upward momentum is associated mainly with accumulated peso depreciation and possibly with some international price hikes for agricultural raw materials that drove up prices for imported items or those with a high percentage of imported input, such as fats, oils and cereals, which are among the most predominant ones.

The CPI for processed foods also was boosted by beef price increases throughout much of the year, including the third quarter. This situation was due to a limited supply that was restricted by climate factors (*El Niño* weather reduces livestock productivity), by specific problems associated with the operation of slaughterhouses, by increased meat exports and also by the apparent presence of

a livestock retention phase, which characteristically reduces the slaughter of cattle, with a subsequent rise in prices.

Finally, the annual variation in the CPI for meals outside the home rebounded in September (9.18%) compared to June (8.11%), (Graph 37). This performance is not atypical, since meals outside the home usually take two or three months to respond to a drop in food prices. This food group is expected to begin to see less annual inflation in the coming months.

IV. MEDIUM-TERM FORECASTS

The inflation forecast for the end of 2016 and for 2017 is lower in this report. Consumer inflation is expected to fall within the target range over the next year.

The supply shocks that affected inflation during the period from 2015 to mid-2016 will continue to dwindle in the coming quarters.

With respect to what was published last quarter, the GDP growth forecasts outlined in this report for all of 2016 and for 2017 were revised downwards. In the most likely scenario, growth would be 2.0% during both those periods.

Growth in 2017 is expected to be driven by more favorable demand from our trading partners than in 2016, by terms of trade at levels above those observed in 2016, and by investment in civil works that maintains its momentum.

A. ECONOMIC GROWTH DURING THE REMAINDER OF 2016 AND IN 2017

The GDP growth forecasts outlined in this report for the remainder of the year and for 2017 were revised downwards again from the previous quarter. According to the latest figures, some of the scenarios considered as downside risks to economic activity in past reports have materialized. It is important to point out that the central forecast scenario presented herein does not contemplate the possible impact eventual congressional approval of the government's Structural Tax Reform Bill would have on the productive sector. However, it does include the fiscal adjustments that are needed to accomplish what is proposed in the Medium-term Fiscal Framework (MTFF), which in turn guarantees compliance with the fiscal rule.

In terms of foreign demand, our major trading partners have experienced weaker economic growth (non-traditional trade weighted) than previously expected. Coupled with the fourth-quarter forecasts for our trading partners and for the countries in the region in 2016, this has led to weak external demand during 2016 as a whole. A moderate recovery in productive activity for our trading partners is expected in 2017, partly because of better economic performance in the United States and in the countries of the region.

The slowdown in demand during 2016 will be due mainly to a decline in gross capital formation.

This has occurred in a context where international commodity prices have trended upward in recent months. The forecasts implicit in those prices suggest that trend will continue during the fourth quarter of the year and in 2017. Yet, the average level for all of 2016 is still below the 2015 average. In fact, the most likely scenario points to an average international oil price (Brent benchmark) of about USD 44 per barrel in 2016. This is similar to the price last quarter (USD 43), but lower than in 2015 (USD 53). By 2017, oil is expected to be priced at around USD 52 per barrel. The outlook for next year includes a scenario where the recent trend in commodity prices is strengthened and some type of agreement is reached to limit the global supply of crude.

In terms of external financing, the prospects for available international liquidity are maintained in this report, despite a considerable increase in the risk that the cost of accessing these resources might escalate in late 2016 and early 2017. In principle, the slowdown experienced by the economies in the region, particularly the Colombian economy, would imply some increase in risk perception. Moreover, the market expects the Fed to raise its benchmark rate in the short term, and the effects of Brexit on emerging economies are not yet clear. Consequently, the country's current account deficits are expected to be narrower than was anticipated last quarter for the aggregates in 2016 and 2017. This would be consistent with less external financing and less momentum in domestic demand.

All this had consequences in real terms for the momentum in national disposable income during 2016, which would continue to be observed in 2017. In addition, there are the effects derived from the accumulated rise in consumer prices and the cumulative interest rate hikes between September 2015 and July 2016, which affected the performance of domestic demand in 2016 and would do so into 2017.

This being the case, the slowdown in domestic demand during 2016 will be due largely to a drop in gross capital formation that is consistent with the new levels of income and with the change in relative prices between tradable and non-tradable goods. These adjustments will be made particularly in investments in transport equipment and machinery for industry.

Investment during 2017 is expected to be mediocre, although better than in 2016. In this sense, no additional reductions in the already low levels of investment are anticipated, other than the one forecast for the construction of buildings and civil works. Furthermore, with the recovery in terms of trade, investment by the oil sector (which was hard hit this year) is expected to decline less, particularly investment in exploration and to reactivate suspended wells.

Investment performance in 2017 also is expected to be mediocre.

Investment in construction is expected to contribute positively to growth during 2016 and 2017.

Regarding investment in construction, positive contributions to growth in output are expected throughout 2016. On the one hand, building construction is being propelled by the residential component, favored by consolidation of the government's priority housing plans and by the expansionary impact of interest rate subsidies for the purchase of new homes in the low and medium-income brackets. The effects of these programs are expected to continue to contribute to economic growth in 2017. On the other hand, civil works are benefitting from better performance by regional and local governments, particularly towards the second half of the year. In the same vein, payments for road construction in 2017, as part of the so-called 4G infrastructure projects, are expected to increase, contributing positively to growth in this item of GDP. However, the fiscal adjustments in government investment anticipated for next year in the MTFF would have consequences in real terms that would reduce the momentum in this component of output.

Growth in private consumption would be less in 2016 than in 2015, as was forecast in previous editions of this quarterly report. The slowdown is explained by the effects accumulated consumer inflation throughout the year and recent interest rate hikes would have on the purchasing power of consumer income. Moderate performance by 2017 is anticipated, given the lag in the impact of a change in monetary policy and prospects for a less dynamic job market in the medium term.

The momentum in public consumption will be less in 2016 than in 2015 (2.8%), as was forecast in the previous edition of this report. The fiscal adjustment is expected to be reinforced during 2017 in a way that is consistent with the MTFF and with meeting the deficit target contemplated in the fiscal rule law, which would lead to mediocre momentum in public consumption.

Finally, in the aggregate for the current year, net exports would be making a positive contribution to GDP growth, and would continue to do so in 2017. In 2016, the acceptable performance of exports classified as non-traditional, coupled with the good momentum in service exports, partly offsets the decline in traditional exports such as oil and coffee. A similar situation is anticipated for next year, with some recovery in traditional exports and more of a boost from the effects of accumulated peso depreciation on non-traditional industries and services.

Net exports also would make a positive contribution to growth during 2016 and 2017.

Imports should contract this year, given less momentum in the import-intensive component of domestic demand (primarily investment in capital goods and durable consumption). No significant growth in this item of GDP is forecast for 2017, partly because Reficar's entry into full operation would encourage some degree of fuel import substitution, which would result in an even larger correction in the trade deficit.

In 2017, industry would expand at a faster rate than the other sectors.

As for the different branches of the economy, cumulative depreciation of the peso has stimulated production in several tradable sectors during 2016, particularly manufacturing. The gradual progress being made towards re-opening Reficar will be reflected in high growth rates for the production of petroleum products. The other industrial subsectors will register a good rate of expansion as well. The import substitution process is expected to continue in 2017, thanks to improvements in competitiveness derived from accumulated depreciation, from efforts to expand markets for Colombian products, and from investment in capital goods in years past. Taking all these factors into account, the technical staff at *Banco de la República* estimates industry will grow at a faster pace in 2017 than the other sectors of the economy.

Performance in the agricultural sector during 2016 as a whole would be moderate, following the important impulse it provided to the Colombian economy in past years, particularly due to the coffee plantation renewal programs, which increased crop productivity. In principle, coffee production would end the year at a level below the one observed in 2015, as was forecast in the last edition of this report. This is because of the adverse consequences of *El Niño* weather on the volume of coffee produced, despite the gains in productivity stemming from the renewal of coffee plantations and the investments made in past years. Coffee production would surpass the average for the most recent decade, at around 14 million sacks, versus 14.2 million in 2015. As for other farm products, the weakening of agriculture in 2016, due to the lagging effects of *El Niño* weather, would be reversed, thereby allowing for a considerable increase in agricultural supply during 2017.

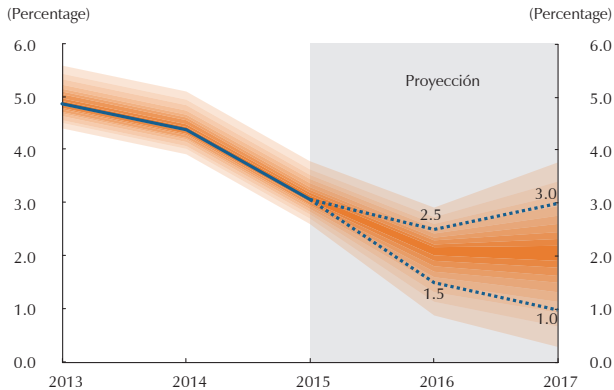
Finally, the annual contraction in the mining sector during 2016 as a whole is related to the slump in oil and coal production. Despite the recent recovery in prices for these commodities, they are still lower than in 2015 and in last five years: USD 53 and USD 85 for oil and USD 57 and USD 74 for coal, in that order. The revival in these prices anticipated for 2017 would encourage better performance in this branch next year.

Based on the above, the forecast for output growth in the most likely scenario is around 2.0% for 2016 and 2017 (graphs 38 and 39), within a forecast range of 1.5% to 2.5% for the current year and 1.0% to 3.0% for 2017 (Table 7). The central path was reduced compared to the one outlined in the last quarterly report.

The central path of the GDP forecast for 2016 and 2017 was reduced compared to the forecast presented in the previous edition of this report.

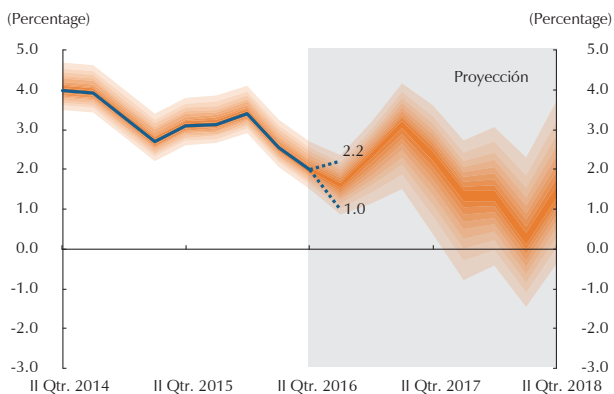
On this occasion, the risk balance is skewed to the downside and the span of the intervals remains broad. For the most part, this is because of the uncertainty about how the external variables will play out. The main risks in this direction are associated with a slower pace of growth for our trading

Graph 38
Annual GDP Growth Fan Chart



Source: DANE; calculations by Banco de la República.

Graph 39
Annual Quarterly GDP Growth Fan Chart



Source: DANE; calculations by Banco de la República.

partners that might affect non-traditional exports in the next two years. The main upside risk is related to better performance in terms of private consumption and investment, which could be the result of more access to international financing compared to what is contemplated in the central forecast. Furthermore, it is possible that accumulated depreciation might have more of an impact on tradable production, which would allow for more import substitution than what is forecast in the central scenario.

According to projections for economic growth, the exercise to estimate the output gap suggests it would have become slightly negative at the start of 2016. The forecasts indicate it would continue to expand during this year and the next.

This time around, the extent of the average gap for 2016 is similar to what was estimated last quarter. The average gap for 2017 is now more negative than the one outlined in the last edition of this report. The likelihood the gap will end 2016 in negative territory is 99%; the same probability is 95% for 2017 (Graph 40).

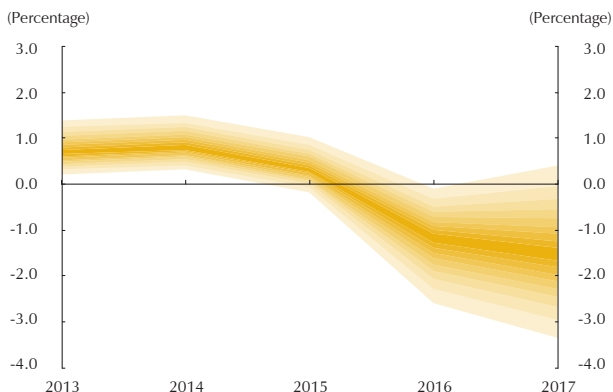
These results indicate the inflationary pressures caused by aggregate demand would have been low and will remain so during the rest of this year and in 2017.

Table 7
Probability Ranges in the Annual GDP Growth Fan Chart
(Percentage)

Range	2016	2017
<3	97.1	81.8
3.0-4.0	2.9	15.0
4.0-5.0	0.0	2.9
5.0-6.0	0.0	0.2
Between 3 & 5	2.9	17.9
Between 2 & 4	46.7	48.4
Between 1.5 & 3	72.0	51.3

Source: Calculations by Banco de la República

Graph 40
Output Gap Fan Chart



Source: DANE; calculations by Banco de la República.

B. INFLATION

1. Forecasts

As anticipated in the June edition of this report, annual consumer inflation during the third quarter broke away from the upward trend witnessed since mid-2014 and declined in August and September, which are the last two months for which information was available at the time this report was written. Even so, the actual figures were lower than those projected in June. The forecast error was concentrated mainly in the food CPI, but also was significant for the non-food CPI.

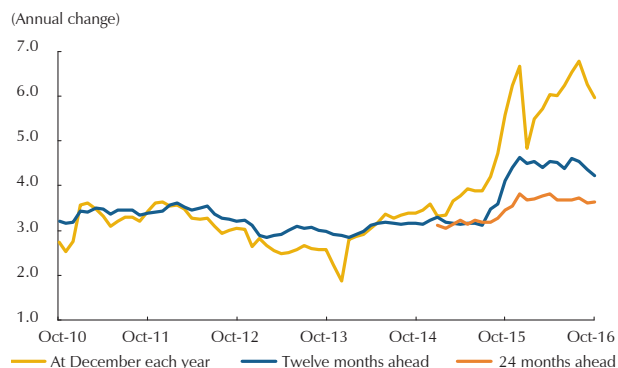
The behavior of consumer prices shows the temporary shock caused by *El Niño* began to subside in recent months and its effects would be reversing somewhat faster than was contemplated in the central forecast outlined in the previous edition of this report. Much the same can be said of the truckers' strike. The upward pressure it placed on prices during June and July subsided in August, once the transport and shipment of goods within the country returned to normal, as did food supply levels. There also is evidence to show the upward pressure caused by the depreciation of the peso peaked during the third quarter and is starting to decline.

Given these circumstances, the new central forecast in this report with respect to headline consumer inflation at different horizons is much lower compared to the one presented in the June *Inflation Report*. Something similar happened in the case of core inflation, represented in the exercise by the non-food CPI.

As noted in the previous edition of this report, consumer inflation this year would decline considerably in the coming quarters. Besides reversal of the supply shocks, the reduction is the result of the monetary policy decisions adopted in previous quarters. The cumulative increase of 325 bp in intervention rates between September 2015 and July 2016 helped to temper the growth in domestic demand and to lower inflation expectations towards the 3.0% target, among other consequences. All of this, in turn, reduces inflationary inertia, discourages indexation at rates above that target, and ultimately facilitates a decline in inflation during the remainder of the year and especially in 2017.

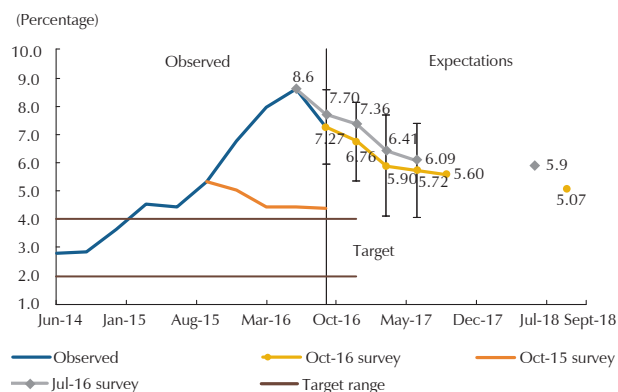
In fact, at the time this report was written, the drop in inflation in August and September had led to a decline in inflation expectations. This is according to the different indicators at hand. In the case of the monthly survey of

Graph 41
Annual Inflation Forecasts by Banks and Brokerage Firms



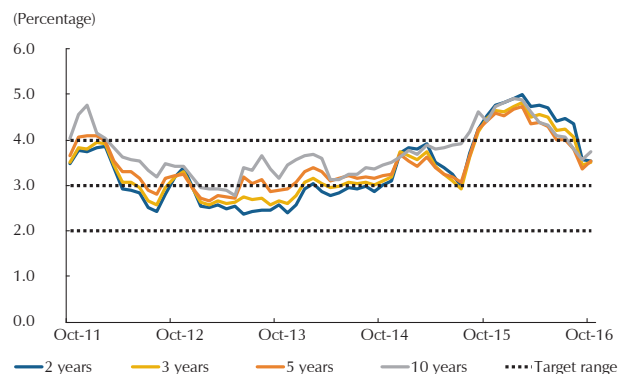
Sources: Banco de la República.

Graph 42
Observed Inflation and Inflation Expectations
(At three, six, nine and twelve months)
(Annual inflation)



Note: Each expectation is presented with its respective standard deviation.
Sources: DANE and Banco de la República (Quarterly Survey of Expectations)

Graph 43
Break-even Inflation Expectations
(At two, three, five and ten years)
(Monthly average)^{a/}



a/ Nelson & Siegel Method
Source: Banco de la República (Quarterly Survey of Expectations) and DANE

market analysts, inflation anticipated by December 2016 fell from 6.53% in mid-July to 5.98% in mid-October. There also was a reduction in inflation predicted for December 2017, although less so. It went from 4.24% to 4.16% (Graph 41).

The quarterly survey of entrepreneurs, trade unions, and academics also showed a drop in expectations at different horizons (see Graph 42). For example, expected inflation at twelve months went from 6.1%, according to the mid-July survey, to 5.6%, according to the one in mid-October. At twenty-four months, the decline was even greater (from 5.9% to 5.15%). Expectations derived from TES (treasuries) at two, three, and five years went from above 4.0% in July to around 3.5% in mid-October (Graph 43).

The most important change in the central inflation forecast presented in this report involves a sharper decline in the annual variation in the food CPI, particularly in prices for perishables, compared to the forecast in the June *Inflation Report*. As in other periods of *El Niño* weather, the high food prices observed since mid-2015 also encouraged planting, which would increase the food supply during the final months of 2016. Productivity also has been favored by the return to normal weather conditions, with more rainfall. All of this makes it possible to lower or halt price hikes for many perishables or short-cycle food crops, such as rice, and will continue to do so. According to *Banco de la República's* models and in light of past experience, this situation should continue during the fourth quarter of 2016 and throughout most of the first half of 2017.

On the other hand, to the extent the forecast in this Report is for relative exchange rate stability in the coming quarters, with no anticipation of international price increases for the agricultural raw materials Colombia imports, there should be no major hikes in the food prices that are sensitive to these variables. Likewise, the CPI for meals outside the home, which is an important component of the sub-basket that posted a major yearly adjustment up to Sep-

On this occasion, we expect a more pronounced decline in the annual change in the food CPI.

tember (Chapter III), should register increasingly moderate price hikes in the coming quarters, in line with lower food prices and with internal demand that will be weak. During previous bouts of *El Niño* weather, the annual change in the CPI for meals outside the home began to decline one quarter after the break in food prices.

The downward revision of the forecasts included not only the food CPI but also the non-food CPI, and for different reasons. First, the faster decline in food inflation, as explained above, has an impact on the non-food CPI via reduced inflation expectations and price indexing at lower headline inflation levels. These second round effects, due to disappearance of the food supply shocks, would be felt particularly in the CPI for tradables and non-tradables, excluding food and regulated items. Their momentum is highly dependent on expectations and on past inflation.

Secondly, the forecast for Colombia's economic growth during the remainder of 2016 and in 2017 was revised downward in this report, with household consumption continuing to adjust to the decline in national income caused by the drop in terms of trade from mid-2014 to early 2016, coupled with growth in investment that is minimal at best. This weaker internal demand leads us to estimate a slightly more negative output gap for the coming quarters than the one outlined in the last edition of this report (as illustrated in the first part of this chapter), which primarily means a decline in the forecast for the non-tradable CPI.

The central forecast does not contemplate a significant degree of depreciation in the nominal exchange rate during the fourth quarter of this year and throughout 2017, since no major interruptions in capital flows to the country are expected and the demand for imports would be weak, as explained in Chapter I of this report. Consequently, no inflationary pressures originating with the exchange rate are anticipated for the coming quarters, other than those observed as a result of the depreciation that accumulated between mid-2014 and early 2016. Pass-through of that depreciation to consumer prices should disappear in the coming quarters, as seems to have begun to occur in the third quarter. However, until that process is complete the rise in prices for goods and services that are most sensitive to the exchange rate will continue to be relatively high, although declining.

No inflationary pressures originating with the exchange rate are anticipated for the coming quarters.

In the central path outlined in this report, wage adjustments would continue at rates above the 3.0% inflation target, since inflation is likely to end 2016 at a higher level and the variable has a strong indexed component. However, by the end of the year and with the decline in inflation, those adjustments are expected to be more moderate. In addition, given the forecasts for slow growth next year, the job market in 2017 is likely to be more relaxed than in 2016, which would restrain wage hikes. Accordingly, inflation would continue to be subject to up-

The nonfood CPI also will contribute to the anticipated decline in inflation.

ward pressure from labor costs, especially at the beginning of 2017, but less so than in 2016, and those pressures should disappear during the course of the year.

Taking all these factors into account, the forecast exercise outlined in this report shows a central path for headline consumer inflation that declines significantly in the fourth quarter of 2016, ending the year below the level reached in December 2015, which was not foreseen in the previous edition of this report. The downward trend in inflation will become more pronounced in the first quarter of next year and will continue up to the second quarter, when inflation is expected to be slightly below the ceiling of the long-term target range (between 2.0% and 4.0%). It would remain there during the second half of the year.

The steep decline in inflation over the next two quarters would continue to be driven largely by food prices and by disappearance of the shock generated by *El Niño*. According to this report, the reversal of that shock would be faster and more pronounced than was anticipated in the September edition.

However, for the reasons explained earlier, the nonfood CPI, with its three main sub-baskets, also would contribute to the decline in inflation. The annual variation in tradables and non-tradables is expected to decline throughout 2017, posting levels below those contemplated in the last edition of this report. As for regulated items, the decline would be less than previously anticipated. Water-rate hikes that would occur at the end of the year or in early 2017 were taken into account for this last sub-basket, as were the taxi fare increases in Bogota as of October 2016.

Accordingly, core inflation measured by the non-food CPI would decline in the final quarter of 2016 and would continue to subside gradually during 2017. However, it would invariably top the ceiling of the target range. Convergence to 3.0% would occur later.

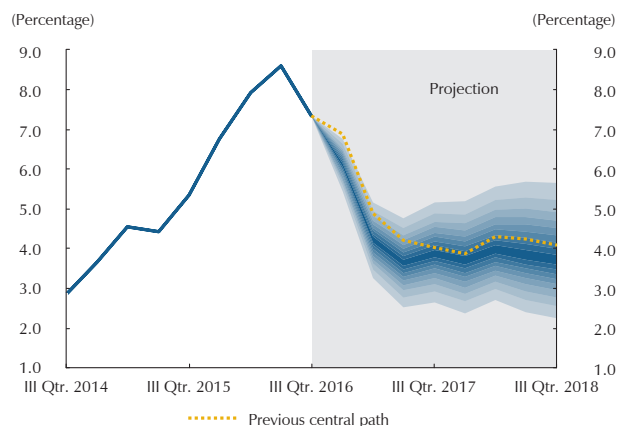
C. RISK BALANCE

The risk balance with respect to headline consumer inflation and non-food inflation is shown in fan charts 44 and 45. The estimate in this report points to a balanced fan chart for the remainder of 2016, followed by an upward bias as of mid-2017. The central path of the inflation forecast is lower (Graph 44), and both the central path and the balance of risks presented below were constructed without including the effects of the tax reform filed by the Government in Congress. For this report, the breadth of the fan chart (which measures the uncertainty that accompanies the forecasts) remained high, due to considerable uncertainty about public and private consumption and how the external context will behave.

The risk balance by 2017 will be biased upward for inflation.

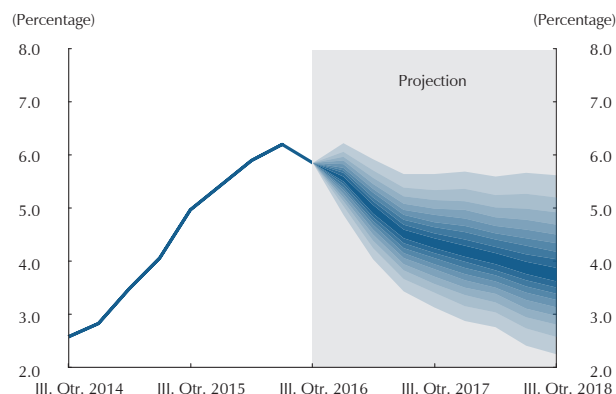
The following are the upside risks considered in this report:

Graph 44
Headline Inflation Fan Chart



Source: Banco de la República.

Graph 45
Non-food Inflation Fan Chart



Source: Banco de la República.

-Added depreciation due to risks in the international environment:

The level of the exchange rate has stabilized somewhat since the second quarter of this year, but there are risks in the international environment that could lead to more depreciation than is contemplated in the central scenario for inflation. For example, the anticipated recovery in oil prices might not materialize and, in fact, they might decline. This is possible insofar as the current interruption in oil supply is not the result of an agreement among the major producers and is linked to supply shocks associated with non-economic events (such as those in Canada, Kuwait, and Nigeria, among others). Consequently, an unanticipated recovery in supply, as well as a new increase in production from the United States (motivated by current price levels) cannot be ruled out. Moreover, on the demand side, a decline could occur if global aggregate demand is influenced by the magnitude of the effects of factors such as Brexit or the emergence of financial risks in China. Overall, this would lead to a drop in the price of oil, with its effect on depreciation.

Another aspect that could have repercussions for the exchange rate would be an unanticipated rate hike by the Fed. The current perception suggests there would be only a slight increase at the end of 2016 and a second one during 2017, but the favorable news coming from the job market (with an unemployment rate near full employment) could prompt a change in that position. This scenario could affect the terms for access to external financing, when translated into lower inflows of capital and, therefore, added depreciation of the peso. If these events occur, they would be reflected in

A hike in the Fed's interest rate poses a bullish risk to inflation.

higher annual variations in the tradable CPI and in the headline CPI, compared to the central forecast.

Activation of price and wage indexing mechanisms:

Inflation is very likely to surpass the target range in 2016, allowing for wage increases above 3% in 2017. In addition, price-setting agents could make automatic adjustments based on the behavior of headline inflation, given the various indexing mechanisms that operate in the Colombian economy.

These events would influence the possibility of more inflationary inertia than is implicit in the forecast models, which were estimated and calibrated during periods of lower inflation than the one at present, when inflationary inertia was less. In this sense, the current path for inflation may be underestimated, especially with respect to inflation in 2017. Besides affecting the level of projected inflation, the activation of indexing mechanisms also would influence the speed of convergence towards the target for inflation.

Unexpected food price increases in 2017, due to the weather and other supply shocks:

The likelihood of La Niña weather has increased to 70% in recent months (versus 60% when the last edition of this report was written). Although the current forecast indicates this phenomenon would be moderate, we cannot rule out the possibility that it might be quite intense and have an adverse impact on agricultural supply related to the production and distribution of perishable foods. There also is the risk the cattle retention cycle will extend into 2017, which would bring additional upward pressure to bear on food prices. It is important to highlight that should these risks occur, they would only materialize in 2017 because the short-term risks on food prices would be biased downwards, as explained below.

The following are the main downside risks considered in this report:

-Less external demand than is contemplated in the central path for inflation:

There is the risk that less external demand will have a downward effect on inflation.

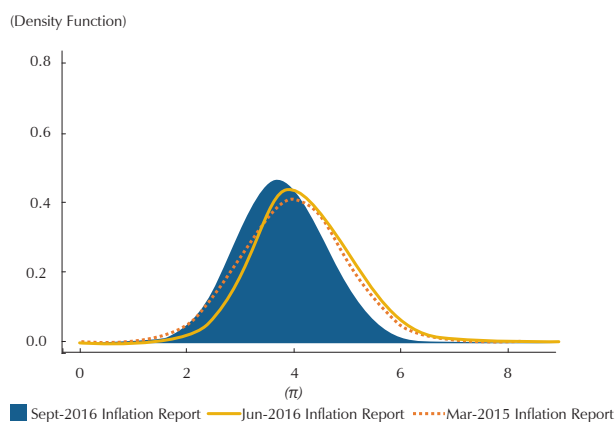
It is still highly uncertain what effect Brexit will have on the global economy, since it is unclear how investment and trade relations in Europe will be reshaped. This ambiguity could end up affecting investment decisions in that region, and through various channels, which could have an impact on other advanced and emerging economies. Moreover, an anti-integration political discourse has emerged in the advanced economies and is gaining force. If consolidated, it could have an impact on economic performance worldwide. On the other hand, eventual financial instability in China would be an obstacle to fulfilling the growth target set by its authorities, which

The probability of inflation being within the target range by December 2017 is higher in this edition of the Inflation Report.

would make it difficult for the country to transition towards an economy sustained more by domestic consumption. This, in turn, would have a variety of negative implications for the global economy. There is still a great deal of uncertainty in the region about how countries like Ecuador and Venezuela will perform economically. If this type of risk materializes, it would have repercussions for Colombia in terms of both external and domestic demand, which would exert downward pressure on consumer inflation.

-More of a drop in perishable food prices than is forecast for the end of 2016 and early 2017:

Graph 46
Cross-section of the Headline Inflation Fan Chart for December 2017



Source: Banco de la República.

The way food prices respond to the return of normal weather conditions after the disappearance of *El Niño* could be more favorable than expected. This implies their decline in the short-term would be more pronounced, which would generate more downward pressure on headline inflation than is contemplated in the central forecast. This would help to speed the convergence of inflation towards the target, and more so if inflation expectations respond favorably, with less of an impact from indexing.

Given the set of risks outlined in this section, their balance suggests the probability of headline inflation being within the target range in 2016 is low, but increases to 59% by 2017. This is more than

Table 8
Estimated Probability of Inflation between 2% and 4% by December 2017 (Percentage)

March 2016 Report	48.6
June 2016 Report	42.0
Sept. 2016 Report	58.9

Source: Calculations by Banco de la República

Table 9
Probability Ranges in the Headline Inflation Fan Chart
(Percentage)

Range	2016	2017
<2.0	0.0	2.0
2.0-2.5	0.0	5.0
2.5-3.0	0.0	12.0
3.0-3.5	0.0	20.0
3.5-4.0	0.0	23.0
>4.0	100.0	39.0
Between 2 & 4	0.0	59.0

Source: Calculations by Banco de la República

the figure in the last edition of this report, when the probability was 42% (Tables 8 and 9). In fact, Graph 46 shows the most likely value in the inflation forecast for December 2017 declined compared to the March and June 2016 reports. It also shows the distribution shifted to the left, indicating more of a probability that inflation will be between 2.0% and 4.0% by the end of 2017. It is important to note the breadth of the density function of the forecasts shown in graphs 44 and 45, according to the shaded area, only includes 90% of it. These results, like the central forecast, assume there will be an active monetary policy, with the benchmark rate being adjusted to make sure the target is met.

V. RISKS TO MACROECONOMIC STABILITY

The Colombian economy continued to adjust in recent quarters following the negative terms-of-trade shock.

In addition to the sharp real depreciation of the peso observed in the second half of 2014 and in 2015, this adjustment has been reflected in a smaller-than-expected current account deficit, a slowdown in borrowing by the private sector, and in some correction in the housing market. However, the levels of some of these variables remain close to their historic highs. This process is expected to continue gradually over the next year.

The Colombian economy continued to adjust in recent quarters, largely in response to the decline in national income brought on by the drop in oil prices since mid-2014. Economic activity has slowed somewhat more than expected, but moderately when compared to the extent and speed of the fall in terms of trade and its negative impact on the country's income, mainly on government finances.⁸

Accordingly, the new figures on economic activity indicate expenditure in excess of income is being reduced at a somewhat faster rate than was forecast. Domestic demand has weakened, mainly the demand for durable goods consumption and investment in machinery and equipment for mining. The adjustment also has been reflected in a current account deficit that is lower than expected, but with values that are still high relative to the economy's output. Imports continue to decline, partly due to the slowdown in domestic demand. Exports continue to perform poorly, given the decline in the production of certain mining products and

⁸ This is particularly true if the slowdown is compared to the low growth registered by other countries in the region after experiencing a negative shock to their national income, one that is smaller and slower than the shock in Colombia. See Box 1: "Disminución de los precios de los productos básicos y sus efectos sobre las economías de Chile, Perú y Colombia," *Informe de la Junta Directiva al Congreso de la República*, July 2016.

The new figures on economic activity indicate expenditure in excess of income is being reduced to a somewhat faster pace than was projected.

low growth in external demand that has proven to be less than was forecast. Although the exchange rate so far this year (nominal and real) is more restrained in terms of its trend towards depreciation since mid-2014, its cumulative effect continues to contribute to the adjustment in the trade deficit.

The macroeconomic performance described above occurred in an environment of ample global liquidity, which has been fundamental to the country's access to foreign financing at low cost. This has made it possible to soften the impact of the decline in national income and has contributed to the gradual adjustment in the Colombian economy. However, there is a risk the world credit market will increase its risk perception for the countries that have seen their income decline and / or are quite vulnerable to additional external shocks. Therefore, a structural tax reform aimed at increasing government revenue is a necessary measure that contributes to long-term growth by strengthening fiscal sustainability, fostering macroeconomic stability, and preserving the country's credit rating.

The recent momentum in the current account, the real exchange rate, borrowing and home prices is outlined below. These variables have been identified in the literature as crucial to understanding the imbalances that might be affecting the economy and its process of adjustment. An aggregate indicator (macroeconomic imbalance index - MII)⁹ is presented as well. It combines the gaps estimated for these variables versus their long-term levels.

Access to low-cost external financing has made it possible to soften the impact of the decline in national income and has contributed, in part, to the gradual adjustment in the economy.

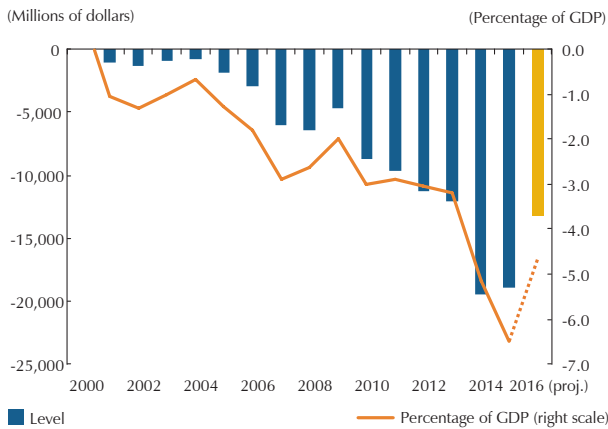
A. THE CURRENT ACCOUNT AND THE REAL EXCHANGE RATE

The figures for the balance of payments at the end of the first half of 2016 show the current account deficit continued to decline. In June, it was equivalent to 4.8% of semi-annual GDP. This amounts a reduction of 1.5 pp compared to the same period in 2015. As mentioned in the first chapter of this report, a deficit equivalent to 4.7% of GDP is forecast for the full year; that is, 1.8 pp lower than for 2015 and 0.6 pp less than was forecast last quarter. By 2017, the external deficit is expected to be around 3.7% of GDP (Graph 47).

This adjustment largely reflects the slowdown in domestic demand and occurred in an external context characterized by several factors; namely, i) terms of trade that have recovered compared to the minimum levels reached at the beginning of the year, but are still low; (ii) ample international liquidity, which meant low-cost external financing, despite some increases in the country's risk

⁹ See Arteaga, Huertas & Olarte (2012). "Índice de desbalance macroeconómico," *Borradores de Economía*, No. 744, Banco de la República.

Graph 47
Current Account Deficit



Source: Banco de la República

Graph 48
Real Exchange Rate Indexes



Note: The RERI-PPI and the RERI-CPI compare the purchasing power of the Colombian peso to the currencies of our main trading partners, using the IPP and the CPI, respectively, as a deflator. In the RERI-C (or competitiveness), a comparison is made with our main competitors in the United States market for coffee, banana, flowers and textiles.
Source: Banco de la República

premium compared to the average for 2015; and (iii) external demand that is weak and less than forecast.

The nominal exchange rate for the dollar has stabilized in this environment and the multilateral real exchange rate has appreciated slightly. The build-up in the peso in real terms would be due to the improvement in terms of trade and to low external interest rates. These are negative in some cases and favor capital flows to emerging market economies. Despite its recent behavior, the real peso exchange rate compared to the average for our main trading partners has depreciated between 15% and 25% more than the average observed between 2010 and 2014 (Graph 48).

In the central forecast scenario outlined in this report, current external conditions are expected to remain unchanged during the remainder of 2016 and in 2017. This implies the country's foreign revenue would recover somewhat, due to terms of trade that would remain relatively low, but would see some additional improvement. As for expenditures, import substitution is expected to continue in some sectors (see Box 2, page 46). In addition, the cost of external financing is not expected to increase significantly, partly because of the moderate change in the monetary stance of the advanced economies, which had no major repercussions for the risk premiums of the emerging countries. Under these conditions, the external imbalance would continue to adjust gradually.

However, several situations could cause the international environment to deteriorate for Colombia. The slight improvement in terms of trade is due largely to the fact that prices for exported goods (mainly commodities) would have rebounded slightly because of specific supply conditions, which could have had less of an impact than expected (e.g., the OPEC agreement to reduce the supply of oil).

For the same reason, global growth might be less than expected and have a negative impact on the demand for commodities. This would exert a downward effect on the country's terms of trade and, hence, on national income. Moreover, if the countries of the region that are important destinations for

manufacturing exports do not recover, the momentum in exports of such goods will be less than anticipated.

On the other hand, external financing could become more expensive. The terms under which Colombia accesses foreign capital depend on a variety of factors, both internal and external. Larger than expected hikes in international interest rates could increase the cost of external financing for both the private and public sectors, as could more aversion to risk worldwide or an increase in the country’s risk perception.

If any of these risks were to materialize, it could reduce Colombia’s access to external financing and narrow the current account deficit more than expected, even beyond what is consistent with the decline in national income. This also would imply less economic growth than is forecast herein. As will be illustrated later, curbing the growth in private-sector borrowing is necessary to strengthen the sector and to make it more resilient in the face of adverse shocks. It also is crucial to preserving the country’s credit rating. To do so, a tax reform that guarantees fiscal sustainability is fundamental. Various credit rating agencies have reiterated this fact.

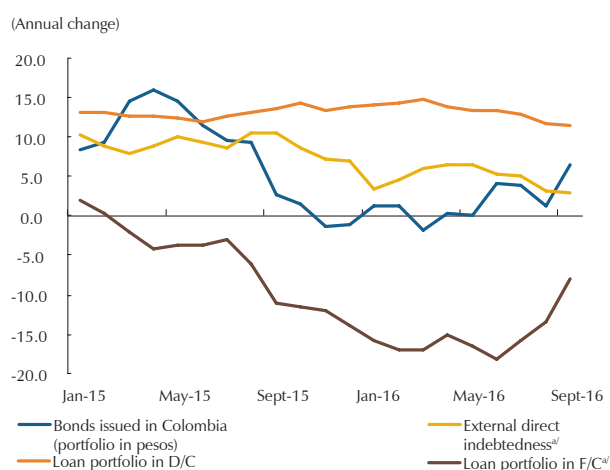
B. BORROWING

The slowdown in private-sector borrowing continued during the past year. Much of this reduced growth is explained by the behavior of the financial system’s portfolio in pesos, which is the main component of private-sector borrowing.

The reduction in the growth rate has been slight, but steady since March. The increase in foreign direct borrowing has slowed as well since May. In contrast, bond issues on the domestic market have exhibited more momentum than in past months, and there has been less of a decline in the loan portfolio in foreign currency (Graph 49).

According to the September edition of the Quarterly Survey of Credit in Colombia, intermediaries sense that there is less demand for commercial and consumer loans; at the same time, the requirements for granting loans of this type have increased. Together, these two types of loans account for more than 80% of the loan portfolio in pesos in the financial system. In the case of housing, lending institutions indicate that they per-

Graph 49
Private Sector Indebtedness



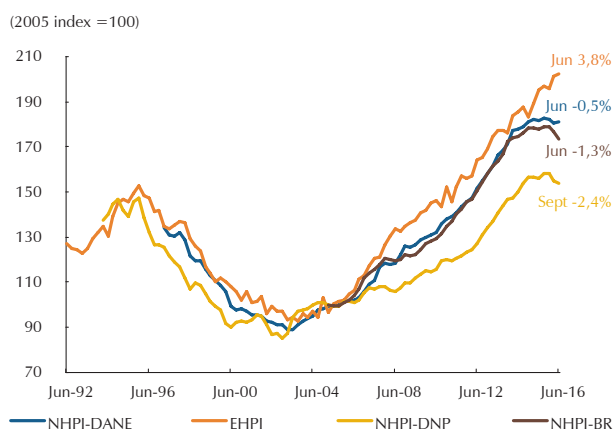
Note: Includes bank loans in domestic and foreign currency, the mortgage securitization portfolio, bonds floated on the local market and external direct financing (loans with foreign banks, with suppliers or with the parent company, as well as bonds issued abroad).
a/ Stated in US dollars.
Source: Banco de la República

ceive less growth in demand for home mortgages, and that the requirements were either the same (banks) or had increased (cooperatives).

The loan portfolio has slowed in a context marked by weak domestic demand, by historically high levels of private debt relative to output, and by increases in real benchmark interest rates as well as those on savings and loans. There also have been slight increases in the loan portfolio risk indicators, prompting intermediaries to put more effort into carefully selecting their borrowers.

Moderation in loan portfolio growth in an environment of declining national income is a necessary process that contributes to long-term sustainable growth and macroeconomic stability in the country. On the one hand, the financial system adjusts its loan requirements to select clients and projects that are still viable, so as to guarantee the sustainability of the system. On the other, at a time when debt levels (relative to GDP) are high compared to what they were historically in Colombia, the efforts of borrowers to reduce their leverage and to strengthen their balance sheets puts them in a more solid position to deal with adverse shocks.

Graph 50
Home Prices in Colombia (Relative to the CPI)



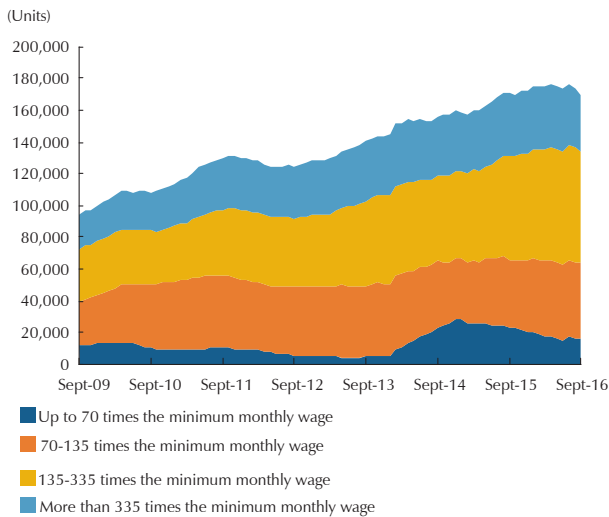
Note: Data up to the second quarter of 2016 for the NHPI-DANE and the EHPI. The latest figure for the NHPI-BR pertains to the third quarter of 2016.
Sources: DANE, DNP and Banco de la República

C. HOME PRICES

Prices in the housing market relative to the CPI continued to adjust. New home prices, given the data at June 2016, were down by 0.5% annually, according to the DANE index (IPVN-DANE) and 1.3% according to the DNP calculations (IPVN-DNP) for Bogotá. Similarly, with the information up to September, *Banco de la República's* new home index shows an annual decline of 2.4% (IPVN-BR). For existing homes, the price index calculated by the Bank increased 3.8% above consumer inflation. However, prices are still close to their historic highs (Graph 50).

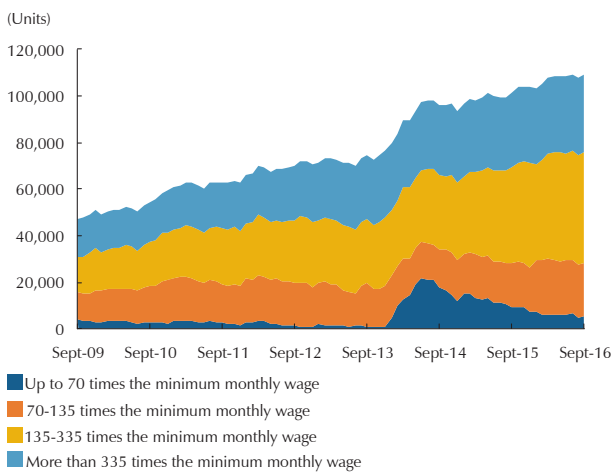
The trend in quantities suggests the supply is broad in relation to the demand for housing. According to the figures compiled by Camacol, home sales (in units) reached a peak in the first half of the year and have declined gradually since then (down 0.6% annually at September in the accumulated twelve-month period) (Graph 51). On the other hand, the sustained annual growth in supply stayed at approximately 9.0% throughout the year (Graph 52). In the case of existing homes, the figures for Bogotá - taken from *La Galería Inmobiliaria* - also suggest the percentage of properties available for sale in income brackets 4, 5, and 6 has increased.

Graph 51
New Home Sales, by Price Range^{a/}
(Cumulative figure for 12 months)



a/ Includes data from thirteen regional areas
Source: Camacol

Graph 52
New Housing Units Available for Sale, by Price Range^{a/}



a/ Includes data from thirteen regional areas
Source: Camacol

On the other hand, several indicators suggest housing would be less attractive as an investment than it was in past years. The following are some of those indicators.

- The behavior of home prices may be signaling an end to the upward part of the cycle and, hence, lower expectations for valuations in the future.
- Rent is also going up less than consumer inflation. This discourages the purchase of a second home to lease out.
- Other assets such as Colombian treasury bonds (TES) or shares of stock have appreciated considerably throughout the year, and even deposit certificates now have a higher interest rate. Consequently, financial assets are made up of investment alternatives, at least short-term ones.
- Mortgage costs have increased.

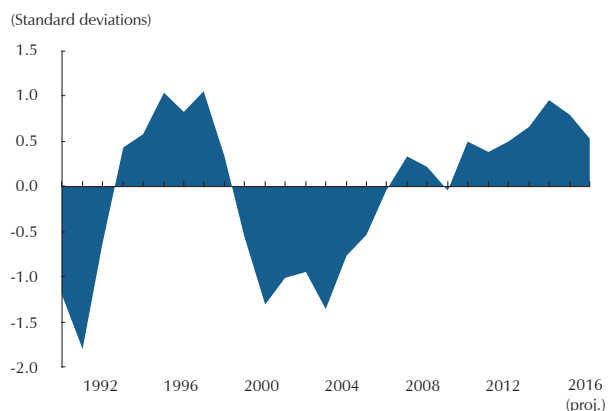
In addition to these factors, other elements, such as the economic slowdown itself, the slight increase in the unemployment rate, and the decline in consumer confidence also can discourage the demand for housing.

Therefore, the real estate market in the coming quarters is likely to continue to see a further adjustment in price increases and quantities sold. This process is necessary to guarantee the sustainability of the sector, which is labor and financing intensive.

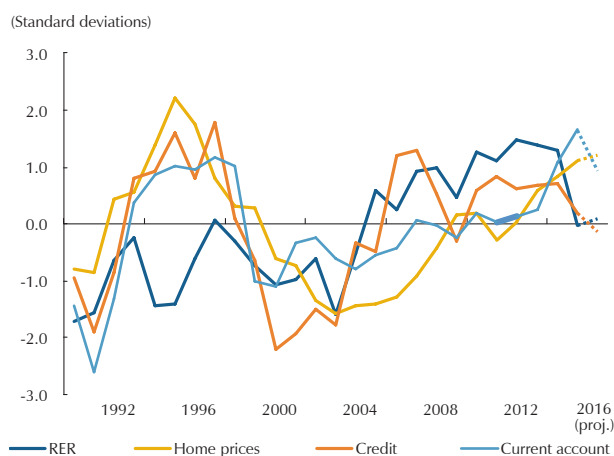
D. THE MACROECONOMIC IMBALANCE INDEX

There have been corrections in the current account deficit, in private-sector borrowing and in home prices during the last few quarters. All are consistent with the process of adjustment the economy is going through. However, they are still at levels that can be classified as historically high. The real

Graph 53
Macroeconomic Imbalance Index



Graph 54
Gaps in the Current Account, Real Exchange Rate, Home Prices and Credit^{a/}



(Proj.) Projected
a / The gaps are calculated as the difference between the observed value and the estimated long-term value.
In the case of the RER, its negative is presented. This means positive gaps, in all cases, indicate imbalances.
Source: Banco de la República

exchange rate, which was the variable that reacted most quickly after the drop in oil prices, has appreciated slightly during the year, but remains at levels above the average observed since inflation targeting was initiated.

By incorporating the evolution of these variables and the forecasts outlined in the previous chapters, the MII suggests the macroeconomic imbalances in the economy continue to be corrected during 2016, and at a somewhat faster pace than in 2015. However, in the case of the real exchange rate (RER) and home prices, the correction would appear to be less than was considered in the forecasts presented in the last quarterly report (Graph 53).

With the current estimates, the MII is at levels similar to the average calculated since 2010, and is close to the value posted in 2013, prior to the negative shock to terms of trade. For that year, the economy showed signs of excess spending reflected in a growing external deficit, the RER appeared to be overvalued, lending expanded quickly and housing was valued several points above consumer inflation. According to the new estimates, the variables that have already registered important corrections are the RER and lending, which account for most of the MII adjustment (Graph 54).

ATTACHMENT

MACROECONOMIC FORECASTS BY DOMESTIC AND FOREIGN ANALYSTS

The latest forecasts developed by domestic and foreign analysts for the major economic variables in 2016 and 2017 are summarized in this attachment. At the time they were consulted, the analysts had access to data up to October 31, 2016.

1. Forecasts for 2016

On average, the domestic analysts expect the economy to grow by 2.13%. This is 35 bp less than was estimated in the *Inflation Report* for the previous

Table A1
Forecasts for 2016

	Real GDP Growth (Percentage)	CPI Inflation (Percentage)	Nominal exchange rate end of:	Nominal fixed-term deposit rate (Percentage)	Fiscal deficit (Percentage of GDP)	Unemployment Rate in the Thirteen Major Metropolitan Areas (Percentage)
Domestic Analysts						
Alianza valores	1.80	6.00	3,300	6.95	4.30	10.20
ANIF	2.20	6.30	n. d.	7.50	2.90	10.40
Banco de Bogotá ^{a/}	2.30	5.85	2,900	7.72	3.90	9.80
Bancolombia	2.00	5.90	2,910	6.95	4.10	10.00
BBVA Colombia ^{a/}	2.20	6.20	3,040	7.49	3.90	10.30
BTG Pactual	2.30	6.09	3,080	n. d.	3.30	9.60
Corficolombiana	2.20	5.90	2,750	5.75	3.90	9.30
Corpbanca ^{a/, b/}	2.00	6.10	3,025	7.10	3.30	10.10
Corredores Davivienda ^{a/, c/}	2.10	5.92	3,100	7.25	3.90	9.53
Credicorp Capital ^{d/}	2.30	6.00	2,900	7.86	2.50	10.10
Davivienda ^{a/}	2.10	5.92	3,100	7.25	3.90	9.53
Fedesarrollo ^{a/}	2.20	5.90	n. d.	n. d.	3.90	n. d.
Ultraserfinco ^{e/}	2.00	6.00	2,950	7.30	3.90	9.50
Average	2.13	6.01	3,005	7.19	3.67	9.86
Foreign Analysts						
Citibank-Colombia	1.70	5.60	3,100	7.10	3.90	10.00
Deutsche Bank	2.10	6.30	3,024	n. d.	4.10	9.70
Goldman Sachs	1.90	6.10	3,100	n. d.	4.00	n. d.
JP Morgan	1.80	6.20	3,050	n. d.	3.90	n. d.
Average	1.88	6.05	3,069	7.10	3.98	9.85

a/ The projected deficit pertains to the national government.

b/ Formerly Banco Santander

c/ Formerly Corredores Asociados

d/ Formerly Correal

e/ Formerly Ultrabursátiles

n.d. Not available

Source: Banco de la República (electronic survey)

Table A2
Forecasts for 2017

	Real GDP Growth (Percentage)	Inflation - CPI	Nominal Exchange Rate End of:
Domestic Analysts			
Alianza valores	2.00	5.30	3,500
ANIF	2.80	4.00	n. d.
Banco de Bogotá	3.00	4.00	2,900
Bancolombia	2.60	3.90	2,950
BBVA Colombia	2.40	3.90	2,957
BGT Pactual	2.60	3.90	3,140
Corficolombiana	3.00	3.90	2,700
Corpbanca ^{a/}	2.70	4.10	2,930
Corredores Davivienda ^{b/}	2.90	5.67	n. d.
Credicorp Capital ^{c/}	2.70	3.80	2,600
Davivienda	2.90	5.67	n. d.
Fedesarrollo	2.70	3.90	n. d.
Ultraserfinco ^{d/}	2.60	4.40	2,900
Average	2.68	4.34	2,953
Foreign Analysts			
Citibank-Colombia	2.60	3.70	3,000
Deutsche Bank	2.70	4.30	2,978
Goldman Sachs	2.30	4.20	3,400
JP Morgan	2.80	n. d.	3,200
Average	2.60	4.07	3,145

a/ Formerly Banco Santander

b/ Formerly Corredores Asociados

c/ Formerly Correval

d/ Formerly Ultrabursátiles

Not available

Source: Banco de la República (electronic survey)

quarter. Foreign analysts who were consulted are forecasting 1.88% GDP growth, on average.

As for prices, the domestic analysts estimate 6.01% inflation and the foreign analysts expect it to be 6.05% by the end of the year. Both forecasts are outside the target range set for 2016 by the Board of Directors of *Banco de la República* (JDBR) (between 2.0% and 4.0%).

In terms of the exchange rate, the domestic analysts expect the representative market rate (RMR) to end the year at COP 3,005, on average, versus COP 3,041 estimated in the survey taken into account for the previous report. The foreign analysts expect the RMR to be around COP 3,069 by the end of the year.

Regarding the interest rate on fixed-term deposits (DTF), the domestic analysts expect it to average 7.19%, which is 34 bp less than was estimated in the *Inflation Report* for the previous quarter. They also expect the unemployment rate to be 9.86%.

2. Forecasts for 2017

The domestic analysts are forecasting 2.68% economic growth in 2017, while the foreign analysts are expecting 2.60%. As for inflation, the domestic and foreign analysts are forecasting 4.34% and 4.07%, respectively. In terms of the nominal exchange rate, the domestic institutions are expecting it to average COP 2,953, while the foreign ones are forecasting COP 3,145.

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